LASERFICHE FILE TRANSMITTAL FORM
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

Your Name: Bobby Nelms

Document Category: Facility

Document Group: General (G)

Document Type: Correspondence (C)

EPA ID: NCD047369046

Facility Name/Subject: DAK Americas LLC (Formerly DuPont)

Document Date: 11/19/2009
(or Inspection Date)

Description: March 1992 - November 2009

Author: Bobby Nelms

Branch/Unit:

Facility/Site Address:

Facility/Site City:

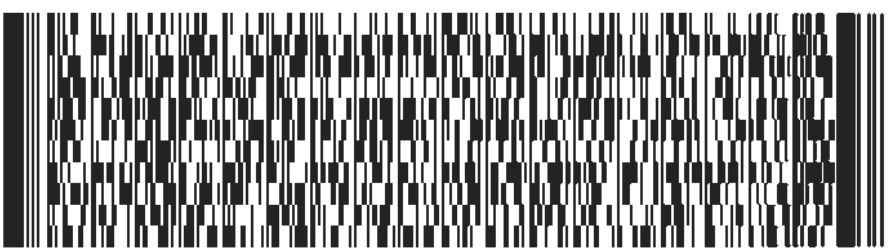
Facility/Site State: North Carolina

Facility/Site Zipcode:

Facility/Site County:

File Room Use Only

	Month	Day	Year
Date Received by File Room			
Date Scanned			



Hazardous Waste Section

File Room Document Transmittal Sheet

Your Name:	Bobby Nelms
EPA ID:	N C D 0 4 7 3 6 9 0 4 6
Facility Name:	DAK AMERICAS LLC/Formerly DuPont
Document Group:	General (G)
Document Type:	Correspondence (C)
Description:	File to be scanned.
Date of Doc:	5/15/2014
Author of Doc:	Bobby Nelms

File Room Use Only

NCD047369046

Date Recieved by File Room:

Month	Day	Year

Scanner's Initials:

Date Scanned:

Hazardous Waste Compliance Data Entry Form

F

EPA ID Number: NCD 047 369 046

Facility Name: DAK Americas

Street: 3500 Daniels Road

City: Leland **ZIP:** 28451 **County:** Brunswick

Contact Name: Winston Price **Phone#:** (910) 371-4830

EVALUATION DATA New: __X__ Change: ____ Delete: ____

Date: 011/19/2009 Evaluation Type: CEI

Date: ___/___/_____ Evaluation Type: _____

Inspector ID #: 036

Evaluation Comments:

Date Determined:

Branch: 07 Person: 036

Return to Compliance: ___ ___/___ ___/___ ___
Scheduled Actual

Regulation Description:

Comment:

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPREHENSIVE EVALUATION INSPECTION (CEI) REPORT

1. FACILITY INFORMATION:

Name:	DAK Americas
EPA ID Number:	NCD 047 369 046
Type of Facility:	Small Quantity Generator
Facility Location:	3500 Daniels Road
	Leland, NC 28451
Telephone Number:	(910) 371-4830

OWNERSHIP: DAK Americas

2. FACILITY CONTACT: Winston Price

3. SURVEY PARTICIPANTS: Winston Price & Robert Hall, DAK
Bobby Nelms, NCDENR

4. DATE OF INSPECTION: 19 November 2009, last inspection 9 January 2009

5. PURPOSE OF INSPECTION: Unannounced audit to determine compliance with regulations described at 40 CFR 261, 262, 265, 268, 273 and 279.

6. FACILITY DESCRIPTION:

DAK Americas is located on 2200 acres and is bounded by the Cape Fear River on the north and east, SR 1426 on the west, and heavily wooded land on the south. The plant manufactures Terephthalic Acid (TPA) and Dacron polyester fiber. The plant has recently expanded to manufacture resin for the plastics industry. The facility has significantly reduced its hazardous waste generation over the years and has recently dropped their generator status to SQG.

7. HAZARDOUS WASTE

Xylene, Petroleum Distillates – Spray Paint F002, F003
Toluene, MEK – Paint Related Waste F003, F005

8. AREAS OF REVIEW AND INSPECTION:

< Emergency Preparedness – The arrangements which were made with local authorities are old so example letters will be issued and revision of the arrangements is recommended.

< Contingency Plan – The facility maintains a LQG type contingency plan.

< Inspection Records (storage) - OK

< Manifests / LDR – Reviewed the 2009 manifests. No violations noted.

< Training Records – Documented training was conducted on 7/6/09

< Biennial Report – Reviewed the 2007 Biennieal report signed 2/26/08

< **Transporters:**

< Safety Kleen TXR 000 050 930

< **TSD's:**
Safety Kleen KYD 053 348 108

< **Accumulation Areas:**
Waste is accumulated at points in the lab and at the paint can puncture area. No violations were noted at accumulation areas.

< **Storage Areas:**
Waste is stored at the waste storage pad located in the main part of the plant. There were no violations noted in this area.
Universal waste is stored in a dedicated storage building. The boxes were not individually labeled but the area was properly labeled and dated. Two 55 gallon drums were also being used to accumulate 4 ft. bulbs. I recommended beginning a dedicated accumulation drum for broken bulbs if broken bulbs are frequently accumulated No violations were noted in this area.

Landfills:
The coal ash, construction debris and asbestos landfills were observed during the inspection as required by the HSWA only permit. All landfill caps and side slopes appear to be in good condition.

< **External Condition of Facility:** There were no adverse conditions noted.

9. WASTE MINIMIZATION: Best Management Practices (Written Plan)

10. SITE DEFICIENCIES:

No Violations Noted

11. RECOMMENDATIONS:

DATE: 25 November 2009

Robert K. Nelms
Environmental Senior Specialist, NCDENR

Emailed to Winston Price DATE:25 November 2009
FACILITY CONTACT

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Waste Management

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

December 7, 2009

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kevin P. Garon
Project Director
DuPont Corporate Remediation Group
6324 Fairview Road
Charlotte, NC 28210

Re: Corrective Measures Study
DAK/DuPont-Cape Fear Plant
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Garon:

In accordance with Permit Condition II.H.1.a.; this letter is a notification that DuPont Corporate Remediation Group must prepare a Corrective Measures Study (CMS) work plan for the DAK/DuPont Cape Fear facility in Leland, NC. DuPont should submit the CMS work plan to the NC Hazardous Waste Section within 90 days of the receipt of this letter. The work plan should meet the requirements outlined in Appendix C of the facility's Hazardous Waste Management Permit and discussed in applicable EPA guidance documents.

