

363IHSSF4031



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Site Name KOCH NORTH PARAXYLENE

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DocDate 5/10/1990

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Division WASTE MANAGEMENT

Section SUPERFUND

Program IHS (IHS)

DocCat FACILITY

Richard Catlin & Associates, Inc.

CONSULTING ENGINEERS AND HYDROGEOLOGISTS

RC&A

May 10, 1990

RECEIVED

MAY 21 1990

Koch Refining Company
ATTN: Mr. Jim Strickland
P. O. Box 3958
Wilmington, NC 28406

Wilmington Regional Office
RFM

RE: Koch Fuels
Wilmington, NC
RC&A Project #8646

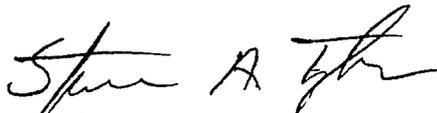
Dear Mr. Strickland:

Attached are the results and copies of the sanitary sewer samples obtained this past April from upstream and downstream locations at the Koch facility. As with the previous lab results since the sewer line was repaired, these test results indicate that the dominant contamination detected in the sewer water is apparently originating from an up gradient or off-site source. After discussing this with Mr. Rick Shiver, P.G., of the N.C. DEHNR, he has agreed to contact Mr. Dennis Burks, Pretreatment Administrator for the City of Wilmington, and decide whether to expand the sampling schedule or to cease sampling activities all together.

Please, forward the additional copies to Mr. Rick Shiver and Mr. Tom Hutzler, Pretreatment Inspector for the James A. Loughlin plant. If you should have any questions or requests please contact our office.

TO STEVE
DATE ASSIGNED 06-11-90
DATE DUE 12 DATE REVD
INSTRUCTIONS PLEASE
CALL
FOR
ADDITIONAL
INFORMATION

Sincerely,


Stephan A. Tyler, Manager
Monitoring Operations

Enclosures

SAT/nd

Oxford Laboratories, Inc.

Analytical and Consulting Chemists

DATE RECEIVED 4-24-90
DATE REPORTED 5-7-90
90W2560

1316 South Fifth Street
Wilmington, N.C. 28401
(919) 763-9793

PAGE 1 OF 1

RICHARD CATLIN & ASSOCIATES
P. O. BOX 557
WRIGHTSVILLE BEACH, NC 28480

P.O. # 900424-2

ATTENTION: STEVE TYLER

SAMPLE DESCRIPTION: KOCH S.S. (BTEX-TPFH)

1. UPSTREAM
2. DOWNSTREAM

RESULTS

	<u>1</u>	<u>2</u>
Benzene, PPB	<1.0	1.3
Toluene, PPB	121	9.4
Ethyl Benzene, PPB	<1.0	1.7
Total Xylenes, PPB	<1.0	41.0
Paraxylene, PPB	<1.0	37.4
Total Petroleum Fuel Hydrocarbons using SW846 3510 with GC/FID as Kerosene/Diesel, PPM	1.62	0.52

BRUCE A. BABSON , CHEMIST

Linda Hydu (for Bruce Babson)



TO RIVER

10' EASEMENT

BOILER BLDG.

OFFICE

801

601

LOAD DOCK

6" SEWER LINE (old office)

301

401

501

402

2' SEWER LINE

DOWNSTREAM

RIVER ROAD

CAPE FEAR RIVER

10' EASEMENTS

5

6

CONC. FOUND.

9

3

1

UPSTREAM

LOAD DOCK

PUMP MANI.

OFFICE

7

4

2

KOCH REFINING CO., INC.

NORTH TERMINAL
WILMINGTON, NC NEW HANOVER CO.

Richard Catlin & Associates, Inc.

CONSULTING ENGINEERS
AND HYDROGEOLOGISTS

RC&A



KOCH REFINING COMPANY

Mr. Rick Shiver, P. G.
N. C. Department of Natural Resources
Division Of Environmental Management
7225 Wrightsville Avenue
Wilmington, N. C. 28403-3696

RECEIVED

OCT 16 1989

Wilmington Regional Office

Dear Mr. Shiver,

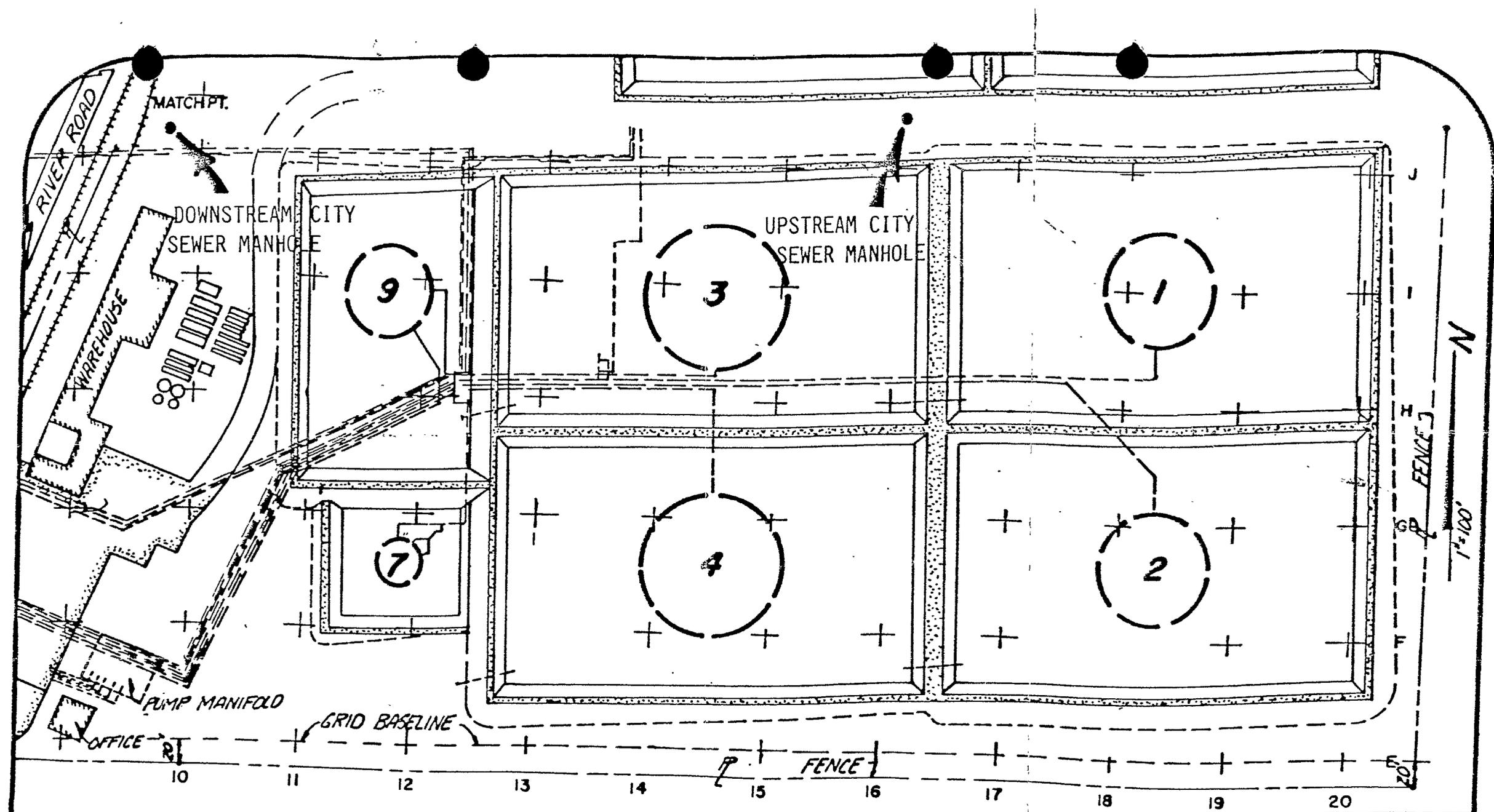
Attached is a plot plan showing the two locations where water samples were taken from the city sanitary sewer which runs through the Koch Refining Company's terminal in Wilmington, N. C. Also attached are the results of the laboratory analyses of the samples.

If you should have any questions concerning this matter, please call.

Sincerely,

Jim Strickland, Terminal Manager
Koch Refining Company

JHS/lkc



SAMPLE LOCATIONS

KOCH FUELS, INC.
 WILMINGTON, N.C.
 RICHARD CATLIN & ASSOCIATES, INC.

LAW & COMPANY
Consulting and Analytical Chemists

ESTABLISHED 1903

1711 Castle Street
P.O. Box 629
Wilmington, N.C. 28402
919-762-7082 919-762-8956

RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 9-29-89
DATE COLLECTED: 9-29-89
COLLECTED BY: K.Y. & A.C.
LAB I.D. #: EW 8735

SAMPLE DESCRIPTION: KOCH - SANITARY SEWER

TESTS/SAMPLES	UNITS	UPSTREAM	DOWN STREAM
BENZENE	PPB	<0.2	7.0
TOLUENE	PPB	12	20
XYLENE	PPB	21	495
PARAXYLENE	PPB	21	495
KEROSENE	PPB	<50	<50
DIESEL FUEL	PPB	<50	<50

Dolly Bidwan
LABORATORY DIRECTOR



KOCH REFINING COMPANY

RECEIVED
JUL 17 1989
Wilmington Regional Office
DEM

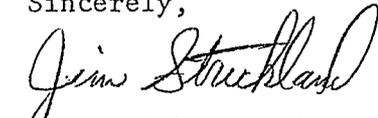
Mr. Rick Shiver, P. G.
N. C. Department of Natural Resources
Division Of Environmental Management
7225 Wrightsville Avenue
Wilmington, N. C. 28403-3696

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Sincerely,



Jim Strickland, Terminal Manager
Koch Refining Company

JHS/lkc

LAW & COMPANY
Consulting and Analytical Chemists

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Branch Office
4736 Spruill Ave.
North Charleston, S.C. 29406
803-747-1589

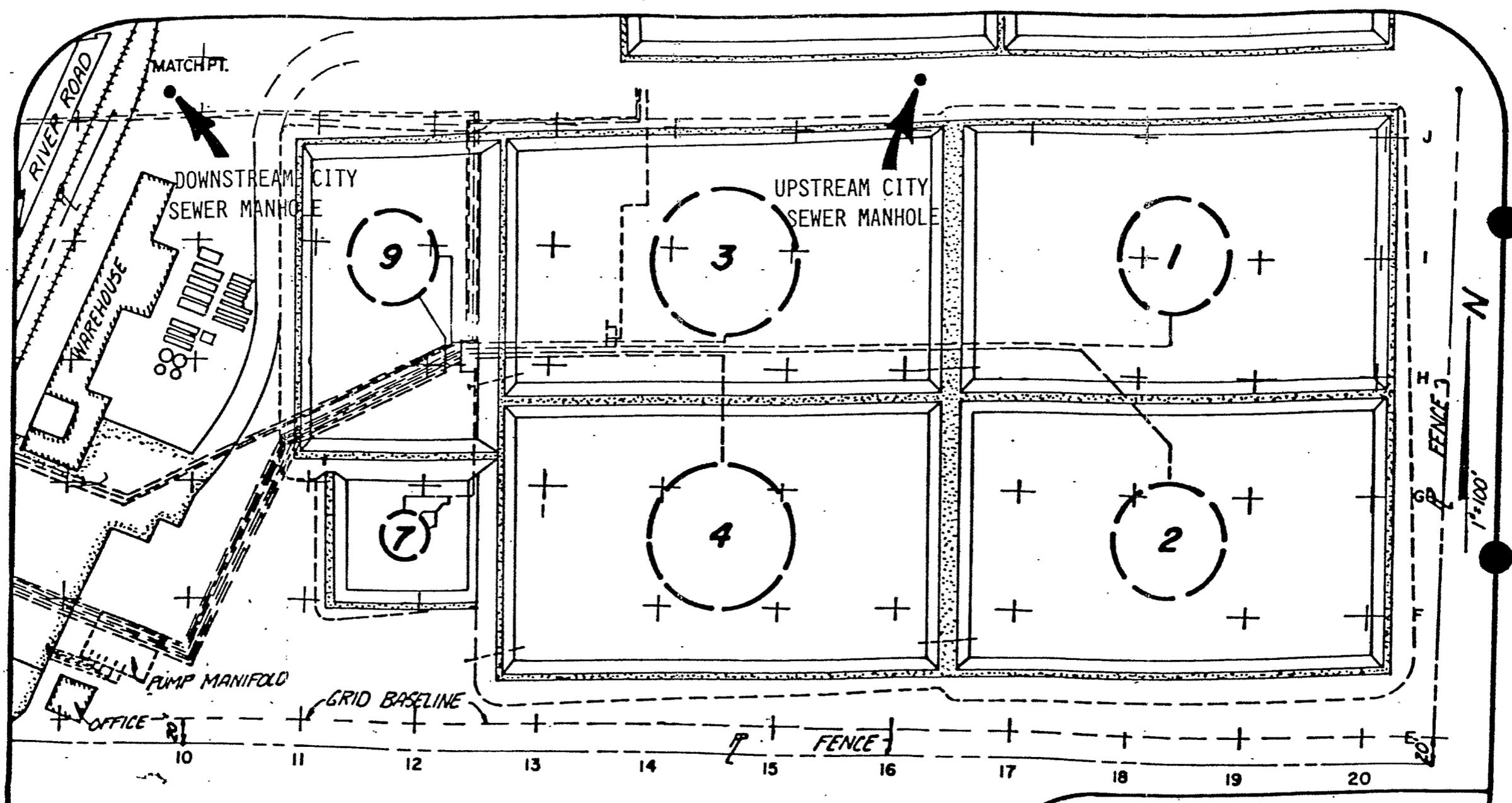
RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 6-20-89
DATE COLLECTED: 6-20-89
COLLECTED BY: STEVE TYLER
LAB I.D. # EW 7832

SAMPLE DESCRIPTION: KOCH S.S.

TESTS/SAMPLES	UNITS	UP STREAM	DOWN STREAM
BENZENE	PPB	<0.2	0.8
TOLUENE	PPB	6.7	14
XYLENE	PPB	1.8	74
PARAXYLENE	PPB	1.4	73
DIESEL FUEL	PPB	<50	<50
KEROSENE	PPB	<50	<50


LABORATORY DIRECTOR



SAMPLE LOCATIONS

KOCH FUELS, INC.
 WILMINGTON, N.C.
 RICHARD CATLIN & ASSOCIATES, INC.

TO KIRK
DATE ASSIGNED 07-18-89
DATE DUE _____ DATE DONE _____
INSTRUCTIONS PLEASE
FILE.

Incident Name Koch Fuels, Inc.
Region/County WIRO/NEW HANOVER
Groundwater Incident File # 205, 3261, 3262, 3264
Ranking Performed by Carol Miller Date 6-28-9

NORTH CAROLINA

GROUNDWATER CONTAMINATION INCIDENT MANAGEMENT
SITE PRIORITY RANKING SYSTEM

	<u>Points Awarded</u>
I. IMMINENT HAZARD ASSESSMENT	
A. Explosion - free product in confined areas or vapor phase product detected at or above 20% of the lower explosive limit; award 50 points total	<u>0</u>
B. Fire - free product subject to ignition in exposed areas such as surface water impoundments, streams, excavations, etc.; award 50 points total	<u>50</u>
II. EXPOSURE ASSESSMENT	
A. Contaminated Drinking Water Supplies	
1. Private, domestic water supply well containing substances in concentrations exceeding Class GA underground water quality standards; award 10 points per well	<u>0</u>
2. Public or institutional water supply well containing substances in concentrations exceeding Class GA underground water quality standards; award 30 points per well	<u>0</u>
3. Exceedences of Class WS-1 surface water quality standards as a result of groundwater discharge; award 20 points per surface water body impacted	<u>0</u>
4. If a water supply well identified in items II.A.1 and II.A.2 cannot be replaced by an existing public water supply source requiring hook-up only; award additional 10 points per irreplaceable well	<u>0</u>

B. Threat To Uncontaminated Drinking Water Supplies

1. Private, domestic water supply well located within 1500 feet downgradient of contaminant source; award 10 points per well 10
2. Public or institutional water supply well located within 1/2 mile downgradient of contaminant source; award 15 points per well 0
3. Raw surface water intake for public water supply located within 1/2 mile downgradient of contaminant source; award 5 points per water supply system 0
4. If any well identified in items II.B.1 and II.B.2 is located within 250 feet of contaminant source; award additional 20 points total 0

C. Vapor Phase Exposure

1. Product vapors detected in inhabitable building(s); award 30 points total 0
2. Product vapors detected in other confined areas (uninhabitable buildings, sewer lines, utility vaults, etc.); award 5 points total 0

III. CONTAMINANT HAZARD ASSESSMENT (chemical groups are categorized based on toxicity, mobility and persistence in the environment). Evaluate the most hazardous substances detected and select only one of the following:

A. Award 30 points total if contaminants detected are identified with any of the following groups: 30

1. Aromatic (Benzene) Acids
2. Aromatic Hydrocarbons (Benzene Derivatives)
3. Sulfonated Hydrocarbons
4. Halogenated Hydrocarbons
5. Alkaloids
6. Anilines
7. Phenols
8. Aldehydes
9. Ketones
10. Organic Sulfur Compounds (Sulfides, Mercaptans)
11. Organometallic Compounds

12. Cyanides
13. Esters
14. Metal Salts, Including Heavy Metals

B. Award 20 points total if contaminants detected are identified with any of the following groups: 0

1. Aliphatic (Fatty) Acids
2. Alcohols
3. Aliphatic Hydrocarbons (Petroleum Derivative)
4. Pyridines
5. Thiocyanides
6. Mineral and Metal Acids
7. Mineral and Metal Bases
8. Oxides
9. Sulfides

C. Award 10 points total if contaminants detected are identified with any of the following groups: 0

1. Aliphatic Amines and Their Salts
2. Sugars and Cellulose
3. Carbon and Graphite

IV. SOURCE ASSESSMENT

A. Free product thickness of $\geq 1/4$ inch detected on water table in observation or monitoring well; award 20 points total 20

B. Contaminated Soil (select only one answer)

1. Soil saturated with product (saturation determined by release of free liquid upon compaction of a soil sample by hand pressure); award 10 points total 10

2. Soil exhibiting organic vapor content above 100 ppm as measured by organic vapor or volatile organic detection equipment; award 5 points total 0

C. Uncontrolled or Unabated Primary Source (including dumpsites, stockpiles, lagoons, land applications, septic tanks, landfills, underground and above ground storage tanks, etc.)

1. Suspected or confirmed source remains in active use and continues to receive raw product, wastewater or solid waste; award 20 points per source 0
2. Active use of suspected or confirmed source has been discontinued or source was caused by a one-time release of product or waste, however, source continues to release product or contaminants into the environment; award 10 points per source 10

V. ENVIRONMENTAL VULNERABILITY ASSESSMENT

A. Vertical Contaminant Migration - Literature or well logs indicate that no confining layer is present above bedrock or above twenty feet below land surface; award 10 points total 10

B. Horizontal Contaminant Migration - Data or observations indicate that no discharge points or aquifer discontinuities exist between the source and the nearest downgradient drinking water supply; award 10 points total 0

C. Hydraulic Gradient Is Determined By (select only one answer):

1. Calculations based on groundwater level measurements; award 10 points total 10

2. Observation of significant recharge/discharge features in the vicinity of contaminant source and local topographic features; award 5 points total 0

3. Observation of local topographic features only; award 0 points 0

D. Existing Groundwater Quality

1. Analytical test(s) performed on groundwater sample(s) obtained from site confirm presence of substances in concentrations exceeding Class GA underground water quality standards; award 10 points total 10

2. Source(s) identified in Section IV constitute the only known source(s) of contamination resulting in exposure or potential exposure identified in Section II; award 10 points total 0

TOTAL POINTS AWARDED

160



KOCH REFINING COMPANY

Mr. Rick Shiver, P. G.
N. C. Department of Natural Resources
Division Of Environmental Management
7225 Wrightsville Avenue
Wilmington, N. C. 28403-3696

RECEIVED
JUN 12 1989
Wilmington Regional Office
DEM

Dear Mr. Shiver,

Attached is a plot plan showing the two locations where water samples were taken from the city sanitary sewer which runs through the Koch Refining Company's terminal in Wilmington, N. C. Also attached are the results of the laboratory analyses of the samples:

If you should have any questions concerning this matter, please call.