If your office has questions concerning this correspondence, please give me a call at (919) 508-8562.

Sincerely,

Larry Stanley

Larry Stanley
NC Hazardous Waste Section

cc: John Johnston, US EPA, Region 4
Bobby Nelms
Larry Stanley

rc: Bud McCarty
Vance Jackson
Larry Stanley

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone: 919-508-8400 \ FAX: 919-715-4061 \ Internet: www.wastenotnc.org

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NCDENR
North Carolina Department of Environment and Natural Resources
Division of Waste Management

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

May 29, 2009

Mr. James K. Henderson
Project Director
DuPont Corporate Remediation Group
6324 Fairview Road
Charlotte, NC 28210

Re: Revised Phase IV RCRA Facility Investigation Report
DAK/DuPont-Cape Fear Plant
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Henderson:

The North Carolina Hazardous Waste Section (HWS) has reviewed the revised version of Phase IV RCRA Facility Investigation Report. As a result of this review, the HWS concluded that the document constitutes an acceptable RFI report.

DuPont-CRG suggests in Section 6.2 of the RFI report, and the HWS agrees, that a meeting to outline a path forward for the site is appropriate. I will contact you in about a week to schedule the meeting. In the meantime, if your office has questions concerning this correspondence, please give me a call at (919) 508-8562.

Sincerely,

Larry Stanley

Larry Stanley
NC Hazardous Waste Section

cc: John Johnston, US EPA, Region 4
Bobby Nelms
Larry Stanley

rc: Bud McCarty
Vance Jackso
Larry Stanley

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone: 919-508-8400 \ FAX: 919-715-4061 \ Internet: www.wastenotnc.org

C:\mel\lgs\dak phase IV rfi report approv.docx

Hazardous Waste Compliance Data Entry Form

File

EPA ID Number: NCD 047 369 046

Facility Name: DAK Americas

Street: 3500 Daniels Road

City: Leland **ZIP: 28451** **County: Brunswick**

Contact Name: Winston Price **Phone#: (910) 371-4830**

EVALUATION DATA New: __X__ Change: ____ Delete: ____

Date: 01/09/2009 Evaluation Type: CEI

Date: ___/___/_____ Evaluation Type: _____

Inspector ID #: 036

Evaluation Comments:

_____ ***HSWA Only Permit*** _____

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (check one):

_____ a SNC (SNY evaluation) Docket # _____

or

_____ no longer a SNC (SNN evaluation)

YES / NO CSE ONLY

Waste Involved	Volume	Exposure Media (a, gw, sw, s)	Distance to Residences	Number of People involved	Distance to On-site wells	Distance to Off-site wells

Date Determined: ___ ___/___ ___/___ ___

Branch: ___ ___ Person: ___ ___ ___

Return to Compliance: ___ ___/___ ___/___ ___ ___ ___/___ ___/___ ___
Scheduled Actual

Regulation Description: _____

Comment: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPREHENSIVE EVALUATION INSPECTION (CEI) REPORT

1. FACILITY INFORMATION:

Name:	DAK Americas
EPA ID Number:	NCD 047 369 046
Type of Facility:	Small Quantity Generator
Facility Location:	3500 Daniels Road
	Leland, NC 28451
Telephone Number:	(910) 371-4830

OWNERSHIP: DAK Americas

2. FACILITY CONTACT: Winston Price

3. SURVEY PARTICIPANTS: Winston Price, DAK
Bobby Nelms, NCDENR

4. DATE OF INSPECTION: 9 January 2009 last inspection 7 August 2008

5. PURPOSE OF INSPECTION: Unannounced audit to determine compliance with regulations described at 40 CFR 261, 262, 265, 268, 273 and 279.

6. FACILITY DESCRIPTION:

DAK Americas is located on 2200 acres and is bounded by the Cape Fear River on the north and east, SR 1426 on the west, and heavily wooded land on the south. The plant manufactures Terephthalic Acid (TPA) and Dacron polyester fiber. The plant has recently expanded to manufacture resin for the plastics industry. The facility has significantly reduced its hazardous waste generation over the years and has recently dropped their generator status to SQG.

7. HAZARDOUS WASTE

Xylene, Petroleum Distillates – Spray Paint F002, F003
Toluene, MEK – Paint Related Waste F003, F005

8. AREAS OF REVIEW AND INSPECTION:

< Emergency Preparedness

< Contingency Plan - N/A

< Inspection Records (storage) - OK

< Manifests / LDR – Reviewed the 2008 manifests. No violations noted.

< Training Records -- N/A

< Biennial Report – N/A

< **Transporters:**

< Safety Kleen TXR 000 050 930

< **TSD's:**

Safety Kleen KYD 053 348 108

< **Accumulation Areas:**

Waste is accumulated at points in the lab and at the paint can puncture area. No violations were noted at accumulation areas.

< **Storage Areas:**

Waste is stored at the waste storage pad located in the main part of the plant. There were eleven 7 gallon containers of hazardous waste in the storage shed. There were no violations noted.

Universal waste was stored in closed boxes. The boxes were not individually labeled but the area was properly labeled and dated. No violations were noted in this area.

Landfills:

The coal ash, construction debris and asbestos landfills were observed during the inspection as required by the HSWA only permit. All landfill caps and side slopes appear to be in good condition.

< **External Condition of Facility:** There were no adverse conditions noted.

9. WASTE MINIMIZATION: Best Management Practices (Written Plan)

10. SITE DEFICIENCIES:

No Violations Noted

11. RECOMMENDATIONS:

DATE: 9 Jan 2009

Robert K. Nelms

DATE: 1-9-09

FACILITY CONTACT

Hazardous Waste Compliance Data Entry Form

EPA ID Number: NCD 047 369 046

Facility Name: DAK Americas

Street: 3500 Daniels Road

City: Leland **ZIP:** 28451 **County: Brunswick**

Contact Name: Winston Price **Phone#:** (910) 371-4830

EVALUATION DATA New: __X__ Change: ____ Delete: ____

Date: 08/07/2008 Evaluation Type: CEI

Date: ___/___/_____ Evaluation Type: _____

Inspector ID #: 036

Evaluation Comments:

_____ ***HSWA only Permit*** _____

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (check one):

_____ a SNC (SNY evaluation) Docket # _____

or

_____ no longer a SNC (SNN evaluation)

YES / NO CSE ONLY

Waste Involved	Volume	Exposure Media (a, gw, sw, s)	Distance to Residences	Number of People involved	Distance to On-site wells	Distance to Off-site wells

Date Determined: ___ ___/___ ___/___ ___

Branch: ___ ___ Person: ___ ___ ___

Return to Compliance: ___ ___/___ ___/___ ___ (Scheduled) ___ ___/___ ___/___ ___ (Actual)

Regulation Description: _____

Comment: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPREHENSIVE EVALUATION INSPECTION (CEI) REPORT

1. FACILITY INFORMATION:

Name:	DAK Americas
EPA ID Number:	NCD 047 369 046
Type of Facility:	Small Quantity Generator
Facility Location:	3500 Daniels Road
	Leland, NC 28451
Telephone Number:	(910) 371-4830

OWNERSHIP: DAK Americas

2. FACILITY CONTACT: Winston Price

3. SURVEY PARTICIPANTS: Winston Price, DAK
Bobby Nelms, NCDENR

4. DATE OF INSPECTION: 7 August 2008

5. PURPOSE OF INSPECTION: Unannounced audit to determine compliance with regulations described at 40 CFR 261, 262, 265, 268, 273 and 279.

6. FACILITY DESCRIPTION:

DAK Americas is located on 2200 acres and is bounded by the Cape Fear River on the north and east, SR 1426 on the west, and heavily wooded land on the south. The plant manufactures Terephthalic Acid (TPA) and Dacron polyester fiber. The plant has recently expanded to manufacture resin for the plastics industry. The facility has significantly reduced its hazardous waste generation over the years and has recently dropped their generator status to SQG.

7. HAZARDOUS WASTE

Xylene, Petroleum Distillates – Spray Paint F002, F003
Toluene, MEK – Paint Related Waste F003, F005

8. AREAS OF REVIEW AND INSPECTION :

<	Emergency Preparedness	Contingency Plan
<	Inspection Records (storage)	Manifests / LDR
<	Training Records	Biennial Report

< **Transporters:**

< Safety Kleen TXR 000 050 930

< Freehold Cartage NJD 054 126 164

< **TSD's:**

Safety Kleen KYD 053 348 108

Giant Resource Recovery SCD 036 275 626

< **Accumulation Areas:**

Waste is accumulated at points in the lab and at the paint can puncture area. No violations were noted at accumulation areas.

< **Storage Areas:**

Waste is stored at the waste storage pad located in the main part of the plant. There were no containers of waste in the storage area but a storage shed for the drums has been added since last year's inspection. There were no violations noted.

< **External Condition of Facility:** There were no adverse conditions noted.

9. WASTE MINIMIZATION: Best Management Practices (Written Plan)

10. SITE DEFICIENCIES:

No Violations Noted

11. RECOMMENDATIONS:

Robert K. Nelms DATE: 20 Aug 2008

Robert K. Nelms
Waste Management Specialist, NCDENR

Emailed to Winston Price DATE: 20 Aug 2008

FACILITY CONTACT

North Carolina
Department of Environment and Natural

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr. , Secretary
Dexter R. Matthews, Interim Director

August 20, 2001

Mr. Winston Price
Environmental Leader
DAK Monomers, LLC
P.O. Box 2042
Wilmington, North Carolina 28402

Re: RCRA Permit Modification
Change of the Facility Owner and Operator
EPA ID # NCD 047 369 046

Dear Mr. Price:

Your request for a permit modification received on June 22, 2001 to change the facility owners and operators has been processed as a class one (1) permit modification under 40 CFR 270.42 as referenced in 15A NCAC 13A .0113. The revised Part A and the documents submitted for financial qualifications meet the requirements of 40 CFR 270.40(b). To comply with 40 CFR 270.42 you must notify all persons on the enclosed mailing list with the exception of the State and EPA who have already been notified. Please replace the revised cover page of the Permit and the revised Part A of the Application with the enclosed pages.

Approval of this modification is therefore granted and has been incorporated into your permit. If you have any questions, please contact Karim Pathan at (919) 733-2178 extension 228.

Sincerely,

Jill B. Pafford, Chief
Hazardous Waste Section

Enclosures

cc: Narindar Kumar, US EPA, Region IV
Arthur Mouberry, GW Section, DWQ
Rick Love, DuPont - Cape Fear
Penny C. Mahoney, DuPont - Cape Fear
Flint Worrell

rc: Peter Doorn
Robert Glaser
Kathy Lawson
Larry Stanley
Kathleen O'Neal
Karim Pathan

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Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

For EPA Regional Use Only		
Date Received Month Day Year		

EPA

United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. Facility's EPA ID Number *(Mark 'X' in the appropriate box)*