Sincerely,

Jim Strickland, Terminal Manager
Koch Refining Company

JHS/1kc

LAW & COMPANY
Consulting and Analytical Chemists

ESTABLISHED 1903

Main Office
1711 Castle Street
P.O. Box 629
Wilmington, N.C. 28402
919-762-7082 919-762-8956
TWX 510-937-0280

Branch Office
4736 Spruill Ave.
North Charleston, S.C. 29406
803-747-1589

RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 5-22-89
DATE COLLECTED: 5-22-89
COLLECTED BY: A. COOPER
LAB I.D. # EW 7517

SAMPLE DESCRIPTION: KOCH - SANITARY SEWER

<u>TESTS/SAMPLES</u>	<u>UNITS</u>	<u>UP STREAM</u>	<u>DOWN STREAM</u>
BENZENE	PPB	<0.2	1.1
TOLUENE	PPB	4.8	30
XYLENE	PPB	30	56
PARAXYLENE	PPB	30	51
KEROSENE	PPB	<50	<50
DIESEL FUEL	PPB	<50	<50

Dolly Bidwan
LABORATORY DIRECTOR



KOCH REFINING COMPANY

April 6, 1989

RECEIVED
APR 10 1989
Wilmington Regional Office
DEPT

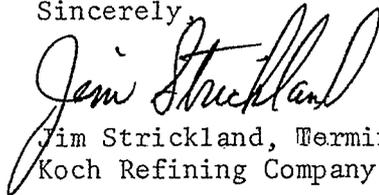
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N. C. Department of Natural Resources
Division Of Environmental Management
7225 Wrightsville Avenue
Wilmington, N. C. 28403-3696

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Sincerely,



Jim Strickland, Terminal Manager
Koch Refining Company

JHS/lkc

LAW & COMPANY
Consulting and Analytical Chemists

ESTABLISHED 1903

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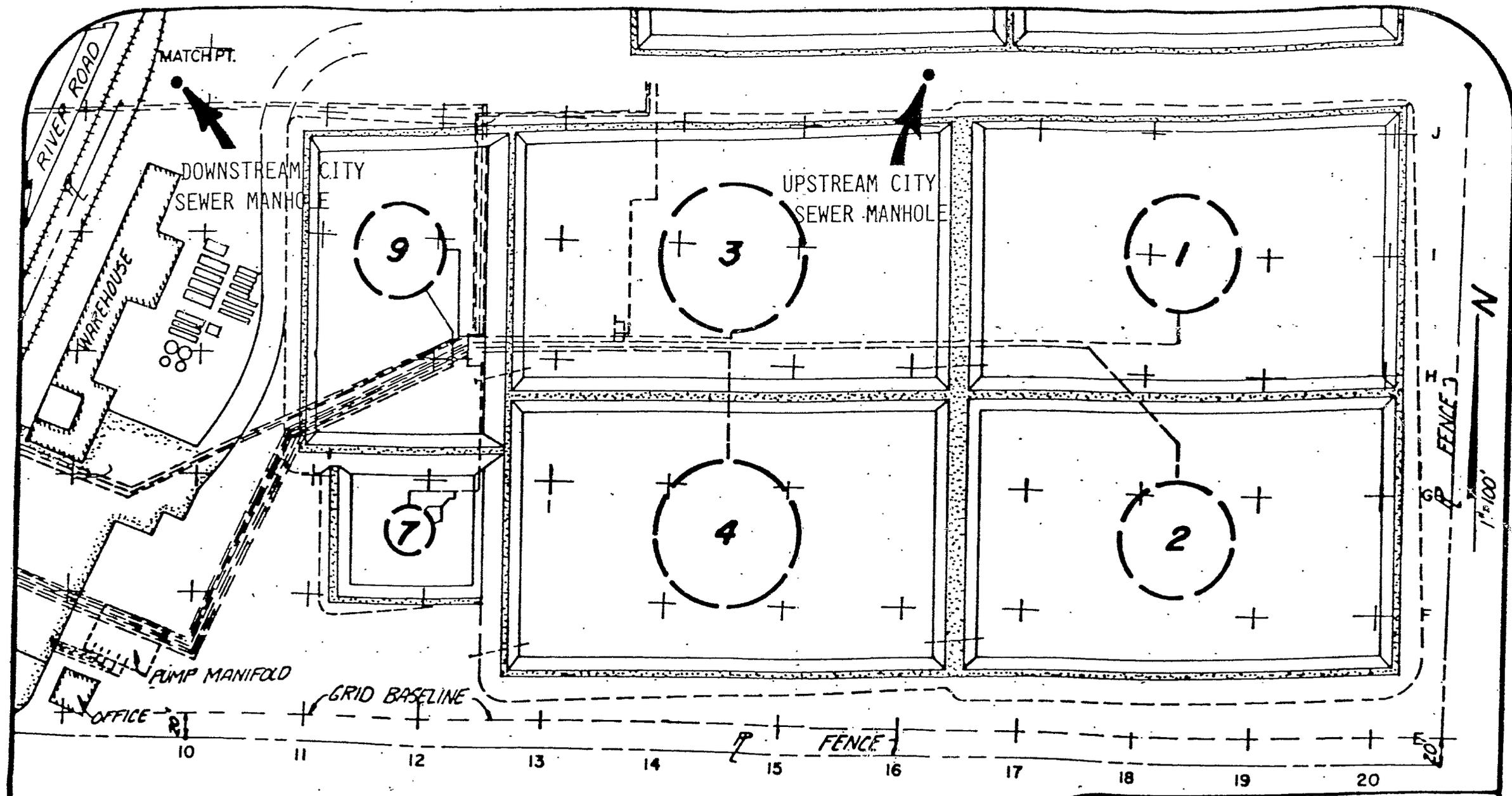
RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 3-28-89
DATE COLLECTED: 3-28-89
COLLECTED BY: A. COOPER
LAB I.D. # EW 6943

SAMPLE DESCRIPTION: KOCH - SANITARY SEWER

TESTS/SAMPLES	UNITS	UP STREAM	DOWN STREAM
BENZENE	PPB	<0.2	22
TOLUENE	PPB	36	40
XYLENE	PPB	17	207
ETHYL BENZENE	PPB	<0.2	7.5
KEROSENE	PPB	<50	<50
#2 FUEL OIL	PPB	<50	<50
PARAXYLENE	PPB	14	200

Dolly Bidwan
LABORATORY DIRECTOR



SAMPLE LOCATIONS

KOCH FUELS, INC.
 WILMINGTON, N.C.
 RICHARD CATLIN & ASSOCIATES, INC.



RECEIVED

APR 03 1989

KOCH REFINING COMPANY

Wilmington Regional Office
DEM

March 29, 1989

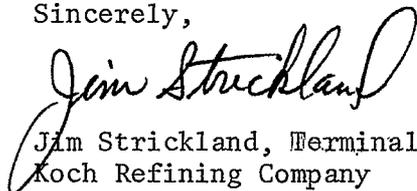
Mr. Rick Shiver, P. G.
N. C. Department of Natural Resources
Division Of Environmental Management
7225 Wrightsville Avenue
Wilmington, N. C. 28403-3696

Dear Mr. Shiver,

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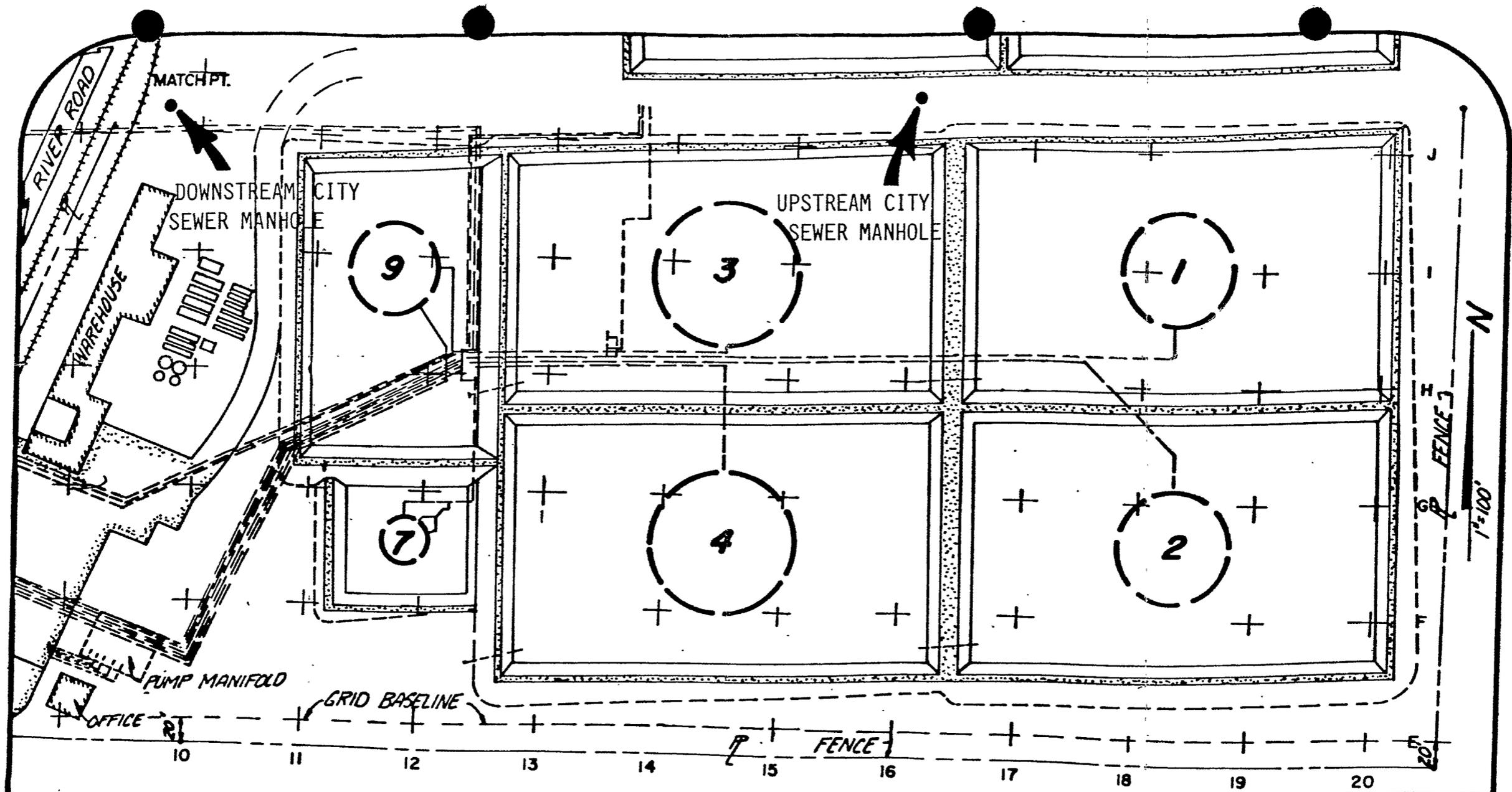
If you should have any questions concerning this matter, please call..

Sincerely,



Jim Strickland, Terminal Manager
Koch Refining Company

JHS/lkc



SAMPLE LOCATIONS

KOCH FUELS, INC.
 WILMINGTON, N.C.

RICHARD CATLIN & ASSOCIATES, INC.

LAW & COMPANY
Consulting and Analytical Chemists

ESTABLISHED 1903

Main Office
1711 Castle Street
P.O. Box 629
Wilmington, N.C. 28402
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Branch Office
4736 Spruill Ave.
North Charleston, S.C. 29406
803-747-1589

RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 3-10-89
DATE COLLECTED: 3-10-89
COLLECTED BY: A.COOPER
LAB I.D. # EW 6882

SAMPLE DESCRIPTION: KOCH, SANITARY SEWER

TESTS/SAMPLES	UNITS	UP STREAM	DOWN STREAM
BENZENE	PPB	<0.2	4.2
TOLUENE	PPB	20	17
XYLENE	PPB	3.8	93
ETHYL BENZENE	PPB	<0.2	<0.2
KEROSENE	PPB	<50	<50
#2 FUEL OIL	PPB	<50	<50
PARAXYLENE	PPB	3.8	91


LABORATORY DIRECTOR

Richard Catlin & Associates, Inc.

CONSULTING ENGINEERS AND HYDROGEOLOGISTS

RC&A

January 25, 1989

Koch Refining Company
ATTN: Mr. Jim Strickland
P. O. Box 3958
Wilmington, NC 28406

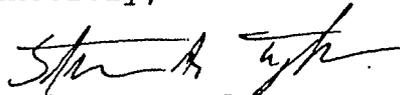
RE: Koch Fuels
Wilmington, NC
RC&A Project #8646

Dear Mr. Strickland:

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If you should have any questions or requests regarding this letter, please do not hesitate to contact our office.

Sincerely,



Stephan A. Tyler, Manager
Monitoring Operations

Enclosures

SAT/nd

LAW & COMPANY
Consulting and Analytical Chemists

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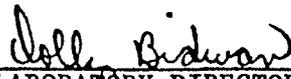
Branch Office
4736 Spruill Ave.
North Charleston, S.C. 29406
803-747-1589

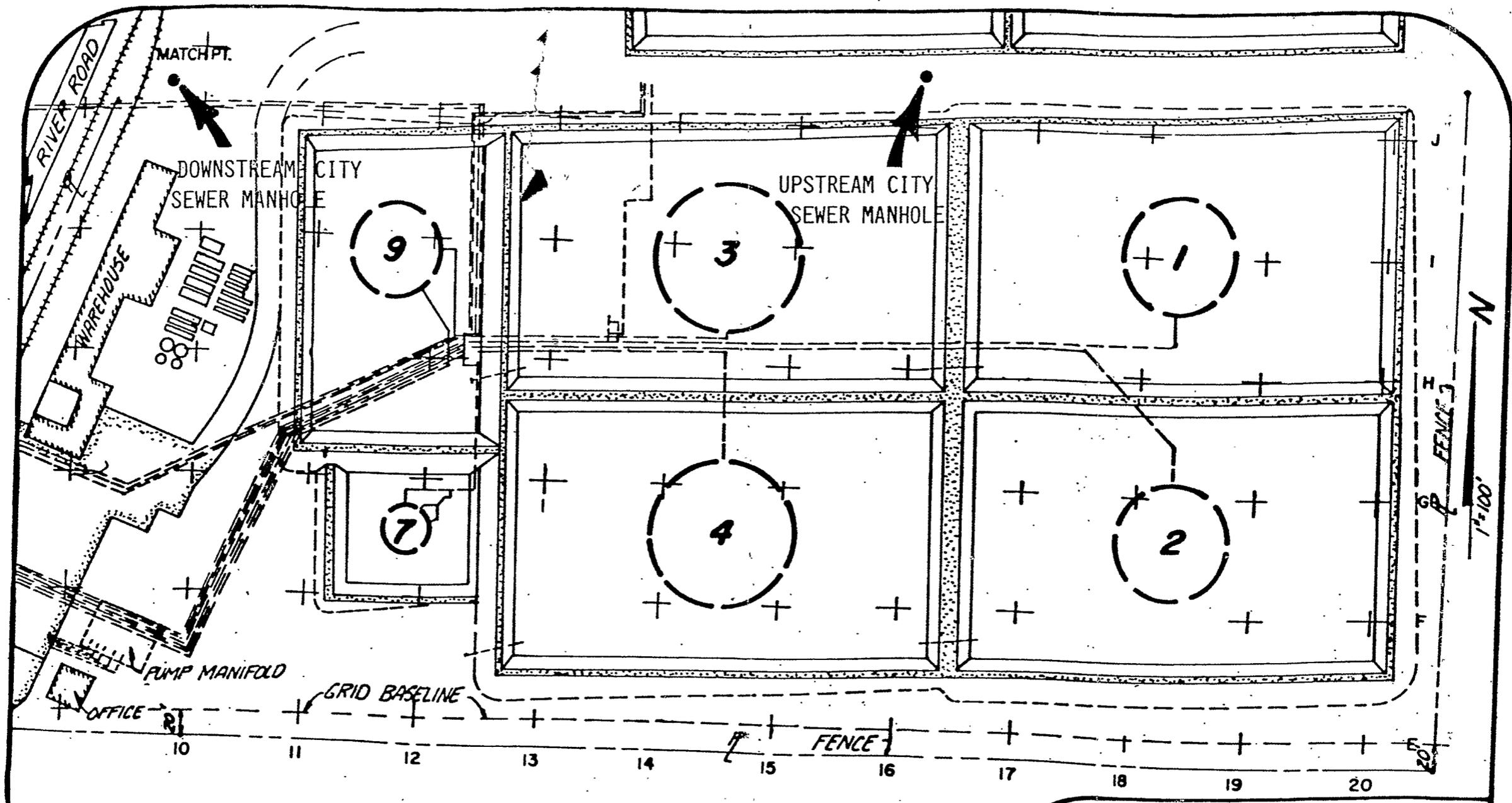
RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 1-16-89
DATE COLLECTED: 1-16-89
COLLECTED BY: S. TYLER
LAB I.D. # EW 6403

SAMPLE DESCRIPTION: KOCH S.S.

TESTS/SAMPLES	UNITS	UP STREAM	DOWN STREAM
BENZENE	PPB	<0.2	<0.2
TOLUENE	PPB	18	27
XYLENE	PPB	23	19
ETHYL BENZENE	PPB	<0.2	<0.2
KEROSENE	PPB	<50	<50
#2 FUEL OIL	PPB	<50	<50
PARAXYLENE	PPB	23	19


LABORATORY DIRECTOR



SAMPLE LOCATIONS

KOCH FUELS, INC.
 WILMINGTON, N.C.

RICHARD CATLIN & ASSOCIATES, INC.

Richard Catlin & Associates, Inc.

CONSULTING ENGINEERS AND HYDROGEOLOGISTS

RECEIVED

JAN 31 1989

Wilmington Regional Office
DEM

RC&A

January 10, 1989

Koch Refining Company
ATTN: Mr. Jim Strickland
P. O. Box 3958
Wilmington, NC 28406

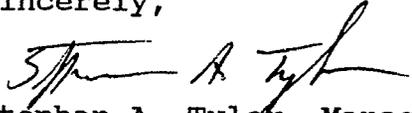
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Wilmington, NC
RC&A Project #8646

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Sincerely,


Stephan A. Tyler, Manager
Monitoring Operations

Enclosures

SAT/nd

LAW & COMPANY
Consulting and Analytical Chemists

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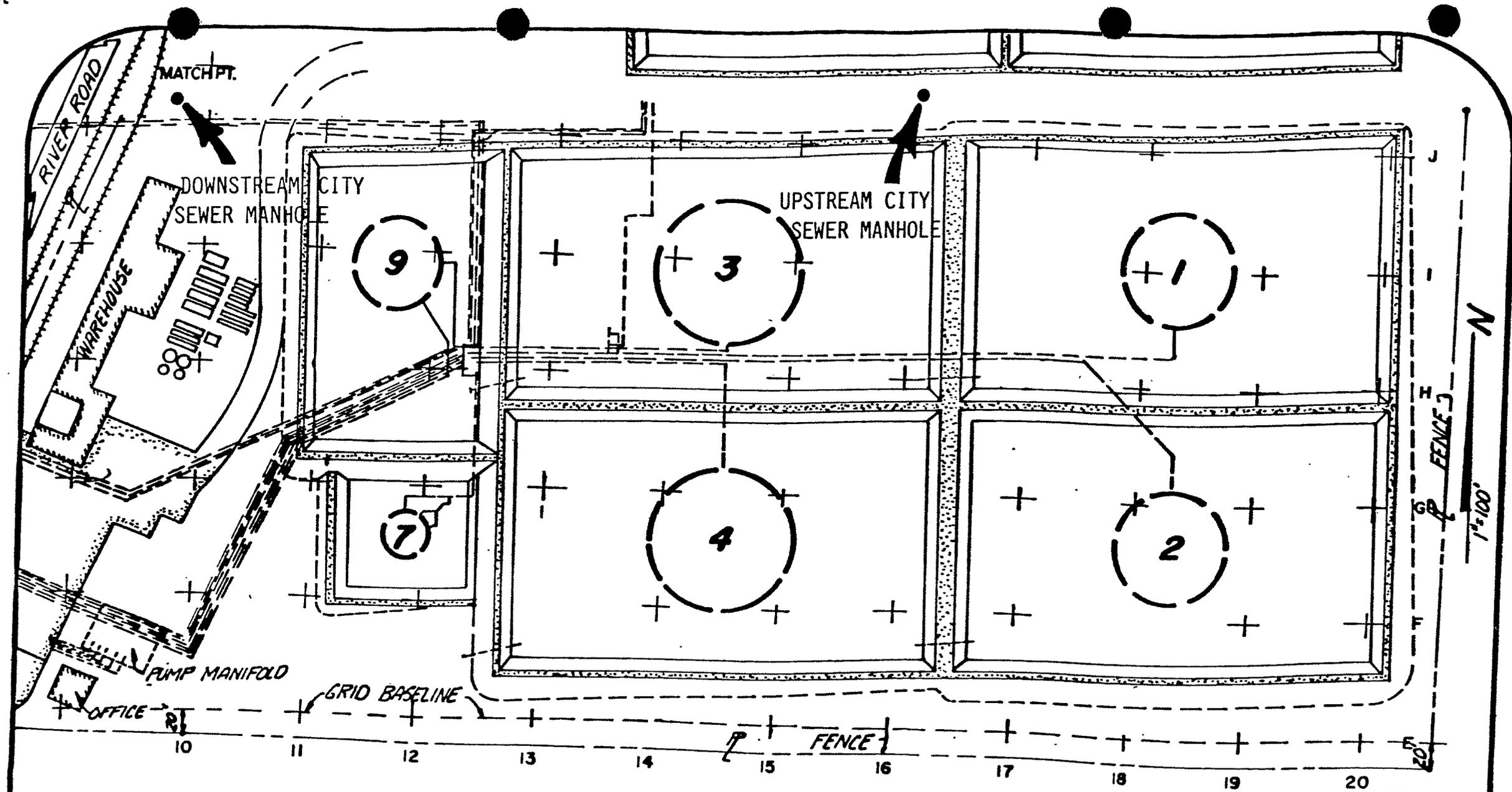
RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 12-21-88
DATE COLLECTED: 12-21-88
COLLECTED BY: STEVE TYLER
LAB I.D. # EW 6227

SAMPLE DESCRIPTION: KOCH S.S.