A. First Part A Submission	B. Revised Part A Submission (Amendment #_____)
	X

C. Facility's EPA ID Number	D. Secondary ID Number *(If applicable)*
N C D 0 4 7 3 6 9 0 4 6	

II. Name of Facility

D A K M O N O M E R S, L L C

III. Facility Location *(Physical address not P.O. Box or Route Number)*

A. Street

S T A T E R O A D 1 4 2 6

Street *(Continued)*

City or Town	State	Zip Code
L E L A N D	N C	2 8 4 5 1 —

County Code *(If known)*	County Name
	B R U N S W I C K

B. Land Type (Enter code)	C. Geographic Location		D. Facility Existence Date
	LATITUDE (Degrees, minutes, & seconds)	*LONGITUDE (Degrees, minutes & seconds)*	Month Day Year
P	3 4 1 9 0 0 N	0 7 8 0 2 3 0 N	0 7 1 9 1 9 6 8

IV. Facility Mailing Address

Street or P.O. Box

P . O . B O X 2 0 4 2

City or Town	State	Zip Code
W I L M I N G T O N	N C	2 8 4 0 2 —

V. Facility Contact *(Person to be contacted regarding waste activities at facility)*

Name *(Last)*	*(First)*
P R I C E	W I N S T O N
Job Title	**Phone Number** *(Area Code and Number)*
E N V I R O N . L E A D E R	9 1 0 — 3 7 1 — 4 8 3 0

VI. Facility Contact Address *(See instructions)*

A. Contact Address Location	A. Contact Address Mailing	A. Contact Address Other	B. Street or P.O. Box
	X		

City or Town	State	Zip Code
		—

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*: NCD047369046

Secondary ID Number *(Enter from page 1)*:

VII. Operator Information *(See instructions)*

A. Name of Operator: DAK MONOMERS, LLC

Street or P.O. Box: P.O. BOX 2042

City or Town: WILMINGTON

State: NC

ZIP Code: 28402-

Phone Number *(Area Code and Number)*: 910-371-4000

B. Operator Type: P

C. Change of Operator Indicator: Yes X No

Date Changed Month Day Year: 07 31 2001

VIII. Facility Owner *(See instructions)*

A. Name of Facility's Legal Owner: DAK MONOMERS, LLC

Street or P.O. Box: P.O. BOX 2042

City or Town: WILMINGTON

State: NC

ZIP Code: 28402-

Phone Number *(Area Code and Number)*: 910-371-4000

B. Owner Type: P

C. Change of Owner Indicator: Yes X No

Date Changed Month Day Year: 07 31 2001

IX. NAICS Codes *(in order of significance; start in left box)*

First	2824	**Third**	2821
(Description)		*(Description)*	
Second	2865	**Fourth**	
(Description)		*(Description)*	

X. Other Environmental Permits *(See instructions)*

A. Permit Type *(Enter code)*	B. Permit Number	C. Description
N	NC0000063	Wastewater Treatment
P	03033R25	Air
E	WQ0012759	Land Application Residual Solids
R	NCD047369046	RCRA / HSWA

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*: NCD047369046

Secondary ID Number *(Enter from page 1)*:

VII. Operator Information *(See instructions)*

A. Name of Operator: E. I. Dupont de Nemours & Co.

Street or P.O. Box: 6324 Fairview Rd

City or Town: Charlotte

State: NC

ZIP Code: 28210-

Phone Number *(Area Code and Number)*: 704-362-6636

B. Operator Type: P

C. Change of Operator Indicator: Yes X No

Date Changed Month Day Year: 07 31 2001

VIII. Facility Owner *(See instructions)*

A. Name of Facility's Legal Owner: E. I. Dupont de Nemours & Co.

Street or P.O. Box: 6324 Fairview Rd

City or Town: Charlottee

State: NC

ZIP Code: 28210-

Phone Number *(Area Code and Number)*: 704-362-6636

B. Owner Type: P

C. Change of Owner Indicator: Yes X No

Date Changed Month Day Year: 07 31 2001

IX. NAICS Codes *(in order of significance; start in left box)*

First	Third
(Description)	*(Description)*
Second	**Fourth**
(Description)	*(Description)*

X. Other Environmental Permits *(See instructions)*

A. Permit Type *(Enter code)*	B. Permit Number	C. Description
E	10-06	Industrial Landfill

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
N C D 0 4 7 3 6 9 0 4 6	

XI. Nature of Business *(Provide a brief description)*

Manufacture of Terephthalic Acid, Dacron(R) Polyester Resin, and Dacron(R) Polyester Fiber

XII. Process Codes and Design Capacities

A. PROCESS CODE - *Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in item XIII.*

B. PROCESS DESIGN CAPACITY - *For each code entered in column A, enter the capacity of the process.*

1. **AMOUNT** - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.*
2. **UNIT OF MEASURE** - *For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.*

C. PROCESS TOTAL NUMBER OF UNITS - *Enter the total number of units used with the corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectare-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Acres; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T02	Surface Impoundment Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Day; Liters Per Hour; or Million Btu Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; Btu Per Hour; or Million Btu Per Hour
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Liters Per Hour; Kilograms Per Hour; or Million Btu Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Hour; Liters Per Hour; or Miilion Btu Per Hour
T88	Titanium Dioxide Chloride Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed in 40 CFR §260.10	
T94	Containment Building - Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; or Million Btu Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Million Btu Per Hour	X
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu Per Hour	I

EPA ID Number *(Enter from page 1)*: N C D 0 4 7 3 6 9 0 4 6

Secondary ID Number *(Enter from page 1)*:

XII. Process Codes and Design Capabilities *(Continued)*

EXAMPLE FOR COMPLETING ITEM XII (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number		A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. PROCESS DESIGN CAPACITY 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	For Official Use Only
X	1	S02	533.788	G	001	
	1	S01	7324.000	G	001	
	2	S01	10560.000	G	001	
	3					
	4					
	5					
	6					
	7					
	8					
	9					
10						
11						
12						
13						

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in item XIII.

XIII. Other Processes *(Follow instructions from item XII for D99, S99, T04 and X99 process codes)*

Line Number (Enter #s in seq w/XII)		A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. PROCESS DESIGN CAPACITY 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	D. Description Of Process
X	1	T04				In-situ Vitrification
	1					
	2					
	3					
	4					

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
N C D 0 4 7 3 6 9 0 4 6	

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

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

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

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

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

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/ or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of item XIV-D(1).*
3. *Use additional sheet, enter line number from previous sheet, and enter additional code(s) in item XIV-E.*

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

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

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

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

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	p	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*: N C D 0 4 7 3 6 9 0 4 6

Secondary ID Number *(Enter from page 1)*:

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D001	40,000	P	S01	
2	F002				Included with above
3	D002				Included with above
4	D007	500	P	S01	
5	F002	500	P	S01	
6	D006				Included with above
7	D007				Included with above
8	D008				Included with above
9	D004	20,000	P	S01	
10	F001	1,000	P	S01	
11	D009	4,000	P	S01	
12	D018	30,000	P	S01	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
N C D 0 4 7 3 6 9 0 4 6	

XV. Map

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

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (See instructions for more detail).

XVII. Photographs

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

XVIII. Certification(s)

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

Owner Signature		Date Signed 6/21/01
Name and Official Title (Type or print)	Oscar J. Montemayor Vice President	
Owner Signature		Date Signed 6/13/01
Name and Official Title (Type or print)	Willie C. Martin Vice President	
Operator Signature		Date Signed 6/21/01
Name and Official Title (Type or print)	Oscar J. Montemayor Vice President	
Operator Signature		Date Signed 6/13/01
Name and Official Title (Type or print)	Willie C. Martin Vice President	

XIX. Comments

DAK Monomers, LLC and E. I. DuPont will be co-permittees. DAK Monomers, LLC will be the major operator and generator at the site. E. I. DuPont will be the main contact for HSWA issues as the previous owner and operator.

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

February 26, 2007

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kevin P. Garon
Project Director
DuPont-Corporate Remediation Group
6324 Fairview Road
Charlotte, NC 28210

Re: Phase IV RCRA Facility Investigation Work Plan
DAK/DuPont-Cape Fear Facility
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Garon:

The North Carolina Hazardous Waste Section (HWS) has completed a review of the Phase IV RCRA Facility Investigation Work Plan submitted by DuPont's Corporate Remediation Group. Due to several technical questions raised by the review process, the Hazardous Waste Section has determined that it does not constitute an acceptable RFI work plan. Comments intended to further communication and offer guidance are listed below.

Section 3.1
Investigation Approach – Objective # 4

1) In Objective # 4 DAK/DuPont states, in part, that the Phase IV RFI work plan is designed to "obtain data for the development of a 'risk management plan' as an interim endpoint for the corrective action process." The HWS agrees that eliminating or reducing risk to acceptable levels for humans and the environment is an important component of the corrective action process. However, a corrective action strategy in NC must also be broad enough to protect groundwater as a resource and attempt to restore groundwater to its beneficial use. (In NC, "beneficial use" is defined as a drinking water source.)

During the several Completion Meetings held in 2006, DuPont-Corporate Remediation Group and the HWS discussed the roles of source control and the NC 2L Groundwater Rules in a corrective action strategy. During our discussions, it was clear that the 2L Groundwater Rules

would, in many cases, drive the remediation of groundwater and the sources that impact groundwater. Guidance documents that can be viewed at the HWS's website give additional information on corrective action at RCRA facilities and addressing these goals.

Personnel from the HWS and the Division met recently to clarify the application of the 2L Groundwater Rules and Standards within the Division of Waste Management. The Division determined that all facilities will be required to meet 2L groundwater standards, unless specifically excluded under 15 NCAC 2L .0106 (k), (l), (m) or 15 NCAC 2L .0113.

Section 3.1.2
SWMU 37 – Former Incinerator Facility

2) The source for the naphthalene detected in monitoring well MW-51 has not been established. (During two recent sampling events, the concentration of naphthalene in groundwater samples collected from MW-51 was measured at 1300 ppb.) DAK/DuPont has indicated that the most likely source is a former underground storage tank located at SWMU 37-Former Incinerator Facility. The HWS recommends that DAK/DuPont conduct investigations designed to locate and characterize the source for the naphthalene in groundwater.

Section 3.1.3
SWMU 59 – Demolition Landfill

3) DAK/DuPont should elaborate further on the proposed geophysical program. More specifically, information on the performance parameters of the selected geophysical method, such as the radius of investigation and depth of investigation, should be included in the work plan. Other factors which may affect these parameters (such as soil type or depth to the water table) should also be part of the discussion. In addition, the anticipated anomaly size and probability of delineating an anomaly of this size should be mentioned.

Section 3.1.4
AOC A – Paraxylene Aboveground Storage Tank (AST)

4) There is a water-filled ditch located adjacent to the secondary containment for AOC A-Paraxylene Aboveground Storage Tank (AST). On a previous occasion, DAK/DuPont tentatively proposed collecting surface water samples from this ditch. The purpose of the sampling would be to determine the degree of impacts to the ditch, both immediately adjacent to the AST and downstream from the AST. The HWS recommends that DAK/DuPont review the merits of this proposal.

Section 3.2.1
Soil-Gas Survey Procedures

5) The HWS is not familiar with the proposed soil-gas sampling technique, and the capabilities of this investigative tool are not known to the HWS. DAK/DuPont should provide the HWS with the technique's specifications and discuss its ability to characterize a source that could impact groundwater above applicable groundwater standards. If the technique has been used at other DuPont facilities, a case study may be instructive.

6) DAK/DuPont proposed having soil-gas samples analyzed in the field by EPA Method 8260-modified. DAK/DuPont should discuss the advantages and disadvantages of EPA Method 8260-modified when compared to other EPA analytical methods that are designed to quantify the concentration of volatile organic compounds in soil gas.

7) The HWS recommends that DAK/DuPont collect duplicate samples for a percentage of the soil-gas samples collected at the site. The duplicates should be sent to a "conventional" laboratory for analysis.

Section 3.4
Quality Assurance Project Plan (QAPP)

8) In Section 3.0 of the Phase IV work plan, DAK/DuPont states that "analytical methods and detection limits will be detailed in the Quality Assurance Project Plan (QAPP) and that the QAPP will be submitted to the HWS before implementation of the work plan." This statement should be repeated in Section 3.4 of the work plan.