TESTS/SAMPLES	UNITS	UP STREAM	DOWN STREAM
BENZENE	PPB	.4	.8
TOLUENE	PPB	12	13
XYLENE	PPB	1.6	12
ETHYL BENZENE	PPB	<0.2	<0.2
KEROSENE	PPB	<50	<50
#2 FUEL OIL	PPB	<50	<50
PARAXYLENE	PPB	1.3	11


LABORATORY DIRECTOR



SAMPLE LOCATIONS

KOCH FUELS, INC.
 WILMINGTON, N.C.
 RICHARD CATLIN & ASSOCIATES, INC.

LAW & COMPANY
Consulting and Analytical Chemists

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North Charleston, S.C. 29406
803-747-1589

RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 12-20-88
DATE COLLECTED: 12-20-88
COLLECTED BY: A.C.
LAB I.D. # EW 6165

SAMPLE DESCRIPTION: KOCH SOUTH TERMINAL, WILMINGTON, N.C.

TESTS/SAMPLES	UNITS	B-1	B-2	B-3
BENZENE	PPB	<0.2	103	<0.2
TOLUENE	PPB	<0.2	40	<0.2
XYLENE	PPB	<0.2	28	<0.2
METHYL TER-BUTYL ETHER	PPB	<0.2	16	<0.2
CADMIUM	PPB	<10	<10	<10
TOTAL CHROMIUM	PPB	<10	<10	<10
LEAD	PPB	20	20	40

Dolly Bidwan
LABORATORY DIRECTOR

Richard Catlin & Associates, Inc.

CONSULTING ENGINEERS AND HYDROGEOLOGISTS

December 5, 1988

RC&A

RECEIVED

DEC 20 1988

Wilmington Regional Office
DEM

Koch Refining Company
ATTN: Mr. Jim Strickland
P. O. Box 3958
Wilmington, NC 28406

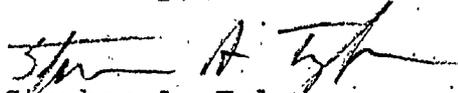
RE: Koch Fuels
Wilmington, NC
RC&A Project #8646

Dear Mr. Strickland:

Attached is a figure illustrating the locations where water samples were taken from the City sanitary sewer which runs through the Koch Fuels terminal in Wilmington, NC. Also attached are the results of the laboratory analyses of the samples. Additional copies are enclosed for you to forward to Mr. Rick Shiver, P.G., of the NC Department of Natural Resources, Division of Environmental Management, and to Mr. Thomas Hutzler, Pre-Treatment Inspector, for the James A. Loughlin plant.

If you should have any questions or requests, please do not hesitate to contact our office.

Sincerely,


Stephan A. Tyler
Project Geologist

Enclosures

SAT/nd

LAW & COMPANY
Consulting and Analytical Chemists

ESTABLISHED 1903

Main Office
1711 Castle Street
P.O. Box 629
Wilmington, N.C. 28402
919-762-7082 919-762-8956
TWX 510-937-0280

Branch Office
4736 Spruill Ave.
North Charleston, S.C. 29406
803-747-1589

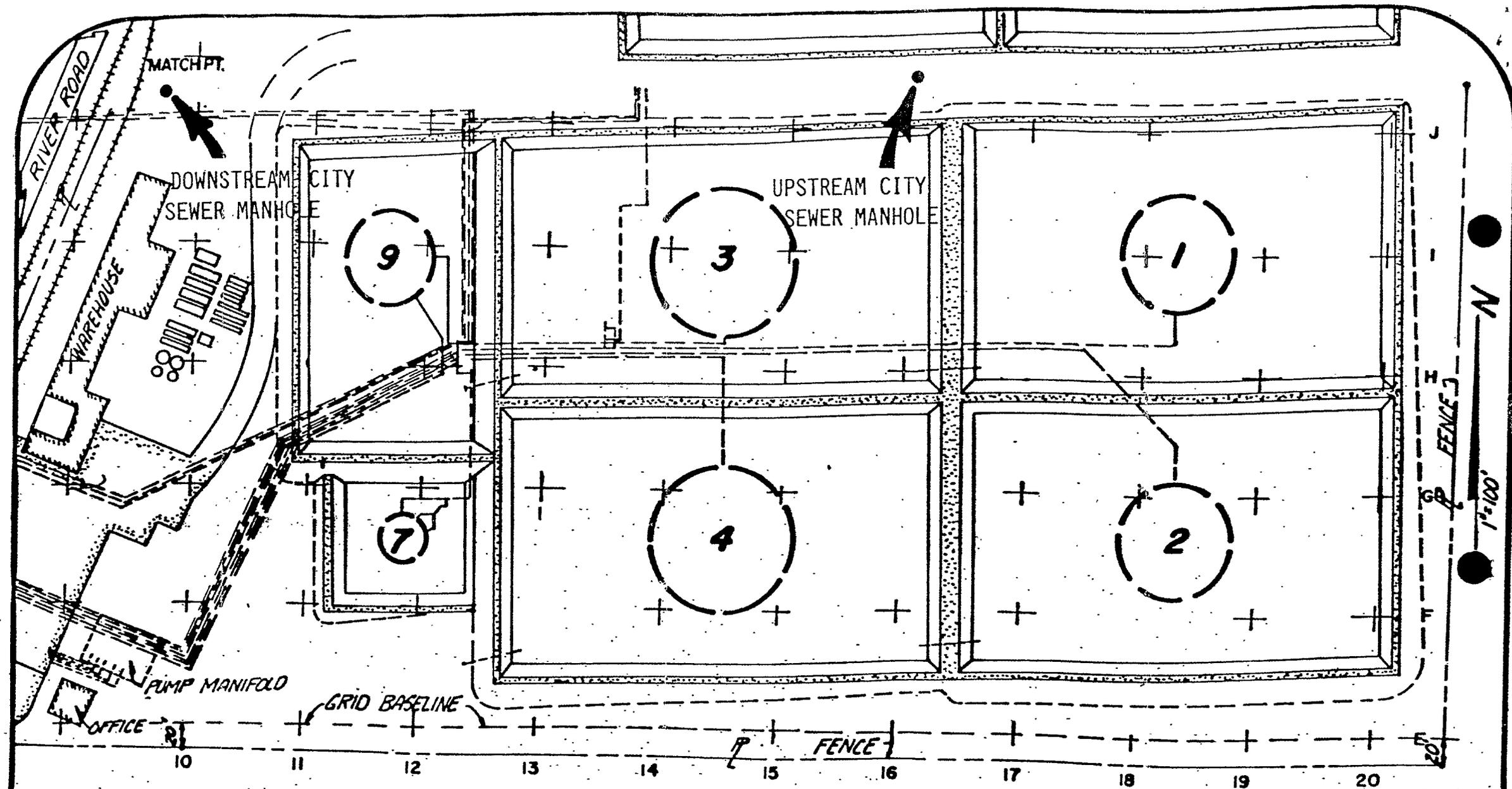
RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, N.C. 28480

DATE RECEIVED: 11-14-88
DATE COLLECTED: 11-14-88
COLLECTED BY: STEVE TYLER
LAB I.D. #: EW 4155

SAMPLE DESCRIPTION: KOCH - SANITARY SEWER

TESTS/SAMPLES	UNITS	UP STREAM	DOWN STREAM
BENZENE	PPB	<0.2	5.4
TOLUENE	PPB	<0.2	.33
XYLENE	PPB	<0.2	155
ETHYL BENZENE	PPB	<0.2	0.9
KEROSENE	PPB	<50	<50
#2 FUEL OIL	PPB	<50	<50
PARAXYLENE	PPB	<0.2	125

Dolly Bedwan
LABORATORY DIRECTOR



SAMPLE LOCATIONS

KOCH FUELS, INC.
 WILMINGTON, N.C.
 RICHARD CATLIN & ASSOCIATES, INC.

Richard Catlin & Associates, Inc.

CONSULTING ENGINEERS AND HYDROGEOLOGISTS

RC&A

July 29, 1988

Koch Refining Company
ATTN: Mr. Jim Strickland
P. O. Box 3958
Wilmington, NC 28406

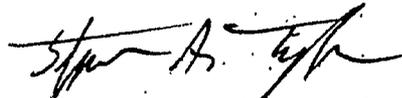
RE: Koch Fuels
Wilmington, NC

Dear Mr. Strickland

At the request of the N C Division of Environmental Management, we have taken water samples from the City sanitary sewer which runs through the Koch Fuels terminal in Wilmington, NC. Attached is a figure indicating the sample locations. Also attached are the results of the laboratory analyses of the samples. Additional copies are enclosed for you to forward to Mr. Rick Shiver, P.G., of the NC Department of Environmental Management, and Mr. Thomas Hutzler, Pre-Treatment Inspector, for the James A. Loughlin plant.

If you should have any questions or requests, please do not hesitate to contact our office.

Sincerely,



Stephan A. Tyler
Project Geologist

Enclosures

SAT/nd

RECEIVED

AUG 11 1988

GROUNDWATER SECTION
WILMINGTON REGIONAL OFFICE

LAW & COMPANY
Consulting and Analytical Chemists

ESTABLISHED 1903

Main Office
1711 Castle Street
P.O. Box 629
Wilmington, N.C. 28402

RICHARD SPIVEY, President
919-762-7082 919-762-8956
TWX 510-937-0280

REPORT DATE: 7-28-88

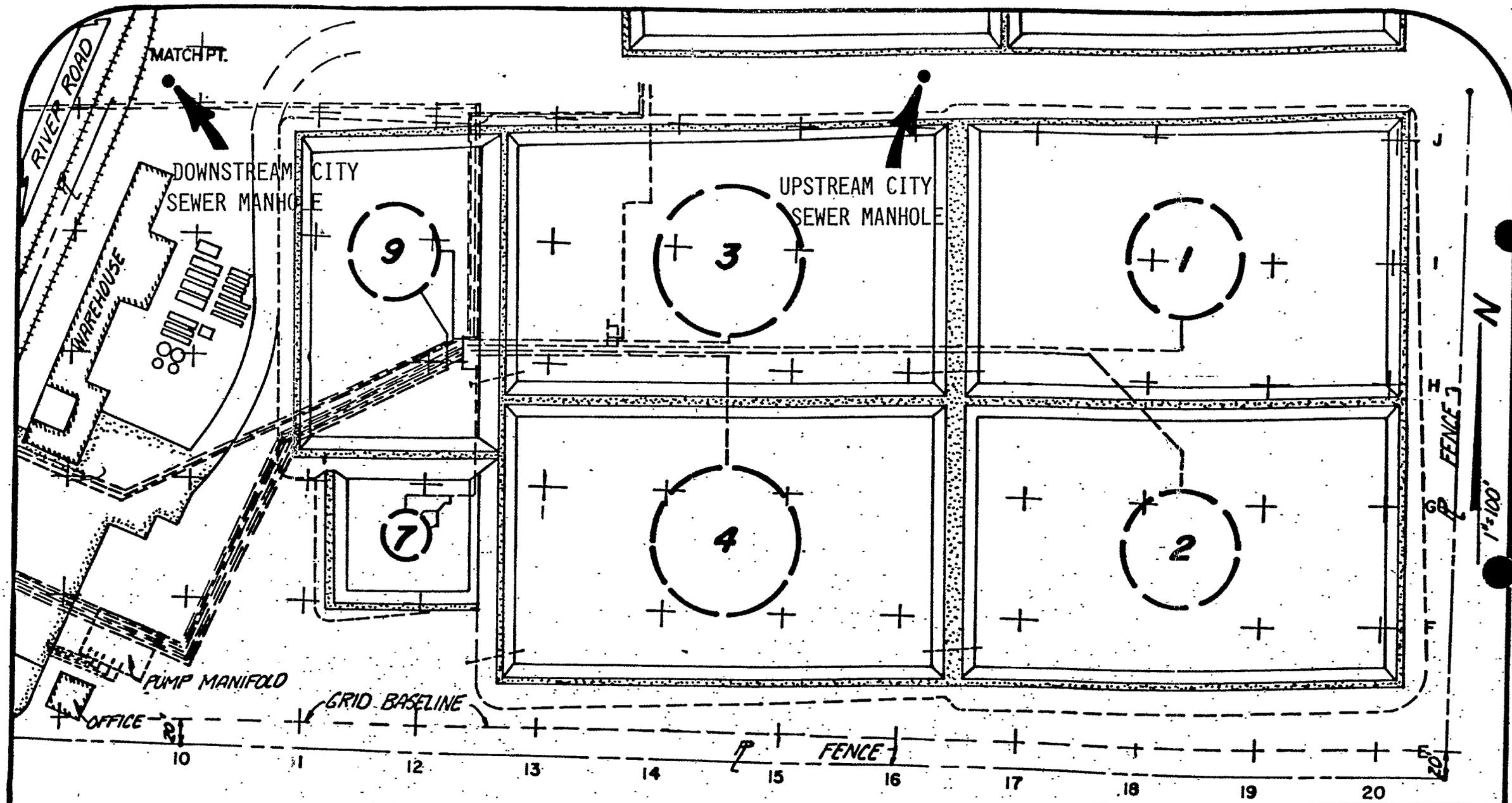
RICHARD CATLIN & ASSOCIATES
POST OFFICE BOX 557
WRIGHTSVILLE BEACH, NORTH CAROLINA
28480

DATE RECEIVED: 7-27-88
DATE COLLECTED: 7-26-88
COLLECTED BY: STEVE TYLER
LAB I.D. # EW 3147

SAMPLE DESCRIPTION: KOCH FUELS

<u>TESTS/SAMPLES</u>	<u>UNITS</u>	<u>UP STREAM SEWER</u>	<u>DOWN STREAM SEWER</u>
BENZENE	PPB	<.2	5.5
TOLUENE	PPB	5.1	4.0
ETHYL BENZENE	PPB	<.2	<.2
XYLENE	PPB	<.2	1140
KEROSENE	PPB	<50	<50
DIESEL FUEL	PPB	<50	<50
PARAXYLENE		<.2	1140

CHEMIST: Dolly Bedwan



SAMPLE LOCATIONS

KOCH FUELS, INC.
 WILMINGTON, N.C.
 RICHARD CATLIN & ASSOCIATES, INC.

KOCH

KOCH REFINING COMPANY

August 15, 1988

N. C. Department of Natural Resources
and Community Development
Division of Environmental Management
ATTN: Mr. Rick Shiver, P. G.
7225 Wrightsville Avenue
Wilmington, N. C. 28403-3696

RECEIVED
SEP 02 1988
Wilmington Regional Office
DEM

Dear Mr. Shiver:

This letter is to advise you of the status of the actions that Koch Refining Company has taken and is in the process of taking to address the ground water contamination problems at both our North and South Terminals, as follows:

- 1) To prevent contamination of the State Ports property on the west side of River Road, we have blocked the storm water culvert under River Road that conveys storm water from the Koch North Terminal to the west side of River Road.
- 2) From the catch basin on the east end of the abovementioned culvert and connected to it, we have constructed a french drain, approximately 200 feet in length, to collect the contaminated ground water (and storm runoff) and convey it to the catch basin. From there, it is pumped to an oil separator located within the diked area around Tank No. 301. The product is recovered and effluent discharged into a lateral line within the diked area.
- 3) To prevent storm water runoff from ponding and overflowing to the west and across River Road, we are in the process of constructing an interim system to increase the storm water pumping capability sufficiently to handle major runoff events. This system will include a storm water sump located near the catch basin mentioned in paragraph 2) above, from which a 300 gallon per minute pump will discharge the storm water runoff into the diked area around Tank No. 3 (see attachments 1 and 2).
- 4) Our engineering consultant, Richard Catlin & Associates, Inc., has been requested to provide us with alternative designs for a site-wide recovery/treatment system for the North Terminal. This system will provide for the collection and treatment of all sources of contamination including recovery well effluent, discharges from the periodic dewatering of all storage tanks and effluent from the loading dock oil separators. The interim system discussed in paragraph 3) above will be incorporated into the site-wide system. We expect the effluent from the site-wide system to be treated sufficiently to allow discharge into the Cape Fear River. Our consultant has advised us that his designs will be completed in the near future and, after approval and selection of the final system by our Engineering Department, we will submit an application for an N. P. D. E. S. discharge permit.

K KOCH

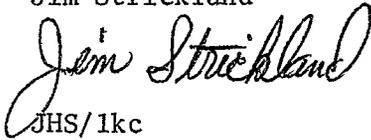
KOCH REFINING COMPANY

Page Two

- 5) To address the City of Wilmington's concerns about possible contaminants entering the Southside Sewage Treatment Plant via the sanitary sewer system near out terminal, we have requested our engineering consultant to monitor the sanitary sewer at our North Terminal for hydrocarbons on a monthly basis. I will be glad to furnish both you and the City of Wilmington a copy of the monthly monitoring reports as they become available.
- 6) (Monitoring at the South Terminal)
Tom Segar will write you a letter concerning the monitoring of the South Terminal.