Section 4.3.1
Soil Screening Process

9) The HWS believes it will be necessary to compare analytical results for surface soil to NC Soil Screening Levels (NC SSLs) when the water table is shallow or when subsurface soil data has not been collected. DAK/DuPont should revise Section 4.3.1 to include these situations.

Responses to comments and/or revisions to the Phase IV RFI work plan should be submitted to the HWS within 90 days of the receipt of this letter by DuPont-Corporate Remediation Group. If your office has questions concerning this correspondence, please give me a call at (919) 508-8562.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
NC Hazardous Waste Section

cc: Jon Johnston, US EPA, Region 4
Bobby Nelms
Penny Mahoney, DAK Americas
Larry Stanley

rc: Bud McCarty
Bob Glaser
Karim Pathan
Larry Stanley

NPDES Number: NCD047369046

Facility Name: OAK Americas City: Leland

EVALUATION DATA New: ✓ Change: ___ Delete: ___

	Mo.	Day	Yr.	Type:
Date:	10	28	07	CEI
Date:	__	__	__	___

Inspector ID #: C36 Reason: ___

Evaluation Comments:

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one)

- a SNC (SNY evaluation) _____ Docket # _____

or

- no longer a SNC (SNN eval.) _____

YES / NO CSE ONLY

Waste Involved	Volume	Exposure Media (a, gw, sw, s)	Distance to Residences	Number of People involved	Distance to On-site wells	Distance to Off-site wells

#____ Type:___ ___ ___ Date Determined ___/___/___ Class: __

Priority: ___ Branch:___ ___ Person: ___ ___

Return to Compliance ___/___/___ ___/___/___
Scheduled *Actual*

Reg. Type: ___ ___ Reg. Description:_____

Comment: _____

#____ Type:___ ___ ___ Date Determined:___/___/___ Class: ___

Priority:___ Branch:___ ___ Person:___ ___

Return to Compliance: ___/___/___ ___/___/___
Scheduled *Actual*

Reg. Type: ___ ___ Reg. Description:_____

Comment:_____

From: ROBERT.NELMS@ncmail.net [ROBERT.NELMS@ncmail.net]
Date: Oct 1. 2007 15:37
To: <wprice@dakamericas.com>
Cc:
Subject: RCRA Inspection
Attachments: Example ltrs SQG.doc (52 KB)
DAK Insp 07.doc (38 KB)

Winston,

Attached are the example letters which we spoke of as well as the inspection report from last Friday. Please look over it and reply to this email to confirm your receipt.

I enjoyed our visit.

Bobby Nelms

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPREHENSIVE EVALUATION INSPECTION (CEI) REPORT

1. FACILITY INFORMATION:

Name:	DAK Americas
EPA ID Number:	NCD 047 369 046
Type of Facility:	Large Quantity Generator
Facility Location:	3500 Daniels Road
	Leland, NC 28451
Telephone Number:	(910) 371-4830

OWNERSHIP: DAK Americas

2. FACILITY CONTACT: Winston Price

3. SURVEY PARTICIPANTS: Winston Price, DAK
Bobby Nelms. NCDENR

4. DATE OF INSPECTION: 28 September 2007

5. PURPOSE OF INSPECTION: Unannounced audit to determine compliance with regulations described at 40 CFR 261, 262, 265, 268, 273 and 279.

6. FACILITY DESCRIPTION:
DAK Americas is located on 2200 acres and is bounded by the Cape Fear River on the north and east, SR 1426 on the west, and heavily wooded land on the south. The plant manufactures Terephthalic Acid (TPA) and Dacron polyester fiber. The plant is presently expanding to manufacture resin for the plastics industry. The facility has significantly reduced its hazardous waste generation over the years and has requested to drop their generator status to SQG.

7. HAZARDOUS WASTE
Xylene, Petroleum Distillates – Spray Paint F002, F003
Toluene, MEK – Paint Related Waste F003, F005

8. AREAS OF REVIEW AND INSPECTION :

<	Emergency Preparedness	Contingency Plan
<	Inspection Records (storage)	Manifests / LDR
<	Training Records	Biennial Report

< **Transporters:**

< Safety Kleen TXR 000 050 930

< Freehold Cartage NJD 054 126 164

< **TSD's:**

Safety Kleen KYD 053 348 108

Giant Resource Recovery SCD 036 275 626

< **Accumulation Areas:**

Waste is accumulated at points in the lab and at the paint can puncture area. No violations were noted at accumulation areas.

< **Storage Areas:**

Waste is stored at the waste storage pad located in the main part of the plant. There were five containers of waste in the storage area. There were no container violations noted.

< **External Condition of Facility:** There were no adverse conditions noted.

9. WASTE MINIMIZATION: Best Management Practices (Written Plan)

10. SITE DEFICIENCIES:

No Violations Noted

11. RECOMMENDATIONS:

Complete and mail EPA form 8700-12 to change from a LQG to a SQG.

Robert K. Nelms DATE: 10 Oct 2007

Robert K. Nelms

Waste Management Specialist, NCDENR

Emailed to Facility DATE:

FACILITY CONTACT

From: Winston Price [wprice@dakamericas.com]
Date: Oct 2, 2007 10:19
To: "ROBERT.NELMS@ncmail.net"<ROBERT.NELMS@ncmail.net>
Cc:
Subject: Re: RCRA Inspection
Attachments: Example ltrs SQG.doc (71 KB)
DAK Insp 07.doc (52 KB)

Thanks for the report. As in the past, I enjoyed and learned a lot from this visit.

Thanks.

"ROBERT.NELMS@ncmail.net" <ROBERT.NELMS@ncmail.net> 10/01/2007 03:37 PM

To: wprice@dakamericas.com
cc:
Subject: RCRA Inspection

Please respond to "ROBERT.NELMS@ncmail.net" <ROBERT.NELMS@ncmail.net>

Winston,

Attached are the example letters which we spoke of as well as the inspection report from last Friday. Please look over it and reply to this email to confirm your receipt.