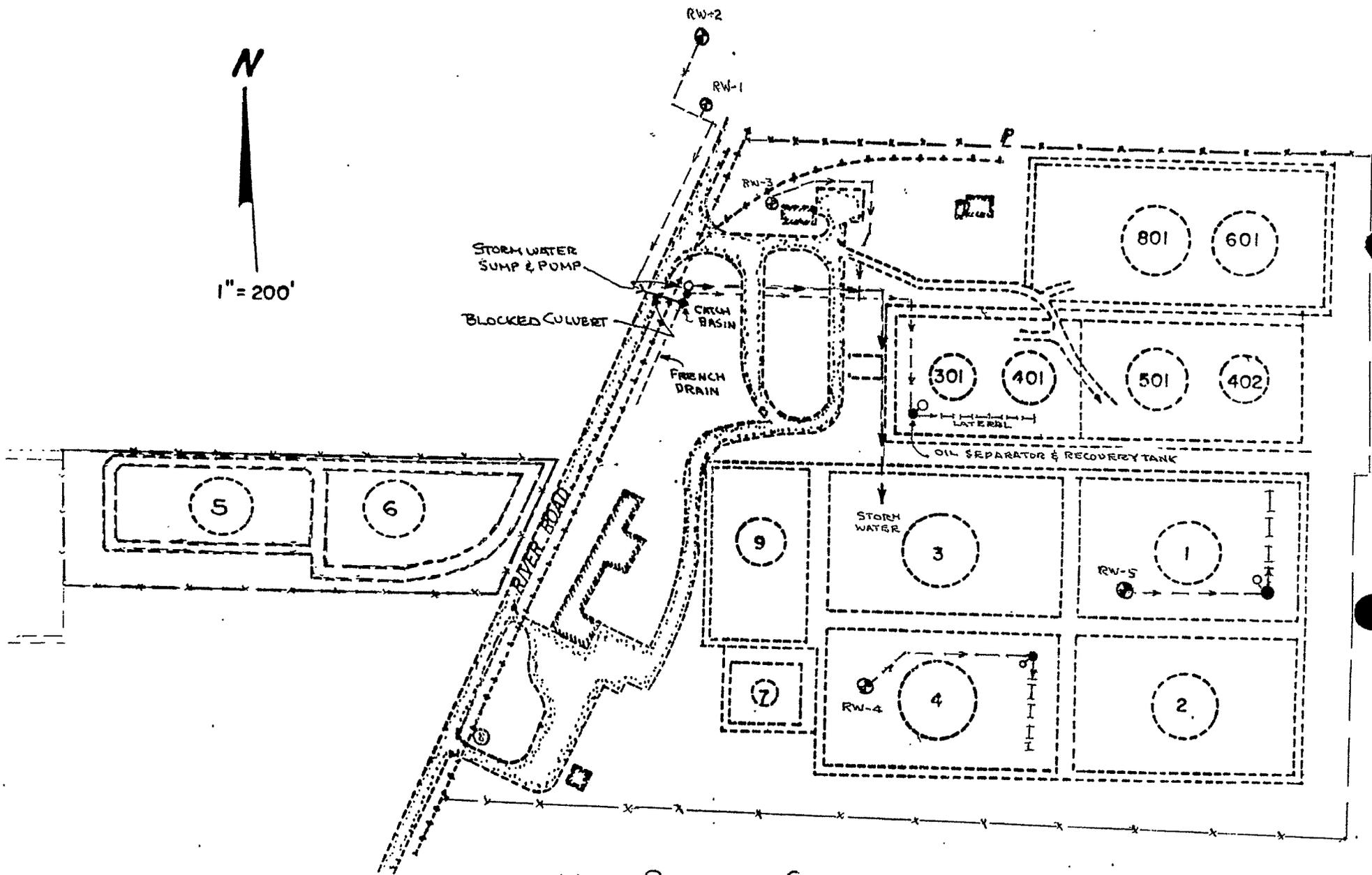
Sincerely yours,

Jim Strickland



JHS/lkc

cc: Bill Ennis
Tom Segar
Neal Smith

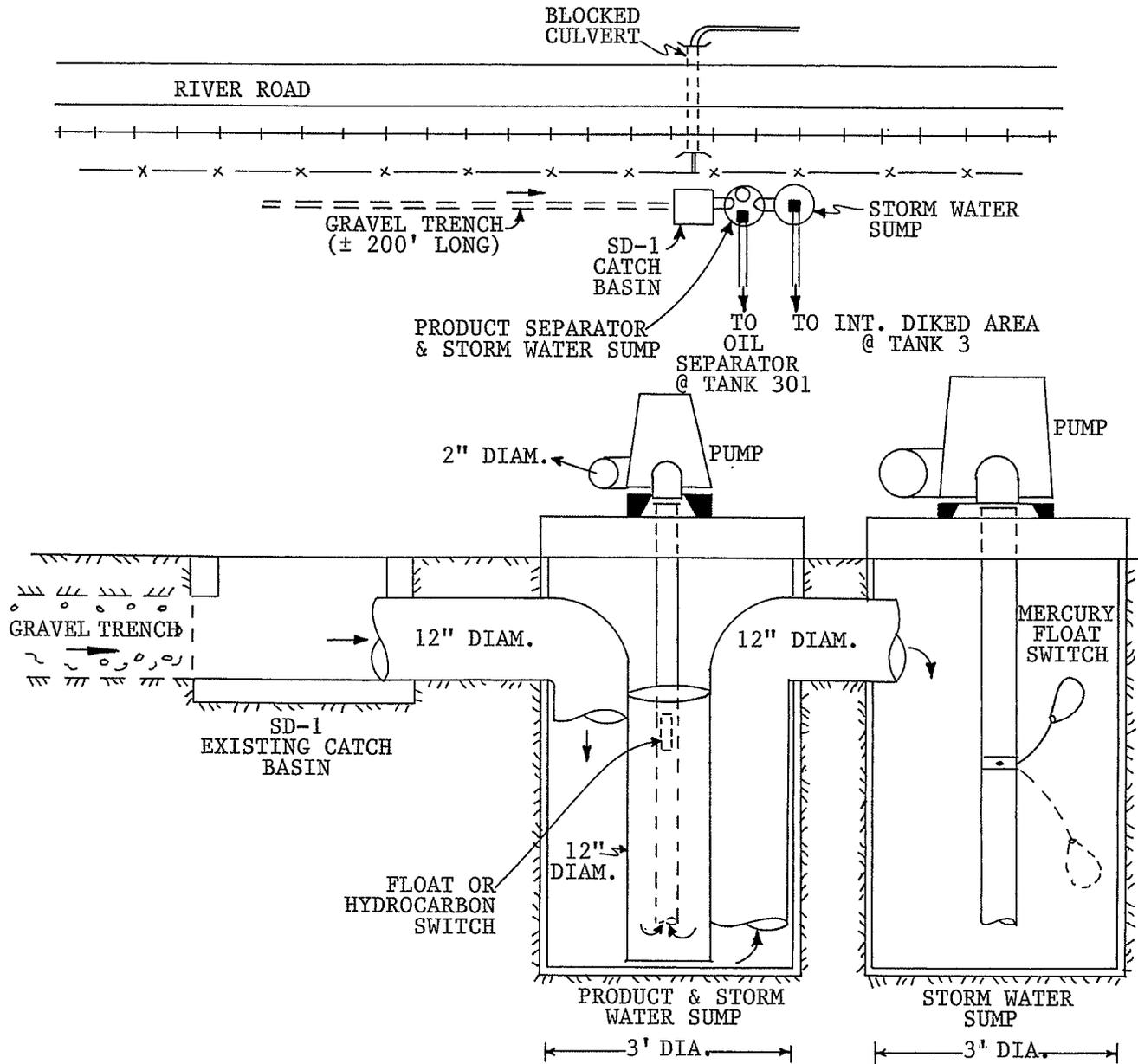


KOCH REFINING COMPANY
 NORTH TERMINAL
 WILMINGTON, N.C.

SCHEMATIC
 FOR
 INTERIM SYSTEM FOR
 PRODUCT RECOVERY
 AND
 STORMWATER DRAINAGE

ATTACHMENT 1

INTERIM STORM DRAIN SYSTEM



KOCH

03-20-87 (1010-1058)

JIM STRICKLAND

DICK CATLIN

DICK SHIVED

SEE 03-20-87 LETTER FROM
CATLIN, AND 03-19-87 LETTER FROM
STRICKLAND.

XC to Douglas Dixon 21 MAY 87

Richard Catlin & Associates, Inc.

CONSULTING ENGINEERS AND HYDROGEOLOGISTS

March 18, 1987

Department of Natural Resources
and Community Development
Division of Environmental Management
ATTN: Mr. Rick Shiver, P.G.
7225 Wrightsville Avenue
Wilmington, N. C. 28403-3696

RC&A
RECEIVED

MAR 20 1987

GROUNDWATER SECTION
WILMINGTON REGIONAL OFFICE

RE: Koch Fuels, Inc.
Ground Water Contamination
Project, RC&A # 8646
Wilmington, N. C.

Dear Mr. Shiver:

This letter is intended as a progress report for remedial activities being implemented at Koch Fuels, Inc., River Road terminal in Wilmington, N. C., and to provide you with a brief summary of our findings to date. In June and July of 1986, a Report of Investigation was prepared for assessing ground water quality at Koch Fuels, Inc. and was submitted to your office. Referring to the specific recommendations outlined in that report, progress is as follows:

- 1) Emergency measures - The plume of paraxylene extending onto State Ports Authority property, in and around the existing recovery wells was designated as our first priority for containment and clean-up. Both existing recovery wells have been equipped as drawdown and recovery points. A substantial cone of depression has apparently now formed and paraxylene recovery is proceeding successfully. Monthly monitoring reports reporting the progress of this activity are being provided to your office.

March 18, 1987

Page Two

In our initial report, we recommended discharging product-free water from the paraxylene recovery effort to a nearby ditch. During actual recovery operations, we have piped that water across the road into the diked area near tank #301, in the same general location that product-free water was pumped to during the Sun Oil paraxylene recovery project. If you have any objections to this procedure, please advise us.

- 2) Ascertain plume extent - The extent of the paraxylene plume on State Ports Authority property is not known at present. The recommendation of the 1986 report was to permit additional monitoring wells for exploration in this area. This recommendation, along with permit applications, have been forwarded to Koch Fuels, Inc., for their consideration. However, construction activities underway at the State Ports Authority south gate would make additional work in this area difficult at present.
- 3) Recovery system for Plume #3 - Work in this area of contamination is underway. A permit for a recovery well has been filed and approved for the fuel oil plume directly across the street from State Ports Authority property. A stainless steel well screen and galvanized riser have been delivered to the site, and drilling of the recovery well should commence during the last week of March, 1987.
- 4) Recovery systems for Plumes #1 and #2 - Due to the variety and extent of ground water contamination at this site, we outlined a step-by-step approach to recovery in the 1986 report, with initial recovery activities concentrated in areas of contamination nearest the downgradient property boundaries. Following the installation of the recovery well for Plume #3, we will prepare an updated assessment report for Plumes #1 and #2, located near tanks #1 and #4, and submit it to your office for review.

March 18, 1987

Page Three

This report, together with proposed recovery well permit applications for Plumes #1 and #2, should be completed around the end of this month. We would then expect to construct the two additional recovery wells during April, 1987.

- 5) Source removal - A further recommendation of the initial report was that line testing and tank inspection be performed to insure leak elimination. Line testing has been completed and tanks #1 and #4 have been inspected and secured against leakage.
- 6) Repair existing monitoring wells - Existing monitoring wells have been brought up to State standards and equipped with well shields.
- 7) Update assessment - A complete site assessment update will not be performed until all recovery systems are operational. However, as outlined above, an updated assessment for Plumes #1 and #2 will be prepared prior to filing for recovery well permits near tanks #1 and #4.
- 8) Monitor recovery operations - The paraxylene recovery operation is being monitored and reported on a monthly basis. As each new recovery system is placed in service, monitoring reports will be prepared and submitted on a monthly basis.

March 18, 1987

Page Four

We are moving along with this project steadily and are receiving complete cooperation and all available assistance from Koch Fuels, Inc. If you find that additional efforts are required or that you need additional information, please advise us of your requirements. Thank you for your cooperation.

Sincerely,



R. Paul Clark, G.I.T.
Project Geologist



Richard G. Catlin, P.E., P.G.
President

cc:
Mr. Jim Strickland

RGC/nd

3264



✓ BTJ

State of North Carolina
Department of Natural Resources and Community Development
Wilmington Regional Office

James G. Martin, Governor

S. Thomas Rhodes, Secretary

January 16, 1987

Mr. Jim Strickland
Koch Fuels, Inc.
Post Office Box 3958
Wilmington, NC 228403

JAN 20 1987
GROUND WATER SECTION
RALEIGH, N. C.

Subject: Well Construction Permit No. 64-0315-WR-0233
Koch Fuels, Inc.
Wilmington
New Hanover County

Dear Mr. Strickland:

In accordance with your application received January 5, 1987 we are forwarding herewith Well Construction Permit No. 64-0315-WR-0233 dated January 13 1987, issued to Koch Fuels, Inc. for the construction of a one (1) recovery well.

If any parts, requirements, or limitations contained in this Permit are unacceptable to you, you have the right to an adjudicatory hearing before a hearing officer upon written demand to the Director within 30 days following receipt of this Permit, identifying the specific issues to be contended. Unless such demand is made, this Permit shall be final and binding.

This Permit will be effective from the date of its issuance and shall be subject to the conditions and limitations as specified therein.

Sincerely,

DICK SHIVER

FOR

Charles Wakild
Regional Supervisor

CW/RS/kd

Enclosure

cc:

Richard Catlin
Perry Nelson
Bob Jamieson
Central Files
Wiro

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF NATURAL RESOURCES AND COMMUNITY DEVELOPMENT
APPLICATION FOR PERMIT TO CONSTRUCT MONITOR/RECOVERY WELL(S)

To: NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION December 17, 1986

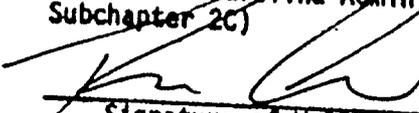
Gentlemen:

In accordance with the provisions of Article 7, Chapter 87, General Statutes of North Carolina, and regulations pursuant thereto, application is hereby made by Koch Fuels, Inc. (name of well owner) for a permit to construct a monitor/recovery well(s) as described below and in the accompanying data submitted as a part of this application.

- (a) Name of property owner: Koch Fuels, Inc.
- (b) Location of property: River Road Wilmington New Hanover
(Road, Industry, Community, etc.) Town County
- (c) Type of facility or site being monitored: Tank Farm
- (d) Types of contamination being monitored or recovered: Fuel Oil/Paraxylene
- (e) Existing monitor well numbers: See Attached
- (f) Existing monitor wells showing contamination (well no.): See Attached
- (g) Estimated water-table depth: 8 feet
- (h) Estimated date of construction: Begin 12/18/86 Complete 2/18/86
- (i) Drilling constructor: Richard Catlin & Associates, Inc.
- (j) Location of well: Provide a detailed map showing the location of the proposed well(s), and of any wells in an existing monitoring system (if applicable), in relation to the pollution source(s) being monitored and to at least two (2) nearby permanent reference points such as roads, intersections, and streams. Identify roads with State Highway road identification numbers. (Show all existing water supply wells within a radius of 1,000 feet of the proposed well.) (See Attached)
- (k) Well construction diagram: Provide a diagram showing proposed construction specifications, including diameter, estimated depth, screens, sand pack, grout, type of materials, etc. (See Attached)

The Applicant hereby agrees the proposed well will be constructed in accordance with approved specifications and conditions of the Well Construction Permit. As regulated under the Well Construction Standards (Title 15 - North Carolina Administrative Code, Subchapter 2C)

P. O. Box 3958
Wilmington, N. C. 28406
(Mailing Address of Well Owner-Required)
Richard Catlin & Assoc., P.O. Box 557
Wrightsville Beach, N. C. 28480
(Mailing Address of Agent-if other than above)


Signature of Well Owner or Agent

Richard G. Catlin, P.E., P.G., President
Richard Catlin & Associates, Inc.
Title (if applicable)

FOR OFFICE USE ONLY

PERMIT NO. _____ issued _____ 19__

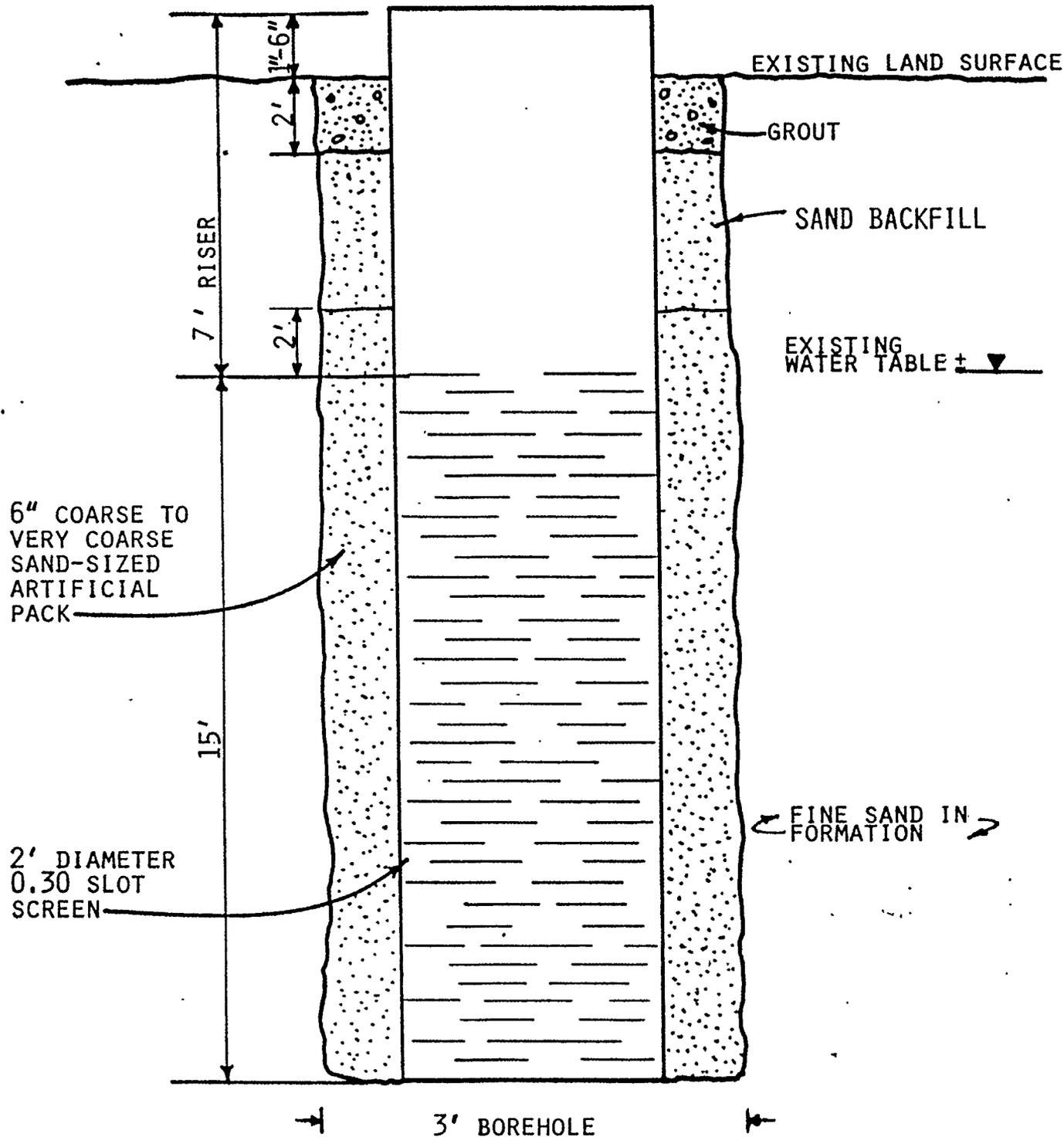
RECEIVED

JAN 5 1987

GROUNDWATER SECTION
WILMINGTON REGIONAL OFFICE

KOCH FUELS, INC.
PROPOSED RECOVERY WELL

WELL # _____
SERIAL # _____
LAT/LONG 341120 775656
Aquifer Code SS.

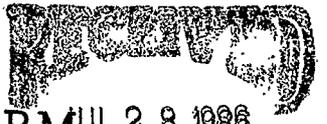


Richard Catlin & Associates, Inc.

CONSULTING ENGINEERS
AND HYDROGEOLOGISTS

RC&A

POLLUTION INCIDENT REPORTING FORM



MUL 2 8 1986
GROUND WATER SECTION
RALEIGH, N. C.
Division of Environmental Management
GROUNDWATER SECTION

1. Incident # <u>3264</u>
2. Tabulate only _____

TYPE OF ACTION

A	1. Emergency response	③. Complaint investigation	5. Re-evaluation : # _____
	2. Compliance investigation	4. Routine inventory	6. Other : _____
POTENTIAL HAZARDS : ①. Toxic chemicals 2. Radioactivity 3. Air emissions 4. Explosives 5. Fire			

INCIDENT

B	Incident Name <u>Koch Fuels, Inc.</u>		
	Address <u>River Road</u>		City/Town <u>Wilmington</u>
	County <u>New Hanover</u>	Region <u>WIRO</u>	DEM Regional Contact <u>Rick Shiver</u>

PERSON REPORTING INCIDENT

C	Name <u>Robert E. Hoyle, Vice President</u>	Date <u>03-29-86</u>	Time _____
	Company/Agency <u>Koch Fuels, Inc.</u>		Telephone <u>(316) 832-5632</u>
	Briefly Describe Incident <u>On 04-03-86, Rick Shiver, Regional Hydrogeologist with DEM in Wilmington, received a written correspondence from Mr Hoyle, of Koch Fuels, Inc, notifying the State that gasoline had been found on the water table under the subject facility.</u>		
	REPORTED BY: ① Responsible party 2. Government agency 3. Private party		

RECOMMENDED ACTION

D	1. Investigation complete ③. Initiate/complete cleanup 5. Technical support ⑦. Enforcement action
	②. Continue investigation ④. Long-term remedial action 6. Drill crew ⑧. Monitoring plan
	Comments <u>Koch Fuels, Inc intends to identify the source of the leakage, identify the extent of the plumes and contain and remove the contaminants.</u>
	LAB SAMPLES: 1. Yes ② No
Signature <u>Rosemarie U. Sidarovich</u>	
Date <u>07-21-86</u>	

Incident # _____
 County: New Hanover

POLLUTION INCIDENT REPORTING FORM

POLLUTANTS INVOLVED

	<u>MATERIALS INVOLVED</u>	<u>AMOUNT STORED</u>	<u>AMOUNT LOST</u>	<u>AMOUNT RECOVERED</u>
E	#2 Fuel oil	2,688,000 gal.	unknown	0 gal. at present
	_____	_____	_____	_____
	_____	_____	_____	_____

IMPACT ON SURFACE WATERS

F	WATERS EFFECTED 1. Yes 2. No No <input checked="" type="radio"/> Potentially	Distance to Stream (ft)	Amount in Water (gal)
	FISH KILL: 1. Yes <input checked="" type="radio"/> No	Name of Stream	Stream Class
		~ 1750 ft.	0
		CAPE FEAR RIVER	5C

RISK ASSESSMENT

Use these Codes: High = 3 Moderate = 2 Low = 1 None = 0				
G	Resource Threat	GROUNDWATER	Amount Infiltrating Land	
	Vertical Migration of Contaminant	<u>3</u>		
	Horizontal Migration of Contaminant	<u>2</u>		
	Areal Extent of Contamination	<u>2</u>	SURFACE WATER	AIR
	Probability of Violations	<u>3</u>	<u>2</u>	<u>1</u>
	Remedial Action Priority	<u>2</u>	<u>0</u>	<u>0</u>
	Potential Hazard of Substance	<u>3</u>	<u>3</u>	<u>1</u>
	Threat to Drinking Water	<u>1</u>	<u>1</u>	<u>0</u>
	Seriousness of Threat	<u>2</u>	<u>1</u>	<u>1</u>
	Overall Regional Concern	<u>2</u>	<u>1</u>	<u>0</u>
Please Circle the Appropriate Response(s):				
1. This incident poses additional threat to human health by: <input checked="" type="radio"/> inhalation <input type="radio"/> absorption <input checked="" type="radio"/> ingestion				
2. This incident poses additional threat to the environment by potential adverse effects on:				
(1) sensitive areas (2) wildlife <input checked="" type="radio"/> fish				