I enjoyed our visit.

Bobby Nelms

Memo:

To: File

From: Bobby Neims

Re: DAK Americas HSWA Only Permit
NCD 047 369 046

On 19 September 2007 I met with Larry Stanley, who wrote the facility's permit, to discuss the HSWA only permit that the facility holds. During our discussion, Mr. Stanley stated that the facility had identified SWMU's but it was not necessary to inspect these units or any associated paperwork at this time. My compliance inspection only covers and relates to the requirements of 40 CFR 262.34 as they apply to LQGs of hazardous waste.

EPA ID Number: NCD047369046

Facility Name: DAK Americas City: Leland File

EVALUATION DATA New: ✓ Change: ___ Delete: ___

	Mo.	Day	Yr.	Type:
Date:	7	10	06	CEI
Date:	/	/		

Inspector ID #: 036 Reason: ___

Evaluation Comments:

No Violation Noted

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one)

- a SNC (SNY evaluation) _____ Docket # _____

or

- no longer a SNC (SNN eval.) _____

YES / NO CSE ONLY

Waste Involved	Volume	Exposure Media (a. gw. sw. s)	Distance to Residences	Number of People involved	Distance to On-site wells	Distance to Off-site wells

#____ Type:___ ___ ___ Date Determined ___ ___/___ ___/___ ___ Class: ___

Priority: ___ Branch:___ ___ Person: ___ ___

Return to Compliance ___ ___/___ ___/___ ___ (*Scheduled*) ___ ___/___ ___/___ ___ (*Actual*)

Reg. Type: ___ ___ Reg. Description: _____

Comment: _____

#____ Type:___ ___ ___ Date Determined:___ ___/___ ___/___ ___ Class: ___

Priority:___ Branch:___ ___ Person:___ ___

Return to Compliance: ___ ___/___ ___/___ ___ (*Scheduled*) ___ ___/___ ___/___ ___ (*Actual*)

Reg. Type: ___ ___ Reg. Description: _____

Comment: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPREHENSIVE EVALUATION INSPECTION (CEI) REPORT

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Type of Facility:	Large Quantity Generator
Facility Location:	3500 Daniels Road
	Leland, NC 28451
Telephone Number:	(910) 371-4830

OWNERSHIP: DAK Americas

2. FACILITY CONTACT: Winston Price

3. SURVEY PARTICIPANTS: Winston Price, DAK
Bobby Nelms, NCDENR

4. DATE OF INSPECTION: 10 July 2006

5. PURPOSE OF INSPECTION: Unannounced audit to determine compliance wi
regulations described at 40 CFR 261, 262, 265, 268, 273 and 279.

6. FACILITY DESCRIPTION:
DAK Americas is located on 2200 acres and is bounded by the Cape Fear Rive
north and east, SR 1426 on the west, and heavily wooded land on the south.
manufactures Terephthalic Acid (TPA) and Dacron polyester fiber. The pl
expanding to manufacture resin for the plastics industry.

7. HAZARDOUS WASTE
Xylene, Petroleum Distillates – Spray Paint F002, F003
Toluene, MEK – Paint Related Waste F003, F005

Robert K. Nel
Waste Manage

8. AREAS OF REVIEW AND INSPECTION :

<	Emergency Preparedness	Contingency Plan
<	Inspection Records (storage)	Manifests / LDR
<	Training Records	Biennial Report
<	**Transporters:**	
<	Safety Kleen TXR 000 050 930	
<		
<	**TSD's:**	
	Safety Kleen KYD 053 348 108	

< **Accumulation Areas:**
Waste is accumulated at points in the lab and at the paint can puncture area. No violations were noted at accumulation areas.

< **Storage Areas:**
Waste is stored at the waste storage pad located in the main part of the plant. There were four containers of waste in the storage area. There were no container violations noted.

< **External Condition of Facility:** There were no adverse conditions noted.

WASTE MINIMIZATION: Best Management Practices (Written Plan)

SITE DEFICIENCIES:
No Violations Noted

RECOMMENDATIONS:
Add inspection points to the weekly inspection log as discussed.
Begin using the recommended training record form for hazardous waste employees.

DATE: 17 July 2006
ns
nent Specialist, NCDENR

E-Mailed to Winston Price DATE:
FACILITY CONTACT

From: Winston Price [wprice@dakamericas.com]
Date: Jul 13, 2006 12:13
To: "ROBERT NELMS"<ROBERT.NELMS@ncmail.net>
Cc:
Subject: Re: Inspection Report
Attachments: DAK Insp 06.doc (52 KB)

Thanks for the report.

ROBERT NELMS <ROBERT.NELMS@ncmail.net> 07/13/2006 12:10 PM

To: wprice@dakamericas.com
cc:
Subject: Inspection Report
Please respond to: ROBERT NELMS <ROBERT.NELMS@ncmail.net>

Winston,

Read over this inspection to make sure you agree then send me a confirmation that you received it.

Thank you,
Bobby

(See attached file: DAK Insp 06.doc)

Close Window

From: Winston Price [wprice@dakamericas.com]
Date: Jul 13, 2006 12:06
To: "ROBERT NELMS"<ROBERT.NELMS@ncmail.net>
Cc:
Subject: Re: 268 regs.

Sorry it took so long to get back to you. I have been working almost exclusively on the items from the audit. This includes incoporating the suggestions that you gave me.
There were some D009 and P012 wastes in the lab pack, however, info in ALTERNATIVE TREATMENT STANDARDS OF 268.42(c)addresses excluding the D009 and P012 wastes where alternative treatment methods are used. I have ,however, asked for more info on the handling of the labpack.

ROBERT NELMS <ROBERT.NELMS@ncmail.net>
07/11/2006 10:29 AM

To: wprice@dakamericas.com
cc:
Subject: 268 regs.
Please respond to ROBERT NELMS <ROBERT.NELMS@ncmail.net>

Winston.

Remember that I was telling you about the wastes which were excluded under 268? Here is what it says.