POTENTIAL SOURCE OF POLLUTION

	SOURCE OF POTENTIAL POLLUTION	TYPE OF POLLUTANT	LOCATION	SETTING
H	1. Intentional dump	1. Pesticide/herbicide	<input checked="" type="radio"/> Facility	1. Residential
	2. Pit, pond, lagoon	2. Radioactive waste	2. Railroad	<input checked="" type="radio"/> Industrial
	3. Leak--underground	<input checked="" type="radio"/> Gasoline/diesel	3. Waterway	3. Urban
	4. Spray irrigation	4. Other petroleum prod.	4. Pipeline	4. Rural
	5. Land application	5. Sewage/septage	5. Dumpsite	
	6. Animal feedlot	6. Fertilizers	6. Highway	
	<input checked="" type="radio"/> Source unknown	7. Sludge	7. Residence	
	8. Septic tank	8. Solid waste leachate	8. Other	
		9. Metals		
		10. Other inorganics		
		11. Other organics		
MULTIPLE SOURCES AT SITE: <input checked="" type="radio"/> Yes 2. No		POLLUTION CONFIRMED <input checked="" type="radio"/> Yes 2. No		

POLLUTION INCIDENT REPORTING FORM

Incident # _____
County <u>New Hanover</u>

LOCATION OF INCIDENT

Street Address, Road <u>River Road</u>		City/Town <u>Wilmington</u>	County <u>New Hanover</u>
Date Incident Occurred <u>unknown</u>	Time Incident Occurred <u>unknown</u>	7 1/2 Quad Name <u>Wilmington</u>	Lat. : Deg: Min: Sec: <u>34 11 22</u>
			Long. : Deg: Min: Sec: <u>77 56 56</u>

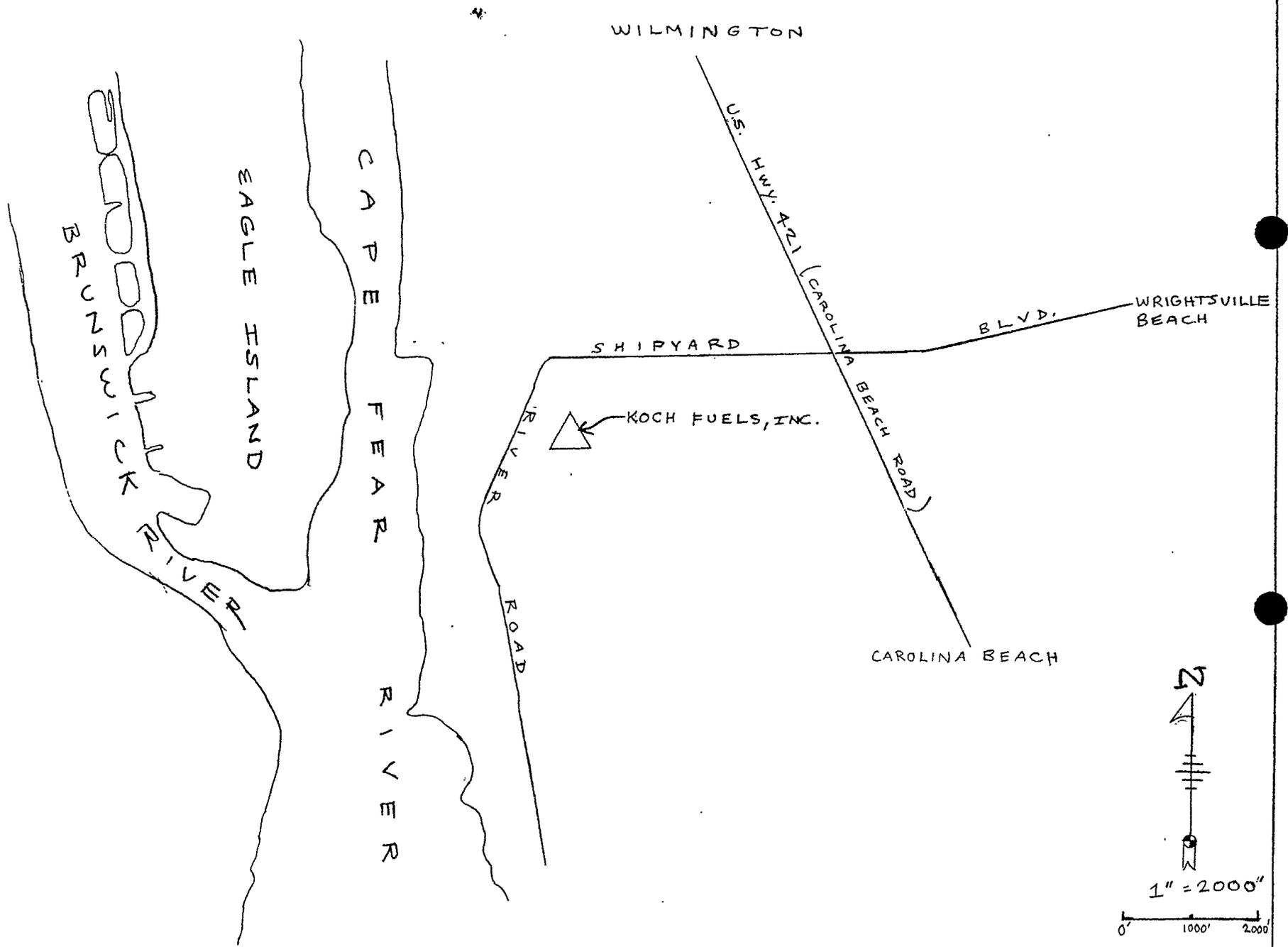
Draw Sketch of Area

See Attached Maps

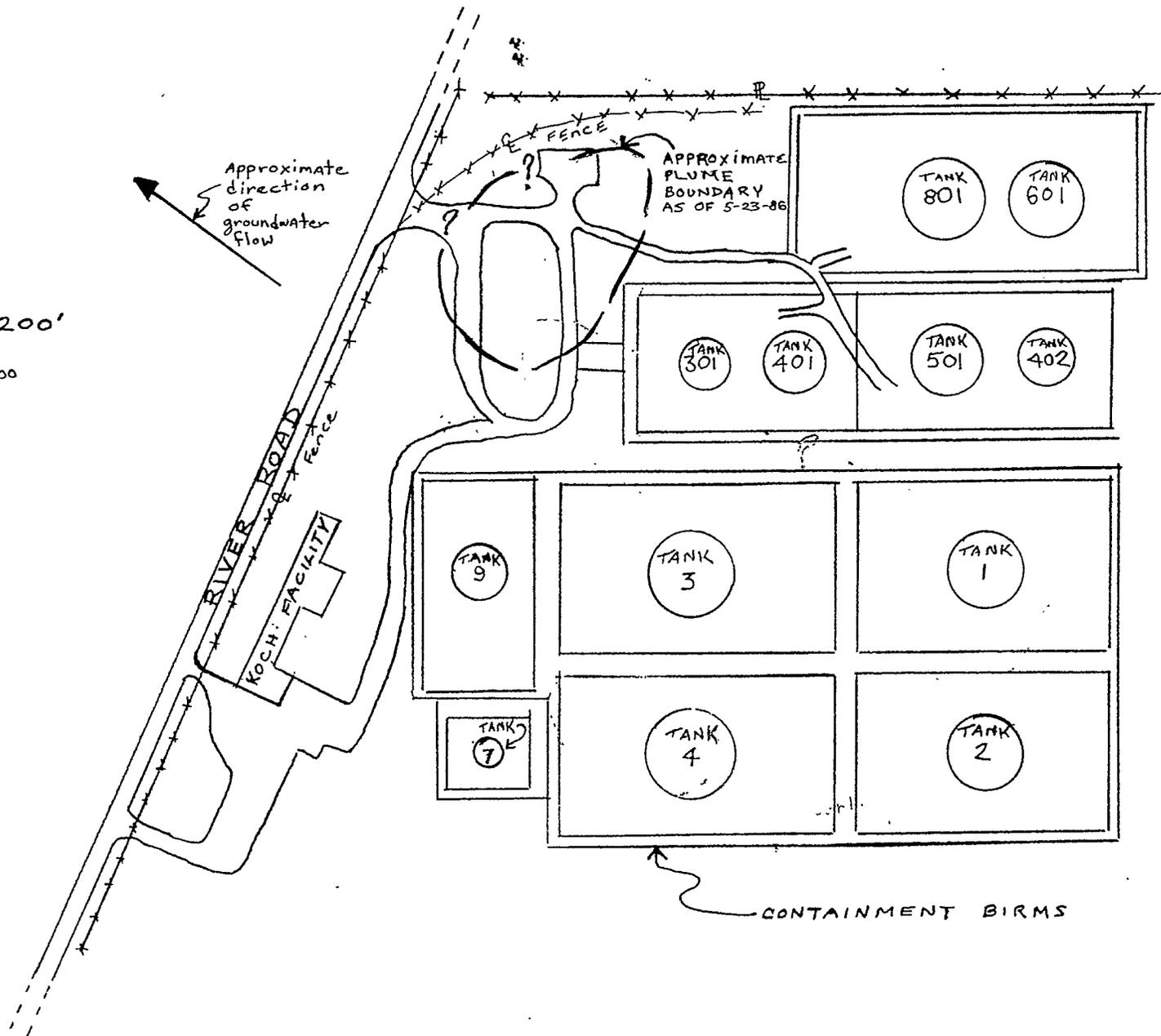
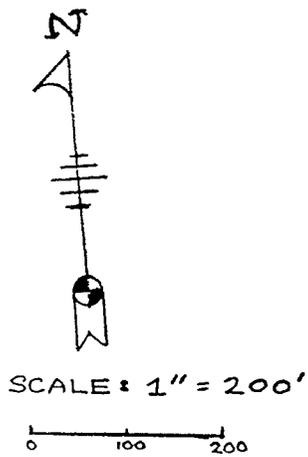
* Area is served by city water supplies.

ATTACH PHOTOCOPY OF MAP SHOWING: 1. Pollutant Source 2. Threatened Water Supplies
3. Direction of Overland Flow

Area Map - KOCH FUELS, INC.
Wilmington, North Carolina - NEW HANOVER COUNTY



Location Diagram of KOCH FUELS, INC.
WILMINGTON, North Carolina - NEW HANOVER COUNTY



NOTE: ALL TANKS SHOWN ARE FOR OVERGROUND STORAGE.

WILMINGTON QUAD
DD-31, S-
LAT/LONG
341122/775656

POLLUTION INCIDENT REPORTING FORM

Incident # _____
 County: _____

SOIL TYPES

COASTAL PLAIN REGION	PIEDMONT SOIL REGION	LANDFORM
1. Middle Coastal Plain	10. Felsic Crystalline	1. River/coastal terrace
2. Upper Coastal Plain/Piedmont	11. Carolina Slate Belt	② Coastal (flat) plain
3. Sandhills	12. Triassic Basin	3. Mountain range
④ Lower Coastal/Wicomico, Talbot	13. Mixed Felsic and Mafic	4. Sandhills
5. Lower Coastal Plain/Pamlico		5. Swamp
6. Organic Soil		6. Linear (valley) slope
7. Brackish and Freshwater Marsh		7. Head slope (concave)
8. Outer Banks		8. Nose slope (convex)
9. Large River Valleys/Flood Plain		9. Foot slope

OBSERVED AVERAGE GRADIENTS	ESTIMATED DEPTHS
To nearest water supply: _____ %	To uppermost confining bed: ²⁶ _____ ft.
Water table gradient: <u>1.4</u> %	To water table: <u>4-12</u> ft.
To nearest stream: <u><1</u> %	To bedrock: 2-10 ^{~40} ft.
Stream gradient: _____ %	

ESTIMATE HYDRAULIC CONDUCTIVITIES				AQUIFER USE
Soil	Unsaturated zone	Water Table	Upper confined aquifer	
1. high	1. high	1. high	1. high	① Little or no use ② Moderate uses ③ Heavily used
② medium	② medium	② medium	② medium	
3. low	3. low	3. low	3. low	
4. unknown	4. unknown	4. unknown	4. unknown	

DISTANCE TO NEAREST WATER SUPPLY: _____ ft. DISTANCE TO NEAREST BUILDING: ~300 ft.

Describe general lithology of soil and unsaturated zone
Soil in the unsaturated zone is composed of
fine to medium-grained sands.

Provide map showing: 1. Pollutant source 2. Threatened water supplies 3. Direction of overland flow

Incident # _____
County: New Hanover

POLLUTION INCIDENT REPORTING FORM

EMERGENCY INCIDENT RESPONSIBILITIES

RESPONSIBILITY: _____ Local _____ State _____ Federal X Responsible party

ON-SCENE COORDINATOR: _____ name _____ phone number _____
_____ agency/EOC location _____ EOC phone _____
EOC contacts _____
Assumed, date: _____ time: _____ Relinquished, date: _____ time: _____
On-site representatives: _____

TECHNICAL COORDINATOR: Rick Shiver name _____ (919) 256-4161 phone number _____
DNRC - DEM - GWS agency/EOC location _____ Wilmington _____ EOC phone _____
EOC contacts _____
Assumed, date: _____ time: _____ Relinquished, date: _____ time: _____
On-site representatives: _____

RESOURCE TRUSTEE: _____ name _____ phone number _____
_____ agency/EOC location _____ EOC phone _____
EOC contacts _____
Assumed, date: _____ time: _____ Relinquished, date: _____ time: _____
On-site representatives: _____

PIO: _____ name _____ agency _____ phone number _____
Assumed, date: _____ time: _____ Relinquished, date: _____ time: _____

NOTIFICATIONS

* 24 Hour Telephone Number

Date	Agency	Telephone	Time	Contact
_____	Spill Response Center-DEM	(919) 733-5291	_____	_____
_____	Water Supply-DHR	(919) 733-2321	_____	_____
_____	Solid/Hazardous Waste-DHR	(919) 733-2178	_____	_____
<u>04-03-86</u>	Regional Office <u>WIRO</u>	<u>919/256-4161</u>	<u>-</u>	<u>Rick Shiver</u>
_____	Emergency Mngt.-CC&PS	(919) 733-3867	_____	_____
_____	Pesticides-DOA	(919) 733-3556	_____	_____
_____	Inland Fisheries-WRC	(919) 733-3633	_____	_____
_____	Wildlife Resources Commission	(800) 662-7137 *	_____	_____
_____	Marine Fisheries	(919) 726-7021	_____	_____
_____	Radiation Protection-DHR	(919) 733-4283	_____	_____
_____	EPA-Atlanta	(404) 881-4062 *	_____	_____
_____	Coast Guard-Wilmington	(919) 343-4567	_____	_____
_____	Coast Guard-Hampton Roads	(804) 441-3307	_____	_____
_____	National Response Center	(800) 424-8802 *	_____	_____
<u> </u>	(your supervisor) <u>SAME AS ABOVE</u>			
_____	(PIO) _____	_____	_____	_____
_____	(shipper) _____	_____	_____	_____
_____	(carrier) _____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	CHEMTREC (Chemical Spills Only)	(800) 424-9300 *	_____	_____
_____	N.C. Poison Center	(919) 684-8111 *	_____	_____
_____	Explosives problems-SBI	(919) 779-1400 *	_____	_____
_____	State Warning Point-SHP (emergencies only)	(919) 733-3861 * (800) 662-7956 *	_____	_____
_____	EPA-PCB problems	(919) 541-4573	_____	_____

POLLUTION INCIDENT REPORTING FORM

1. Incident # 205
 2. Tabulate only

Division of Environmental Management
 GROUNDWATER SECTION.

TYPE OF ACTION

A	1. Emergency response	③ Complaint investigation	5. Re-evaluation : # <u> </u>
	2. Compliance investigation	4. Routine inventory	6. Other : <u> </u>
POTENTIAL HAZARDS : ① Toxic chemicals 2. Radioactivity 3. Air emissions 4. Explosives 5. Fire			

INCIDENT

B	Incident Name <u>Koch Fuels, Inc.</u>		
	Address <u>River Road</u>		City/Town <u>Wilmington</u>
	County <u>New Hanover</u>	Region <u>WiRO</u>	DEM Regional Contact <u>Rick Shiver</u>

PERSON REPORTING INCIDENT

C	Name <u>Robert E. Hoyle, Vice President</u>	Date <u>03-29-86</u>	Time <u>—</u>
	Company/Agency <u>Koch Fuels, Inc.</u>		Telephone <u>(316) 832-5632</u>
	Briefly Describe Incident <u>On 04-03-86, Rick Shiver, Regional Hydrogeologist with DEM</u>		
	<u>in Wilmington, received a written correspondence from Mr Hoyle, of Koch Fuels, Inc, notifying the State that gasoline had been found on the water table under the subject facility.</u>		
REPORTED BY: ① Responsible party 2. Government agency 3. Private party			

RECOMMENDED ACTION

D	1. Investigation complete ③ Initiate/complete cleanup 5. Technical support ⑦ Enforcement action		
	② Continue investigation ④ Long-term remedial action 6. Drill crew ⑧ Monitoring plan		
	Comments <u>Koch Fuels, Inc intends to identify the source of the leakage, identify the extent of the plumes and contain and remove the contaminants.</u>		
	LAB SAMPLES: 1. Yes ② No	Signature <u>Rosemarie H. [unclear]</u>	Date <u>07-21-86</u>

Incident # _____
 County: New Hanover

POLLUTION INCIDENT REPORTING FORM

POLLUTANTS INVOLVED

	<u>MATERIALS INVOLVED</u>	<u>AMOUNT STORED</u>	<u>AMOUNT LOST</u>	<u>AMOUNT RECOVERED</u>
E	<u>Paraxylene</u>	<u>10,248,000 gal</u>	<u>unknown</u>	<u>as of 7-22-86 approx. 100 gal</u>
	_____	_____	_____	_____
	_____	_____	_____	_____

IMPACT ON SURFACE WATERS

F	WATERS EFFECTED	1. Yes	2. No	No <input checked="" type="radio"/> Potentially	Distance to Stream (ft)	Amount in Water (gal)
	FISH KILL:	1. Yes	<input checked="" type="radio"/> 2. No	Name of Stream	<u>N 1450 ft</u>	<u>0</u>
				<u>CAPE FEAR RIVER</u>		Stream Class <u>5C</u>

RISK ASSESSMENT

Use these Codes: High = 3 Moderate = 2 Low = 1 None = 0

Resource Threat	GROUNDWATER		Amount Infiltrating Land	
	Vertical Migration of Contaminant	<u>3</u>		
Horizontal Migration of Contaminant	<u>3</u>			
Areal Extent of Contamination	<u>2</u>		SURFACE WATER	
Probability of Violations	<u>3</u>		<u>2</u>	<u>1</u>
Remedial Action Priority	<u>2</u>		<u>0</u>	<u>0</u>
Potential Hazard of Substance	<u>3</u>		<u>3</u>	<u>1</u>
Threat to Drinking Water	<u>1</u>		<u>1</u>	<u>0</u>
Seriousness of Threat	<u>2</u>		<u>1</u>	<u>1</u>
Overall Regional Concern	<u>2</u>		<u>1</u>	<u>0</u>

Please Circle the Appropriate Response(s):

1. This incident poses additional threat to human health by: (1) inhalation (2) absorption (3) ingestion

2. This incident poses additional threat to the environment by potential adverse effects on:

(1) sensitive areas (2) wildlife (3) fish

POTENTIAL SOURCE OF POLLUTION

SOURCE OF POTENTIAL POLLUTION	TYPE OF POLLUTANT	LOCATION	SETTING
		1. Intentional dump 2. Pit, pond, lagoon 3. Leak--underground 4. Spray irrigation 5. Land application 6. Animal feedlot <input checked="" type="radio"/> 7. Source unknown 8. Septic tank	1. Pesticide/herbicide 2. Radioactive waste 3. Gasoline/diesel <input checked="" type="radio"/> 4. Other petroleum prod. 5. Sewage/septage 6. Fertilizers 7. Sludge 8. Solid waste leachate 9. Metals 10. Other inorganics 11. Other organics
MULTIPLE SOURCES AT SITE: <input checked="" type="radio"/> 1. Yes 2. No		POLLUTION CONFIRMED <input checked="" type="radio"/> 1. Yes 2. No	

Incident # _____
 County: New Hanover

POLLUTION INCIDENT REPORT FORM

RESPONSIBLE PARTY

Responsible Party/Names <u>Jim Strickland, Terminal Manager</u>		Telephone <u>919/799-0180-0182</u>		
Company <u>Koch Fuels, Inc</u>		Street Address <u>POB 3958</u>		
City <u>Wilmington</u>		County <u>New Hanover</u>	State <u>NC</u>	Zip Code <u>28406</u>
REASON FOR INCIDENT	SOURCE IN USE	PERMIT TYPE	OWNERSHIP	OPERATION TYPE
1. Transportation Accident	0. N/A 1. Yes 2. No	0. N/A	0. N/A	0. N/A
2. Mechanical failure	SOURCE PERMITTED 1. Yes 2. No	1. Nondischarge	1. Municipal	1. Public Service
3. Facility design		2. Oil terminal	2. Military	2. Agricultural
4. Inventory only	PERMIT NUMBER	3. Landfill	3. Unknown	3. Other Source
5. Human error	SOURCE ON ERRIS LIST 1. Yes 2. No	4. Mining	4. Private	4. Educational
6. Vandalism		5. NPDES	5. Federal	5. Industrial
7. Unknown	ERRIS NUMBER	6. RCRA	6. County	6. Commercial
		7. Air	7. State	7. Mining

ACTIONS TAKEN

Containment, Cleanup, etc.

As of 07-21-86, Richard Catlin and Associates, Inc
has had 24 monitoring wells installed at the facility
and has utilized data from monitoring wells that remained
at site from a 1981 paraxylene spill recovery project.
Once an inventory loss is apparent, DEM instructed
Koch Fuels, Inc. to 1) Cease product input or output;
2) Regauge tanks; and 3) Check truck loadings.
As per NOV issued by DEM on 05-01-86, Koch Fuels,
Inc. was instructed to stop, define, contain, and
remove any leakage of oil from its bulk storage
systems.
A recovery well from the previous paraxylene spill
was reactivated.

Nearest Populated Buildings--Type and Distance
Buildings owned by Koch Fuels, Inc.; ~ 300 Feet.

Precipitation/Weather Data

POLLUTION INCIDENT REPORTING FORM

Incident # _____
County <u>New Hanover</u>

LOCATION OF INCIDENT

Street Address, Road <u>River Road</u>		City/Town <u>Wilmington</u>	County <u>New Hanover</u>
Date Incident Occurred <u>unknown</u>	Time Incident Occurred <u>unknown</u>	7 1/2 Quad Name <u>Wilmington</u>	Lat. : Deg: Min: Sec: <u>34 11 20</u>
			Long. : Deg: Min: Sec: <u>77 56 56</u>

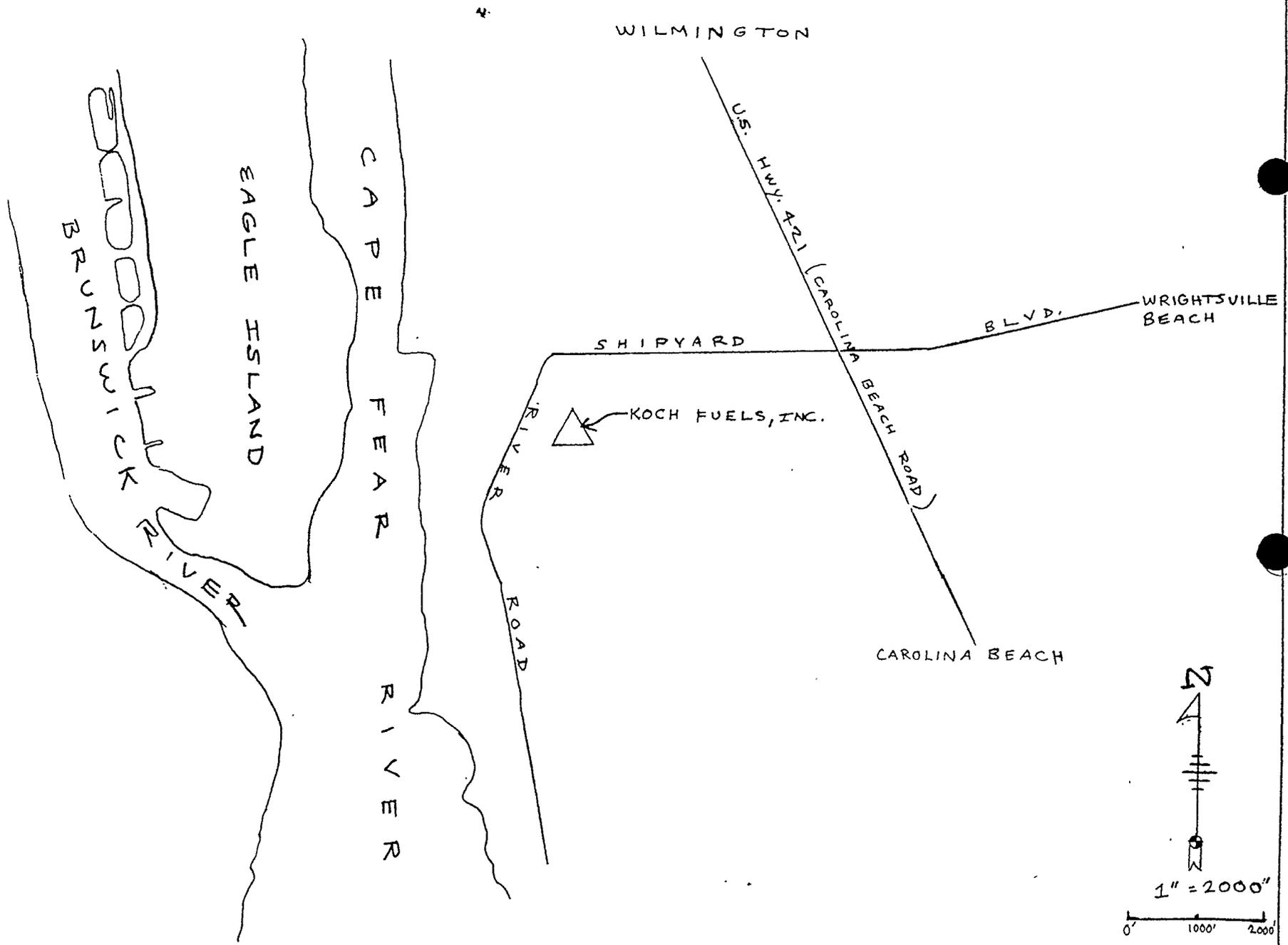
Draw Sketch of Area

See Attached Maps

*Area is served by city water supplies.

ATTACH PHOTOCOPY OF MAP SHOWING: 1. Pollutant Source 2. Threatened Water Supplies
3. Direction of Overland Flow

Area Map - KOCH FUELS, INC.
Wilmington, North Carolina - NEW HANOVER COUNTY

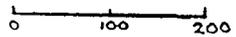


Location Diagram of KOCH FUELS, INC.

WILMINGTON, North Carolina - NEW HANOVER COUNTY

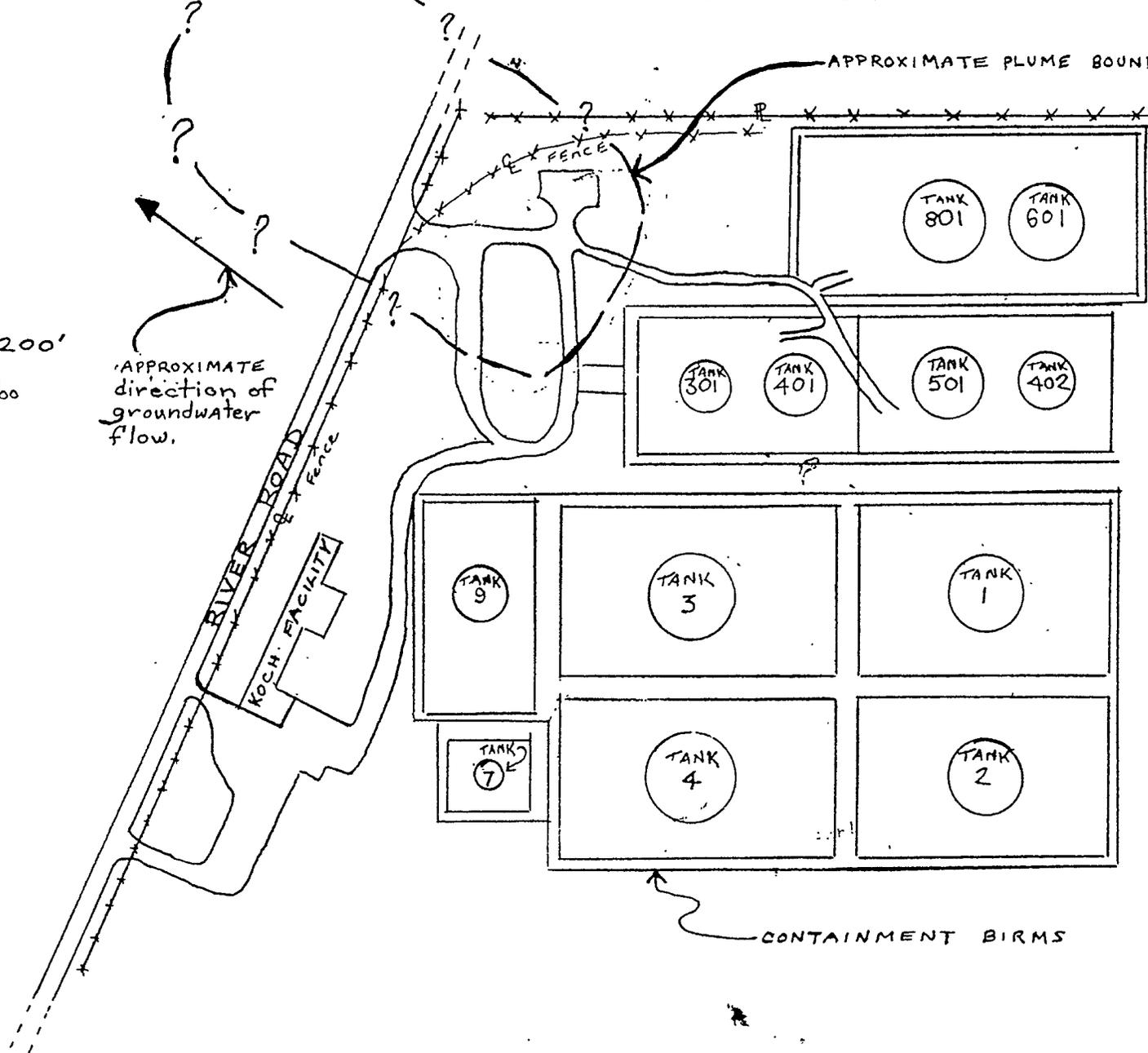


SCALE: 1" = 200'



APPROXIMATE direction of groundwater flow.

APPROXIMATE PLUME BOUNDARY AS OF 5-23-86



CONTAINMENT BIRMS

NOTE: ALL TANKS SHOWN ARE FOR OVERGROUND STORAGE.

WILMINGTON QUAD
DD-31, S-
LAT/LONG
34 11 20 / 77 56 56

Incident # _____
County: New Hanover

POLLUTION INCIDENT REPORTING FORM

EMERGENCY INCIDENT RESPONSIBILITIES

RESPONSIBILITY: _____ Local _____ State _____ Federal Responsible party

ON-SCENE COORDINATOR: _____
name _____ phone number _____
agency/EOC location _____ EOC phone _____
EOC contacts _____
Assumed, date: _____ time: _____ Relinquished, date: _____ time: _____
On-site representatives: _____

TECHNICAL COORDINATOR: Rick Shiver _____ (919) 256-4161
name _____ phone number _____
DNRCD - DEM - GWS _____ Wilmington _____
agency/EOC location _____ EOC phone _____
EOC contacts _____
Assumed, date: _____ time: _____ Relinquished, date: _____ time: _____
On-site representatives: _____

RESOURCE TRUSTEE: _____
name _____ phone number _____
agency/EOC location _____ EOC phone _____
EOC contacts _____
Assumed, date: _____ time: _____ Relinquished, date: _____ time: _____
On-site representatives: _____

PIO: _____
name _____ agency _____ phone number _____
Assumed, date: _____ time: _____ Relinquished, date: _____ time: _____

NOTIFICATIONS

* 24 Hour Telephone Number

Date	Agency	Telephone	Time	Contact
_____	Spill Response Center-DEM	(919) 733-5291	_____	_____
_____	Water Supply-DHR	(919) 733-2321	_____	_____
_____	Solid/Hazardous Waste-DHR	(919) 733-2178	_____	_____
<u>04-03-86</u>	Regional Office <u>WIRO</u>	<u>919/256-4161</u>	<u>-</u>	<u>Rick Shiver</u>
_____	Emergency Mngt.-CC&PS	(919) 733-3867	_____	_____
_____	Pesticides-DOA	(919) 733-3556	_____	_____
_____	Inland Fisheries-WRC	(919) 733-3633	_____	_____
_____	Wildlife Resources Commission	(800) 662-7137 *	_____	_____
_____	Marine Fisheries	(919) 726-7021	_____	_____
_____	Radiation Protection-DHR	(919) 733-4283	_____	_____
_____	EPA-Atlanta	(404) 881-4062 *	_____	_____
_____	Coast Guard-Wilmington	(919) 343-4567	_____	_____
_____	Coast Guard-Hampton Roads	(804) 441-3307	_____	_____
_____	National Response Center	(800) 424-8802 *	_____	_____
<u> </u>	(your supervisor) <u>SAME AS ABOVE</u>	_____	_____	_____
_____	(PIO) _____	_____	_____	_____
_____	(shipper) _____	_____	_____	_____
_____	(carrier) _____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	CHEMTREC (Chemical Spills Only)	(800) 424-9300 *	_____	_____
_____	N.C. Poison Center	(919) 684-8111 *	_____	_____
_____	Explosives problems-SBI	(919) 779-1400 *	_____	_____
_____	State Warning Point-SHP (emergencies only)	(919) 733-3861 * (800) 662-7956 *	_____	_____
_____	EPA-PCB problems	(919) 541-4573	_____	_____

POLLUTION INCIDENT REPORTING FORM

Incident # _____
 County: _____

SOIL TYPES

<p>COASTAL PLAIN REGION</p> <ol style="list-style-type: none"> 1. Middle Coastal Plain 2. Upper Coastal Plain/Piedmont 3. Sandhills ④ Lower Coastal/Wicomico, Talbot 5. Lower Coastal Plain/Pamlico 6. Organic Soil 7. Brackish and Freshwater Marsh 8. Outer Banks 9. Large River Valleys/Flood Plain 	<p>PIEDMONT SOIL REGION</p> <ol style="list-style-type: none"> 10. Felsic Crystalline 11. Carolina Slate Belt 12. Triassic Basin 13. Mixed Felsic and Mafic <p>MOUNTAIN SOIL REGION</p> <ol style="list-style-type: none"> 14. Low and Intermediate Mountain 15. Basins/Terraces/Flood Plain 16. High Mountain 	<p>LANDFORM</p> <ol style="list-style-type: none"> 1. River/coastal terrace ② Coastal (flat) plain 3. Mountain range 4. Sandhills 5. Swamp 6. Linear (valley) slope 7. Head slope (concave) 8. Nose slope (convex) 9. Foot slope 10. Barrier island 11. Barrier system 12. Beach ridge 13. Tidal marsh 14. Floodplain 15. Upland: 0-5% slope (Interstream divide)
<p>OBSERVED AVERAGE GRADIENTS</p> <p>To nearest water supply: _____ %</p> <p>Water table gradient: <u>1.4</u> %</p> <p>To nearest stream: <u><1</u> %</p> <p>Stream gradient: _____ %</p>	<p>ESTIMATED DEPTHS</p> <p>To uppermost confining bed: <u>26</u> ft.</p> <p>To water table: <u>4-12</u> ft.</p> <p>To bedrock: <u>~40</u> ft.</p>	

ESTIMATE HYDRAULIC CONDUCTIVITIES				<p>AQUIFER USE</p> <ol style="list-style-type: none"> ① Little or no use ② Moderate uses ③ Heavily used
Soil	Unsaturated zone	Water Table	Upper confined aquifer	
1. high	1. high	1. high	1. high	
② medium	② medium	② medium	② medium	
3. low	3. low	3. low	3. low	
4. unknown	4. unknown	4. unknown	4. unknown	

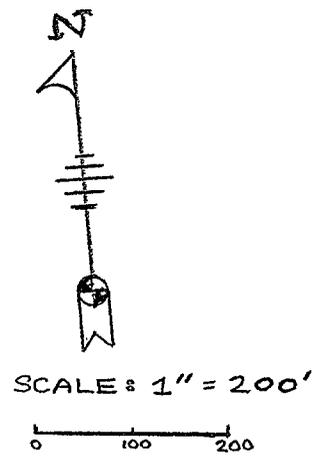
DISTANCE TO NEAREST WATER SUPPLY: _____ ft. DISTANCE TO NEAREST BUILDING: ~300 ft.

Describe general lithology of soil and unsaturated zone

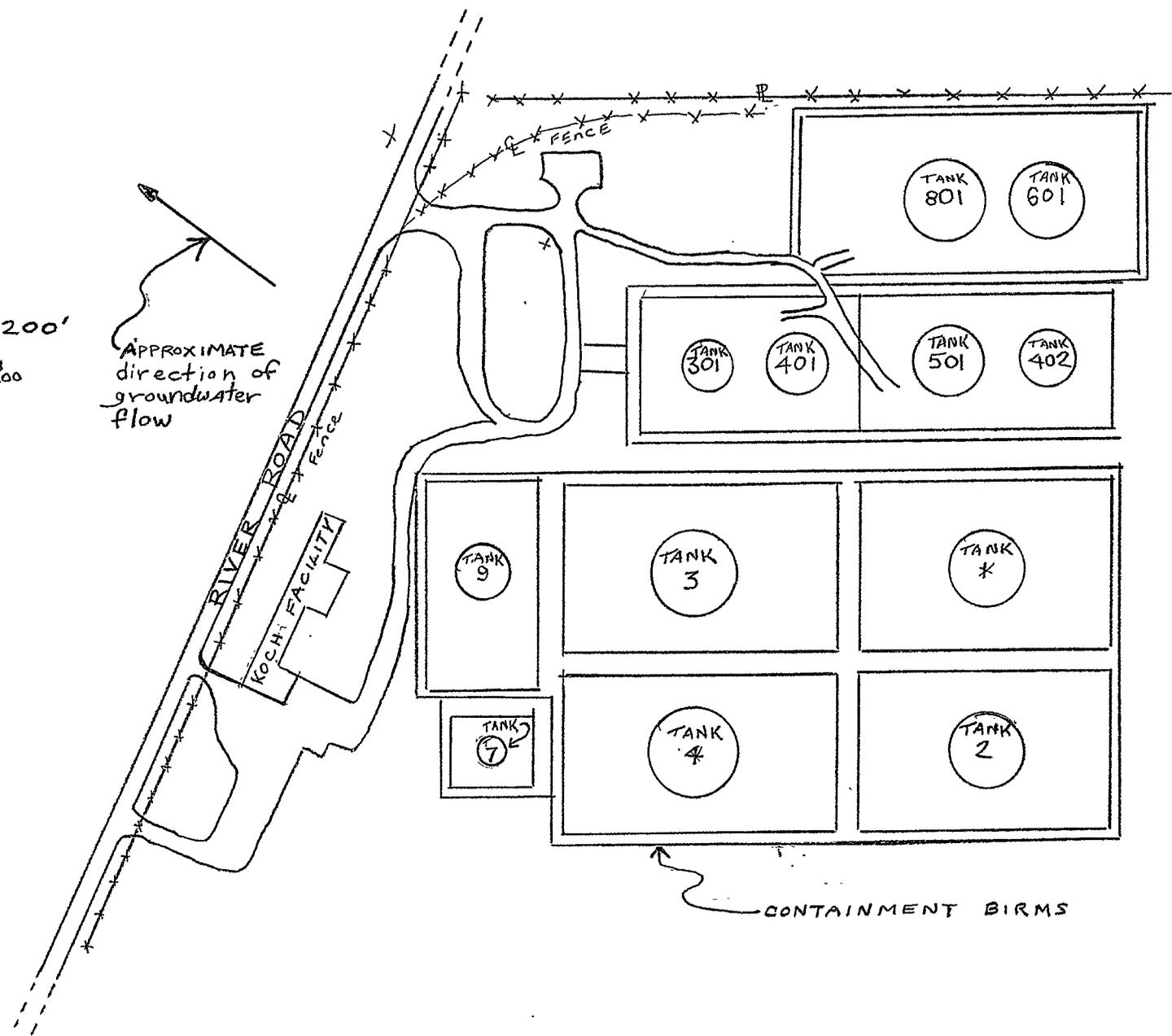
Soil in the unsaturated zone is composed of
fine to medium-grained sands.

Provide map showing: 1. Pollutant source 2. Threatened water supplies 3. Direction of overland flow

Location Diagram of KOCH FUELS, INC.
WILMINGTON, North Carolina - NEW HANOVER COUNTY



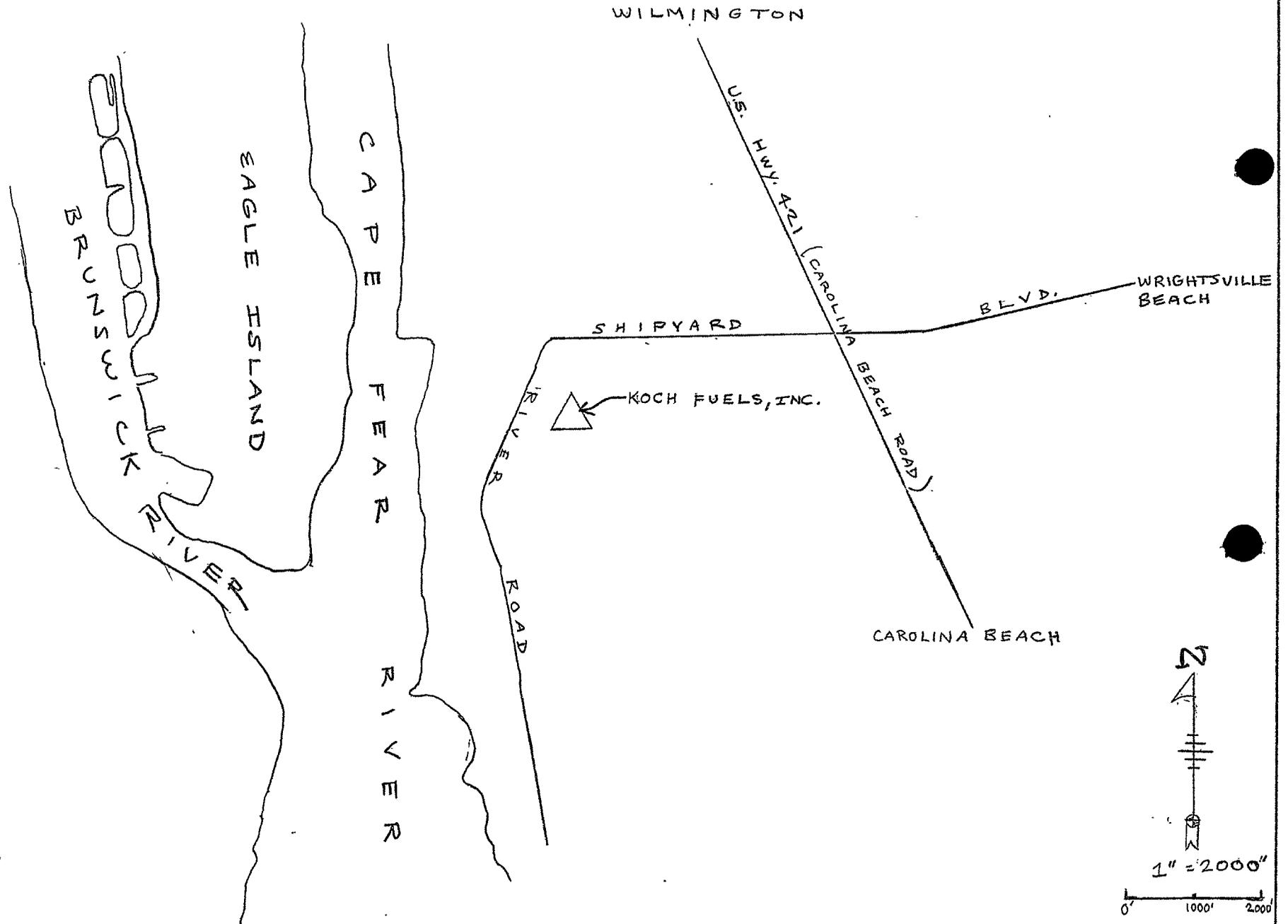
APPROXIMATE
direction of
groundwater
flow



NOTE: ALL TANKS SHOWN ARE
FOR OVERGROUND STORAGE.

WILMINGTON QUAD
DD-31,
LAT/LONG

Area Map - KOCH FUELS, INC.
Wilmington, North Carolina - NEW HANOVER COUNTY



KOCH FUELS, INC,
NH COUNTY ✓

INCIDENT MANAGEMENT SITE STATUS REPORT
INFORMATION REQUIREMENTS

- 1. Incident Number
- 2. Site Priority Ranking Score
- 3. Phase

205
160
FU

DISCOVERY (DI)

DATE

- 4. Complaint or 24-hour leak report received by regional office

3-29-86

ASSESSMENT (AS)

- 5. Preliminary investigation and/or confirmation of leak report conducted by regional office and pollution incident/UST leak reporting form submitted to central office.

7-21-86

RESPONSE (RE)

- 6. Field investigation started to identify source(s) and responsible party(s)

FOLLOW-UP (FU)

- 7. NOV issued to responsible party(s) by regional office
- 8. Cleanup started (excavation, product removal, etc.) by responsible party
- 9. Twenty (20) day corrective action report received by regional office (UST sites)
- 10. Forty five (45) day initial site characterization report received by regional office (UST sites)
- 11. Forty five (45) day free product report received by regional office (UST sites)
- 12. Site "under control"
- 13. Tank data submitted
- 14. Enforcement report submitted by regional office
- 15. Special order issued by EMC

5-1-86

4-3-86

REMEDIAL ACTION (RA)

- 16. Corrective action plan approved by regional office
- 17. Public notice published
- 18. Public meeting held
- 19. SOC signed by Director/EMC

CLOSE OUT (CO)

- 20. Cleanup completed - no further action necessary
- 21. Close out report submitted to central office

**For further clarification of phase terminology, see attached document entitled "Explanation of Phase Nomenclature".

KOCH FUELS, INC.
NH COUNTY

INCIDENT MANAGEMENT SITE STATUS REPORT
INFORMATION REQUIREMENTS

- 1. Incident Number
- 2. Site Priority Ranking Score
- 3. Phase

3261
160
FU

DISCOVERY (DI)

DATE

- 4. Complaint or 24-hour leak report received by regional office

3-29-86

ASSESSMENT (AS)

- 5. Preliminary investigation and/or confirmation of leak report conducted by regional office and pollution incident/UST leak reporting form submitted to central office.

7-21-86

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5-1-86

4-3-86

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KOCH FUELS, INC.,
NH COUNTY

INCIDENT MANAGEMENT SITE STATUS REPORT
INFORMATION REQUIREMENTS

1. Incident Number
2. Site Priority Ranking Score
3. Phase

3262
160
FU

DISCOVERY (DI)

DATE

4. Complaint or 24-hour leak report received by regional office

3-29-86

ASSESSMENT (AS)

5. Preliminary investigation and/or confirmation of leak report conducted by regional office and pollution incident/UST leak reporting form submitted to central office.

7-21-86

RESPONSE (RE)

6. Field investigation started to identify source(s) and responsible party(s)

FOLLOW-UP (FU)

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5-1-86

4-3-86

REMEDIAL ACTION (RA)

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17. Public notice published
18. Public meeting held
19. SOC signed by Director/EMC

CLOSE OUT (CO)

20. Cleanup completed - no further action necessary
21. Close out report submitted to central office

**For further clarification of phase terminology, see attached document entitled "Explanation of Phase Nomenclature".

KOCH FUELS, INC.
NH COUNTY

INCIDENT MANAGEMENT SITE STATUS REPORT
INFORMATION REQUIREMENTS

- 1. Incident Number
- 2. Site Priority Ranking Score
- 3. Phase

3264
160
FU

DISCOVERY (DI)

DATE

- 4. Complaint or 24-hour leak report received by regional office

3-29-86

ASSESSMENT (AS)

- 5. Preliminary investigation and/or confirmation of leak report conducted by regional office and pollution incident/UST leak reporting form submitted to central office.

7-21-86

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4-3-86

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- 21. Close out report submitted to central office

**For further clarification of phase terminology, see attached document entitled "Explanation of Phase Nomenclature".

**UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS**



PENALTY FOR PRIVATE USE \$300

SENDER INSTRUCTIONS
Print your name, address, and ZIP Code in the space below.

- Complete items 1, 2, 3, and 4 on the reverse.
- Attach to front of article if space permits; otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

RETURN TO

Rose Sidorenko
(Name of Sender)
7225 Wrights Ave
(No. and Street, Apt., Suite, P.O. Box or R.D. No.)
Wilmington, NC 28403
(City, State, and ZIP Code)

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.

Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent the article from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
Andy Simmons
High Rise Service Co.
Rt. 1, Box 2000
Weldon, NC 28551

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail	<input type="checkbox"/> Insured <input type="checkbox"/> COD <i>9 507 960 430</i>

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
X *Vickie Newton*

6. Signature - Agent
X **RECEIVED**

7. Date of Delivery
JUN 3 1986

8. Addressee's Address (ONLY if requested and fee paid)

GROUN WATER SECTION
WILMINGTON REGIONAL OFFICE

DOMESTIC RETURN RECEIPT

P 587 860 430

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

PS Form 3800, Feb. 1982
* U.S.G.P.O. 1983-403-517

Sent to <i>Andy Simmons</i>	
Street and No. <i>Rt 1 Box 2070</i>	
P.O., State and ZIP Code <i>Holland, NC 28647</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
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Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	



State of North Carolina
Department of Natural Resources and Community Development
Wilmington Regional Office

James G. Martin, Governor

S. Thomas Rhodes, Secretary

May 28, 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Andy Simmons
High Rise Service Company, Inc.
Route 1, Box 2000
Leland, NC 28451

SUBJECT: Notice of Violation
Conditions of WCP# 64-0315-WM-0202
Koch Fuels, Inc.
Wilmington - New Hanover County

Dear Mr. Simmons:

On 07 April 1986, Rose Sidorowicz, Hydrogeological Technician with the Groundwater Section of the NC Division of Environmental Management, inspected thirteen (13) monitoring wells at the Koch Fuel terminal located off River Road, in Wilmington, NC.

As a result of the inspection, you are in violation of condition #1 of Well Construction Permit #64-0315-WM-0202, which was issued to Koch Fuels, Inc. on 20 February 1986. In brief, the condition stated that the wells shall be constructed as shown on the attachments submitted with the permit application. Specifically, the monitoring well construction diagram showed that the wells should have had a locking well shield or overshoot. The inspection revealed the absence of the locking overshoots on all thirteen (13) monitoring wells.

To achieve compliance with this condition, you must provide locking well shields on all thirteen (13) monitoring wells located at the subject facility within fifteen (15) days upon receipt of this Notice.

Mr. Andy Simmons
Page Two
May 28, 1986

If you have questions, please contact Rose Sidorowicz at (919) 256-4161.

Sincerely,



Charles Wakild
Regional Supervisor

cc: Page Benton
Perry Nelson
~~WIRO~~
Central Files

KOCH FUEL INC
05-06-86 (1000-1128)

JIM STRICKLAND
RICK SHIVER

KOCH BOUGHT SUN OIL TERMINAL IN
NOVEMBER 1981. PX WAS ONLY PRODUCT
SHIPPED NOV 81 TO JUNE 1983. JIM
BEGAN WORK IN MAY 1984. INVENT-
ORY OF FUELS BEGAN IN JUNE 1983.

KOCH'S INVENTORY CONTROL STANDARD
IS 0.25% OF 1%₀. INDUSTRY
STANDARD IS 0.50% OF 1%₀.

"STRAPPING" OF A TANK IS DONE
ABOUT EVERY 10 YEARS. STRAPPING
MEASUREMENTS ARE ACCURATE
± 0.1-0.2 OF 1%₀.

ONCE INVENTORY LOSS IS APPARENT,
THEN KOCH:

1. CEASE PRODUCT INPUT OR
OUTPUT
2. REGAUGE TANKS
3. CHECK THROUGHPUT (TRUCK
LOADINGS)

KOCH NOW CALIBRATES METERS TWICE YEARLY, WILL BEGIN TO CALIBRATE ON A MONTHLY FREQUENCY.

GAUGING IS PERFORMED AT 2000 HOURS EACH DAY : $Q_{\text{PRODUCT}} - Q_{\text{WATER BOTTOM}} = \text{GROSS } Q \times \text{ADJUSTMENT FACTOR (API GRAVITY READING FROM HYDROMETER AND AVERAGE OF THREE TEMPERATURE MEASURES)} = \text{NET } Q.$

EVAPORATIVE LOSSES? FOR EXAMPLE, GAS EVAPORATES FROM TANKS WHEN $T^{\circ}F$ EQUALS OR EXCEEDS 88.

KOCH DOES NOT METER AT DOCKS; GAUGES TANKS AND VESSELS BEFORE AND AFTER OFFLOADING (VERIFIED BY INSPECTOR FROM SGS SERVICE CO. OR LAW & CO.).

MIDDLE DISTILLATE FUELS : CETANE RATING
HOME FUEL OIL NO. 2 : CETANE 45
DIESEL FUEL NO. 2 : CETANE 50
DIESEL FUEL NO. 1 IS EQUIVALENT TO KEROSENE (K2)

K1 IS EQUIVALENT TO JET FUEL?

THEFT IS A POSSIBILITY, ALSO.

JIM MAINTAINS THAT TANK NO. 1
IS NOT LEAKING (IT HAS NOT LOST
ITS WATER BOTTOM).

SUNOCO/KOCH PARA-XYLENE SPILL

CARLILE GRAY

RECOVERY AS OF JUNE 1983: 244,000 GALLONS PX

GASOLINE SPILL: WHEN W.L.'S ARE HIGH (RECHARGE), PRODUCT NOT PRESENT IN WELLS; WHEN W.L.'S ARE LOW (DISCHARGE), PRODUCT REAPPEARS IN WELLS. WHY IS THIS?

ALSO, HYDROCARBON SPILLS MOVE INITIALLY BUT, LATER, MOVEMENT CEASES. WHY?

APPARENTLY, SUNOCO EXPERIENCED A 30,000 PX SPILL SOME YEARS AGO. ALSO, THE FUEL OIL TANK AT THE STEAM FACILITY WAS OVERFILLED, FUEL OIL POOLED IN THE IMPOUNDMENT, AND FUEL OIL NOW SHOWS IN WELL 6.

HEAT TAPES DO NOT WORK SO RECOVERY IS NOT ATTEMPTED DURING WINTER (NOV-APR).

CARLILE REQUESTED PERMISSION TO DISCONTINUE PX RECOVERY. PERMISSION DENIED, SINCE PLUME ON SPA PROPERTY, AND PLUME UPGRADIENT SPA

STORM SEWER SYSTEM. RECOVER UNTIL NOVEMBER,
MEASURE PRODUCT A IN APRIL 84, THEN WE'LL
DISCUSS FUTURE ACTION.

SUNMARK INDUSTRIES (NOW KOCH) 02-09-82 (1500-1600).

RECOVERY TO DATE: 214,000 GALLONS PX

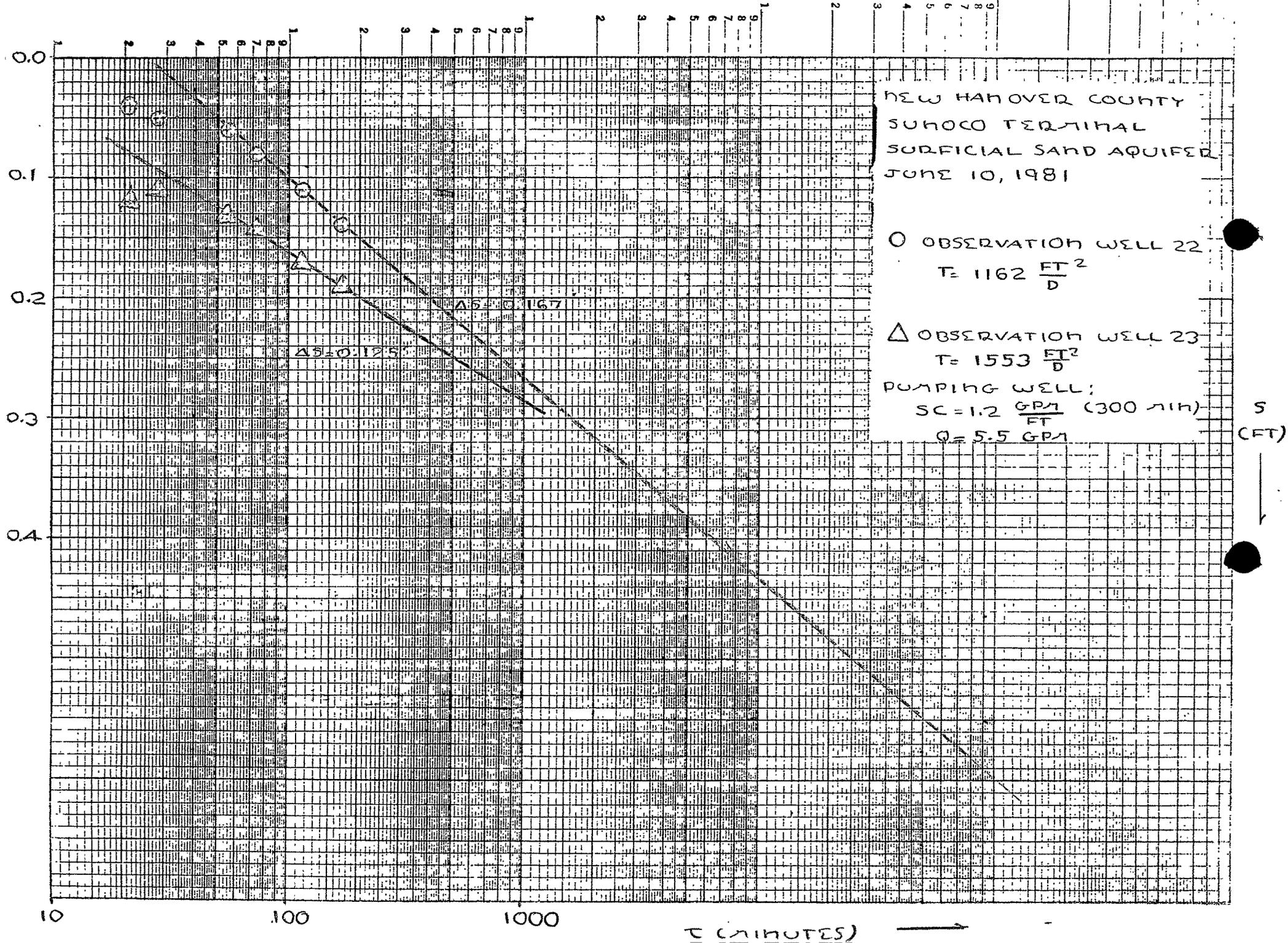
NUMBER OF OW'S: SEVENTY

NUMBER OF RECOVERY WELLS: SEVEN (NO. 2 - NO. 9)

06-29-82: INVESTIGATED SUBSURFACE SPILL KNOWN TO HAVE
(0930-1030) ORIGINATED FROM PIPING WITH HOLE. 3000 GALLONS
PX BELIEVED SPILL. PX PROBABLY ENTERED PIPING
THAT INTERCEPTED EXISTING PX PLUME. OIL NOW
SHOWING IN RIVER, BUT THIS SPILL APPEARS UN-
RELATED TO SUNMARK/KOCH SPILL.

SUNMARK (NOW KOCH) 12-03-82: PX RECOVERY
TO DATE 238,479 GALLONS.

SUNMARK/KOCH 6-03-83: 241,000 GALLONS PX



FACT SHEET

June 9, 1981

Sunmark Industries
Para-xylene Spill

1300: Met with Carlile Gray at spill scene. The purpose of the meeting was to overview the progress in removing the Px from the subsurface. Recovery efforts still are progressing satisfactorily. At present, 1000 gallons per day of Px are being pumped from the Surficial Sand Aquifer. The recovered Px is being sold to Apex, where it is being mixed with gasoline.

However, the plume has moved off the property boundary onto State Ports property. It would appear that the spill has resulted in the death of longleaf pine trees to the north and east of the terminal: 1400.

FACT SHEET

Sunmark Industries

4-17-81

1330-1430: visited Sunmark Industries to observe recovery process and assure that the dewatering well (64-0163-WC-0148) is properly constructed. Currently, three of four recovery wells are being pumped with Scavengers. The recovered product is being pumped into two truck-tankers, then is off-loaded into railway tankers. Recovery is proceeded satisfactorily.

Charles Skipper has completed a test hole prior to constructing the dewatering well. The lithologic sequence follows:

yellow sand, fine-medium . . . 0-10'
brown sand, medium 10-17'
white sand, medium 17-22'
brown sandy mud 22-32'
gray limestone 32'

1503-1530: visited Charles Skipper at Sunmark Industries. After discussing the results of the test hole, it was decided to construct the dewatering well to a depth of 22' with a screen setting from 17-22'.

FACT SHEET

SUNMARK INDUSTRIES

4-22-81

1030-1045: ATTEMPTED TO VISIT SKIPPER/GRAY AT SUNMARK. HOWEVER, NEITHER SKIPPER NOR GRAY WERE THERE. DEWATERING WELL APPEARS IN CONFORMANCE WITH 15 HCAC 2C, EXCEPT FOR DEPTH AND GROUT PROVISIONS (ORALLY WAIVED).

GROUNDWATER COMMENTS

This report provides the preliminary groundwater findings concerning a subsurface para-xylene spill that occurred underneath Sun Oil Terminal, New Hanover County (Figure 1). When the recovery process is completed, a final report then will be written and submitted to Mr. Ted Mew. The author of this report is Mr. Rick Shiver, Hydrologist with the Wilmington Regional Office. The report contents reflect the availability of information as of April 1, 1981.

The subject para-xylene spill originated from a buried and leaking transmission line at the location shown in Figure 2. The para-xylene leaked past a hole that resulted when a heat cable connector somehow separated from the eight-inch para-xylene transmission line. Para-xylene is pumped through this heated transmission line at a pressure of 150 pounds per square inch (psi). Manifested as a seep on land surface, the spilled para-xylene was discovered by Sun Oil Company (hereinafter, the company) on January 20, 1981. On the same day, the soil under the seep was excavated, and the source of the leak was repaired. Believing that this para-xylene spill was minor, the company did not, on January 20, 1981, report the spill to staff with the Wilmington Regional Office.

Thereafter, on February 26, 1981, para-xylene was discovered in sewage lift station number 17. After inspecting manholes and lift stations proximal to Exxon and the company, both whom store para-xylene, the investigators concluded that the para-xylene in fact originated somewhere on the company's property. Suspecting the para-xylene was the result of a point source discharge, personnel with the City of Wilmington plugged the sewage lateral that connected the company to the City sewer system. During this investigative phase (February 26-27, 1981), the company stated that no para-xylene spill had occurred on company property.

Then, on March 18, 1981, Mr. Carlyle Gray, by telephone conversation, informed me of the company's intention to conduct test drilling on the terminal property to confirm or deny the presence of spilled para-xylene in the subsurface. That same day, Mr. Ben Chieffo, by telephone conversation, informed me and Mr. Preston Howard that the company now in fact suspected that a sub-surface para-xylene spill had occurred at the terminal site, and that a consultant (Mr. Gray) had been hired to initiate appropriate subsurface investigations.

On or about March 19, 1981, drillers with Soils and Material Engineers, Inc., under Mr. Gray's supervision, began test drilling at the terminal site. On March 24, 1981, by telephone conversation Mr. Gray informed me that: 1) the test drilling had confirmed the presence of a subsurface para-xylene spill underneath the terminal, 2) the horizontal and vertical extent of the para-xylene had been delineated, and 3) recovery efforts were already underway, that 3000 gallons of the spilled para-xylene already had been pumped from one recovery well.

On the afternoon of March 24, 1981, I met with Mr. Jacob Brehmer, Sunmark Employee, and Mr. Tom Smith, Sunmark Terminal Manager, to complete a field investigation of the subject spill. A summary of the meeting is contained in the attached FACT SHEET.

Then, on April 1, 1981, I met with Carlyle Gray to review the progress of the company's recovery efforts. From information provided to me by Mr. Gray, the details of the subsurface spill are depicted in Figure 2. The spilled para-xylene occupies the pore spaces between a fine-to-medium grained sand. The geometry of the plume is ellipsoid (in plan view) and in area is 2 acres. The top of the spilled para-xylene occurs five-to-six feet below land surface. The maximum thickness of the para-xylene spill is four-to-five feet. The general direction of groundwater flow is from east-to-west, toward the Cape Fear River. As shown in Figure 2, the spilled para-xylene has moved off the company's northern property boundary.

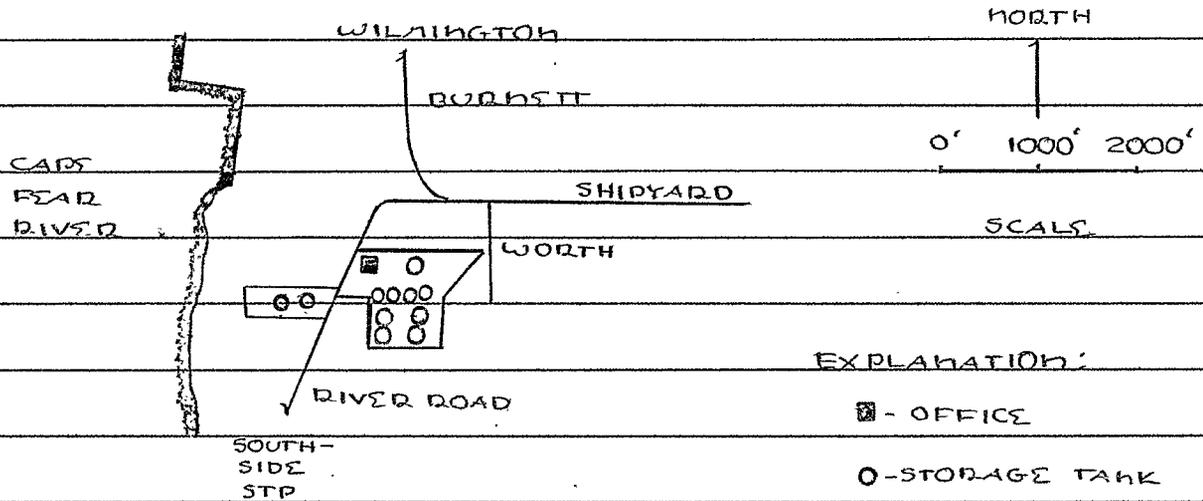
Significantly, the para-xylene plume envelopes the lateral sewage line that conveys wastewater from the office to the city's wastewater treatment plant. It is therefore probable that the spilled para-xylene entered this lateral as inflow; flowed thence into the manhole and entered the sewer trunk; flowed thence into lift station number 17; and thence was pumped to the Southside Wastewater Treatment Plant.

Realizing the severity of this subsurface spill, the company now is attempting to recover the para-xylene in an expeditious manner. Based on data from twenty observation wells, four recovery wells have been installed at locations where the para-xylene plume is thickest. Each recovery well is nine-to-ten feet in depth, twenty-six inches in diameter, screened from four-to-ten feet, and packed with gravel from land surface to total depth. A Scavenger (brand name) is used to pump the spilled para-xylene into a truck-tanker. The company intends to have the para-xylene, with fuel oil impurities, recycled at a Corpus Christi Plant where industrial para-xylene is manufactured. As of April 1, 1981, 5000 gallons of an estimated 292,000 gallons of spilled para-xylene had been removed from the unconfined aquifer.

Recovery efforts are proceeding slowly, but satisfactorily. However, once the three remaining recovery wells are activated (pending receipt and emplacement of three new Scavengers), the recovery progress is expected to be greatly accelerated. Since the para-xylene solidifies at 55 degrees Fahrenheit, and possesses a flash point of 77 degrees Fahrenheit, it is anticipated that recovery efforts will not be possible during the winter months and may not be possible during the summer months. It is anticipated that recovery will not be completed for one to three years.

Although a hazardous material spilled in excess of Reportable Quantities (1000 pounds or 142 gallons), the para-xylene spill does not endanger down-gradient groundwater users, since there are none. However, the spilled para-xylene represents a considerable endangerment to underground utilities, as demonstrated by the probable inflow of para-xylene into the city's sewer system: in this instance, the para-xylene fumes caused a potentially explosive environment in the manhole and lift station, and the liquid product proved toxic to organisms in the trickling filter system at the Southside Wastewater Treatment Plant.

FIGURE 1: DIAGRAM SHOWING THE LOCATION OF THE SUH OIL TERMINAL, NEAR WILMINGTON, NEW HAMPSHIRE COUNTY

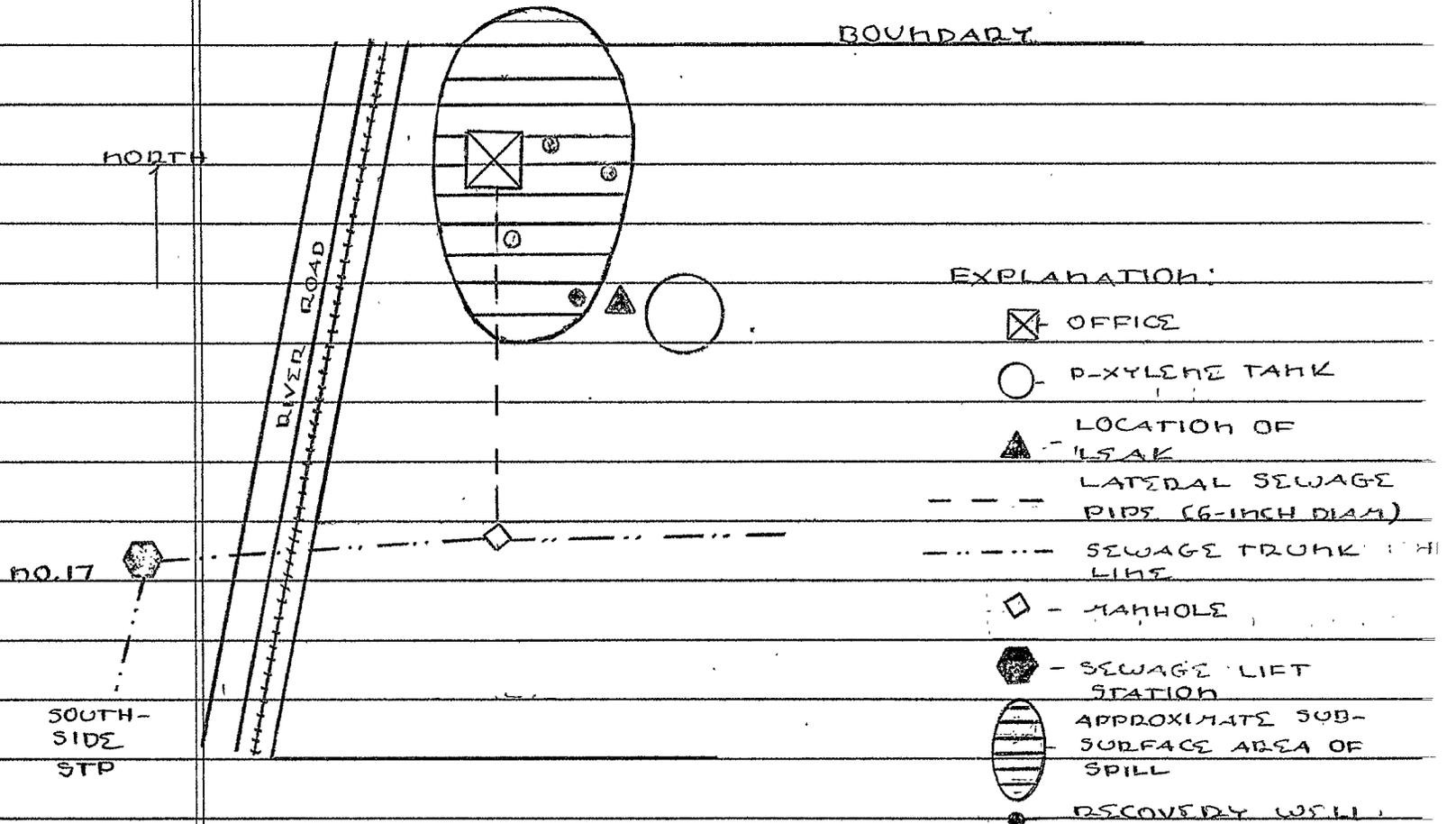


EXPLANATION:

☒ - OFFICE

○ - STORAGE TANK

FIGURE 2: SCHEMATIC SHOWING THE PARTICULARS RELATED TO THE SUBSURFACE SPILL, SUH OIL TERMINAL



EXPLANATION:

☒ - OFFICE

○ - P-XYLENE TANK

▲ - LOCATION OF LEAK

--- - LATERAL SEWAGE PIPE (6-INCH DIAM.)

- · - - - - SEWAGE TRUNK LINE

◇ - MANHOLE

⬡ - SEWAGE LIFT STATION

⊖ - APPROXIMATE SUB-SURFACE AREA OF SPILL

● - DISCOVERY WELL

FACT SHEET

P-xylene Subsurface Spill

Sunmark Industries

From 0900-1026 on April 1, 1981, Rick Shiver met with Carlyle Gray, consultant for Sunmark, to discuss the current effort to remove Px from the subsurface.

To date, Mr. Gray has had installed twenty-one observation wells and four recovery wells. Until additional scavenger systems are received (within one to six weeks), recovery is proceeding only at well four. As of today, 5000 gallons of Px have been pumped from well four.

Mr. Gray's draft interpretive maps show that the areas of the Px plume is 87,000 square feet (2.0 acres). The plume is elliptical in plan view with the long axis (300') trending north-west-north to south-east-south and the short axis (290') trending east-north-east to west-south-west. The long axis of the plume parallels the equipotential lines. The plume has moved off Sunmark's northern property boundary.

The Px plume attains a maximum thickness of four feet. The thickest portion of the plume envelopes the lateral sewer line. It is therefore likely that Px in fact entered this lateral during 2-81 (inflow).

The Px from the four recovery wells is dark brown in color. It is suspected that the Px acts as a carrier agent for fuel oil previously spilled into the subsurface.

At this point, recovery efforts are proceeding satisfactorily. Mr. Gray was requested to update me on the recovery progress at the end of each month. Additionally, Mr. Gray was requested to transmit to me, subject to Ben Chieffo's, approval, a copy of his completed report on the subject spill.

FACT SHEET

P-xylene Subsurface Spill

Sunmark Industries

On March 24, 1981, Rick Shiver investigated a subsurface paraxylene spill at Sun Oil Terminal, Wilmington, N.C.

1315-1335. After properly identifying myself to Mr. Jacob Brehmer, Sunoco employee, I stated the purpose of my visit. Mr. Brehmer showed me the retrieval system which consisted of a five foot well (26-inch diameter) from which product was being pumped by means of a "floating scavenger" system. Mr. Brehmer stated that the p-xylene weighed 7.029 pounds per gallon and crystallized at 54-55 degrees Fahrenheit. The recovered product was being pumped into a truck-tanker.

1335-1403. At this time, Mr. Tom Smith, Sunoco Terminal Manager, entered the office. After identifying myself to Mr. Smith, he and I discussed the particulars related to the subsurface spill.

Mr. Smith informed me that the source of the spill was discovered 1-20-81. On 1-20-81, a Sunoco employee noticed a p-xylene odor somewhere on the terminal site. After further investigation, the employee noted p-xylene on land surface. At the site, that same day, a pipe was excavated, and it was observed that a heat cable connector had broken off the eight inch pipe. The heat cable connector was repaired.

Mr. Smith explained to me the following:

1. Two pipes, each parallel one to the other, exist between the tank and barge dock. The p-xylene is pumped from the barge dock to the tanks through these pipes (10 and 12-inch diameter).
2. An eight-inch by four-inch pipe connects the tank to the Exxon Terminal. P-xylene is pumped from the tank through this pipe to the Exxon terminal, thence to Dupont.
3. All the pipes above are equipped with two heat cables (5/16-inch in diameter). The heat cables enter the pipe through one-half inch blanks.
4. P-xylene is pumped from the Sunoco terminal to the Exxon terminal at a pressure of 120 psi.

Again, I asked when the spill was discovered, and again, Mr. Smith replied that the spill was discovered 1-20-81. After the employee discovered the source, repairs were effected immediately. However, Mr. Smith stated that he did not believe - at the time - that the amount of leakage was significant.

When asked how much p-xylene was believed lost, Mr. Smith replied that strapping(?) measurements suggested an inventory loss of 291,996 gallons: the inventory period was concluded 1-31-81. However, Mr. Smith attributed this loss to inaccurate gauges at the barge dock. During an audit, Mr. Smith brought this discrepancy to the attention of the auditors. The value of the lost p-xylene is estimated at \$621,000.

During the visit, the source of the spill was investigated. The leaking line had been excavated to expose several pipes as well as the one-half inch blanks(?) which contained the heat cables.



A Division of Sun Oil Company of Pennsylvania

P.O. BOX 7368, PHILADELPHIA, PA. 19101/1845 WALNUT STREET, PHILADELPHIA, PA. 19103

RECEIVED

MAR 23 1981

WILMINGTON REGIONAL OFFICE
DEM

March 19, 1981.

Mr. Preston Howard
Environmental Engineer
North Carolina Dept. of Natural
Resources & Community Development
7225 Wrightsville Avenue
Wilmington, NC 28403

Dear Preston:

This is to confirm our March 18, 1981 discussion pertaining to my notification to you of a suspected para-xylene leak at our Wilmington, North Carolina Terminal. As I mentioned to you, we are still in the investigative phase of this suspected loss and, therefore, are not in a position to discuss details at this time. However, as we agreed, we will commence exploratory and recovery preparations immediately and keep your office aware of our progress.

Further, it is my understanding that you wish to be notified when our recovery begins so I have instructed our geologist, Mr. Carlyle Gray, to so notify you at that appropriate time.

I also want to take this opportunity to thank you and Mr. Rick Shiver for your cooperation in this matter.

Should you require any additional information, please do not hesitate to call me.

Very truly yours,

SUNMARK INDUSTRIES, A Division
of Sun Oil Co. of Pennsylvania

A. B. Chieffo
Manager, Environmental, Safety-
Health & Security

ABC:sc

cc: Rick Shiver
North Carolina Dept. of
Natural Res. & Comm. Development

DIVISION OF ENVIRONMENTAL MANAGEMENT

March 17, 1981

MEMORANDUM

To: Wilmington Regional Files

From: Steve Long, Environmental Chemistry Consultant *SL*
Wilmington Regional Office

Subject: Hydrocarbons leaking into City Sewer System
City of Wilmington, Southside Plant
New Hanover County

At 9:00 AM on February 26, 1981, Lt. Gene Schlechte of the U.S. Coast Guard called to report an oily substance in the city sewer system thought to be parazylyene. The volatile material was causing a hazardous situation at the #17 lift station and seriously affecting the operating efficiency at the Southside W.T.P.

At 10:00 AM the writer met with several concerned parties at the Southside W.T.P. to discuss the current situation and what to do about it. Present at the meeting were as follows:

Mr. Roger Fry, City of Wilmington
Mr. John Swift, City of Wilmington
Mr. W.T. Anderson, City of Wilmington
Mr. Ed Schwinn, City of Wilmington
Lt. Gene Schlechte, U.S. Coast Guard
Mr. David Boswell, Fire Dept.

The volatile substance was creating a hazardous condition and completely stripped the biota from the trickling filter. The substance was thought to be originating from a six inch pipe located at the Sun Oil Terminal on River Road.

During the meeting it was agreed to meet with Mr. Smith, manager of the Sun Oil Terminal. At this meeting Mr. Smith stated that he did not know the origin of the substance leaking into the city sewer. City personnel obtained samples of the material from the six inch pipe which serves the bathrooms at the Company. Visual observations of the sample confirmed that an oily substance was flowing out of the six inch pipe into the city's sewer line. Later, during the day the city plugged the six inch pipe serving the company.

The writer observed the effluent at the W.T.P. and did not notice any oily substance at the discharge; but did smell the odor of a volatile hydrocarbon at the trickling filter and at the influent. The trickling filter was completely stripped of biota, apparently due to the hydrocarbons.

Memorandum
Page 2
March 17, 1981

Later during the afternoon of the 26th, the writer talked with Mr. Mike Jones, Attorney with the city, regarding the current situation. Mr. Jones requested that this office conduct an investigation at the Sun Oil Company and try to locate the origin of the substance. Mr. Jones made this request since the company is located outside the city limits and the city does not have an adopted sewer use ordinance.

On the morning of the 27th, Mr. Charles Wakild, Mr. Preston Howard, and the writer met with city personnel and Mr. Smith and conducted a very thorough inspection at the Sun Oil Company Terminal. The origin of the substance was not located, but the inspection did locate two oil skimmer discharges of a very minor nature. Mr. Smith was informed that application forms for these two discharges would have to be submitted to this office in the very near future.

During the afternoon of the 27th the writer and Mr. Preston Howard was present at the site for a dye study of the six inch pipe. The city maintenance crew conducted the study and confirmed that the bathrooms at the Terminal were connected to the six inch pipe in question. Visual inspection also confirmed that an oily substance was still present in the pipe. The six inch pipe was again plugged.

On March 3, 1981, the writer contacted Mr. Anderson and he stated that the sample collected by the city on March 26, 1981, contained parazylene, fuel oil, and other traces of hydrocarbons. He also stated that the effluent BOD at the Southside Plant was 108 mg/l on March 26, 1981, and that at this time the city did not know when the plug in the six inch pipe serving the Sun Oil Terminal would be removed.

On March 10, 1981, the writer contacted Mr. Anderson again and he stated that the trickling filter had not recovered and the BOD was averaging 67 mg/l in violation of their permit limits.

cc: Central Files

FEBRUARY 20 1981

SUNOCO OIL COMPANY

PARAXYLENES

XYLENES $C_6H_4(CH_3)_2$

A. SYNONYMS:

O-XYLENE (IUPAC: 1,2-DIMETHYL-BENZENE)

M-XYLENE (IUPAC: 1,3- " - ")

P-XYLENE (IUPAC: 1,4- " - ")

B. DESCRIPTION:

LIQUID (EXCEPT P-XYLENE IS A SOLID AT
TEMPERATURES BELOW 55°F)

COLORLESS

AROMATIC ODORS

C. CHEMICAL DESCRIPTION:

MOLECULAR WEIGHT 106

BOILING POINT 281°F

SOLUBILITY 0.00003%

FLASH POINT 81°F

VAPOR PRESSURE 9 mm

MELTING POINT 55°F

UPPER EXPLOSIVE LIMIT 7%

LOWER EXPLOSIVE LIMIT 1.1%

INCOMPATIBILITIES: STRONG OXIDIZERS

40 CFR PART 117: HAZARDOUS MATERIAL

A. REPORTABLE QUANTITY 1000 POUNDS

P-XYLENE (1,4-DIMETHYL-BENZENE):

A. CHEMICAL CHARACTERISTICS:

DENSITY 0.8611²⁰

WEIGHT OF WATER (4°C) IS 8.34 $\frac{\text{LBS}}{\text{GAL}}$

WEIGHT OF P-XYLENE (20°C) IS 7.18 $\frac{\text{LBS}}{\text{GAL}}$

* RQ (1000 LBS) = 139.28 GALLONS (\pm)

CONCLUSION: VISITED SITE 1245 - 1400, APPEARS
TO BE A POINT SOURCE DISCHARGE:
INTENTIONAL?