APPENDIX IV TO PART 268 - WASTE EXCLUDED FROM LAB PACKS UNDER THE ALTERNATIVE TREATMENT STANDARDS OF 268.42(c)

Hazardous waste with the following EPA hazardous waste codes may not be placed in lab packs under the alternative lab pack treatment standards of 268.42(c): D009, F019, K003, K004, K005, K006, K062, K071, K100, K106, P010, P011, P012, P076, P078, U134, U151.

Look at the manifest from the lab pack shippment and let me know if any of these waste codes where shipped out. Its not an issue for you, but I am trying to determine if it is common practice for your hauler to be shipping these wastes as lab packs.

Thank you
Bobby

Company Name: OAK Industries
EPA ID Number: NCD 047 369 046
Date: 10 July 2006

Required Records/Document Checklist

The generator must provide and make available, but not limited to, any persons knowledgeable of your HW management program and the following records/documents at the time of inspection:

OK 1. Records of weekly inspection of containers stored in designated Hazardous Waste Storage Areas.

N/A 2. Records of daily inspection of tanks containing hazardous waste. *

N/A 3. Records of weekly inspection of drip pads (and after storms). *

OK 4. Job titles for each position related to hazardous waste management and the name of the employee filling each job.

OK 5. Job description of positions related to hazardous waste management.

OK 6. Written description of type and amount of introductory and continuing training that will be given to each hazardous waste management position.

OK 7. Records of annual or introductory hazardous waste training for each employee managing hazardous waste.

OK 8. Copies of signed hazardous waste manifests.

OK 9. Copy of land ban notification for each hazardous waste transported from facility.

OK 10. Copy of latest facility contingency plan.

OK 11. Copy of latest Biennial Report. *

OK 12. Copy of written, description of or other type of Waste Minimization program/method.

* **If applicable**

I acknowledge or certify that the noted records/documents requested above are required to be maintained at the facility. All records currently available and staff cognizant of these records were made available at the time of the inspection.

Signature: Winston Price
Facility Contact or Representative **Inspection Date** July 10, 2006

EPA ID Number: NCD047369046

File

Facility Name: DAK Americas City: Leland

EVALUATION DATA New: ✓ Change: ___ Delete: ___

	Mo.	Day	Yr.	Type:
Date:	7	20	05	CEI
Date:	7	22	05	CSE

Inspector ID #: 036 Reason: 01

Evaluation Comments: Ticket NOV # 2005-208

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one)

- a SNC (SNY evaluation) _____ Docket # _____

or

- no longer a SNC (SNN eval.) _____

YES / NO CSE ONLY

Waste Involved	Volume	Exposure Media (a, gw, sw, s)	Distance to Residences	Number of People involved	Distance to On-site wells	Distance to Off-site wells

1 Type: GPT Date Determined 07/20/05 Class: II

Priority: ___ Branch: 07 Person: 36

Return to Compliance 08/20/05 (*Scheduled*) 07/22/05 (*Actual*)

Reg. Type: SR Reg. Description: 262.34(c)(1) -265.173(a)

Comment: Failure to close two accumulation containers.

___ Type: ___ Date Determined: ___/___/___ Class: ___

Priority: ___ Branch: ___ Person: ___

Return to Compliance: ___/___/___ (*Scheduled*) ___/___/___ (*Actual*)

Reg. Type: ___ Reg. Description: _____

Comment: _____

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPREHENSIVE EVALUATION INSPECTION (CEI) REPORT

1. **FACILITY INFORMATION:**

Name: DAK Americas
EPA ID Number: NCD 047 369 046
Type of Facility: LQG
Facility Location: 3500 Daniels Rd.
Leland, NC 28451
Telephone Number: (910) 371-~~4673~~ 4830
Ownership: DAK Americas

2. **FACILITY CONTACT:** Winston Price

3. **SURVEY PARTICIPANTS:** Winston Price
Robert K. Nelms - NCDENR

4. **DATE OF INSPECTION:** 20 July 2005

5. **PURPOSE OF INSPECTION:** Unannounced audit to determine compliance with regulations described at 40 CFR 261, 262, 265, 268, 273 and 279.

6. **FACILITY DESCRIPTION:**
DAK Americas is located on 2200 acres and is bounded by the Cape Fear River on the north and east, SR 1426 on the west, and heavily wooded land on the south. The plant manufactures Terephthalic Acid (TPA) and Dacron polyester fiber. The plant is about to expand to manufacture resin for the plastics industry.

7. **HAZARDOUS WASTE STREAMS INCLUDE:**
Xylene, Petroleum Distillates - Spray Paint F002-F003
Toluene, MEK - Paint Related Waste F003, F005
Used Oil + Absorbent

(over)

8. **AREAS OF REVIEW AND INSPECTION:**

- Emergency Preparedness — Contingency Plan
- Inspection Records (storage) — Manifests / LDR
- Training Records — Biennial Report
- **Transporters:**
  Safety Kleen TXR 000 050 930
- **TSD's:**
  Safety Kleen KYD 053 348 108
- **Accumulation Areas:**
  - Monomers QC lab - one open container under the hood.
  - Construction truck shop - open container
  - Staple warehouse - no violations
- **Storage Areas:**
  No waste in storage.
- **External Condition of Facility:** No adverse conditions noted.

9. **WASTE MINIMIZATION:** Written Plan

10. **SITE DEFICIENCIES:**
40 CFR 262.34(c)(1) - 265.173(a) failure to close two accumulation containers. One in the Monomers QC Lab and one in the construction truck shop. (55 gallon container).

11. **RECOMMENDATIONS:**

Robert K. Nelms DATE: 7/20/05
Waste Management Specialist NCDENR

Winston Price DATE: 7-20-05
Facility Representative

Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: DAK Americas, Inc
3500 Daniels Rd.
Leland NC 28451

Docket # 2005-208
Inspection Date: 20 July 2005
Facility Type: CQG

EPA ID# NCD 047 369 046

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

On 20 July, 2005, Robert K. Nelms, representing the N.C. Hazardous Waste Section, inspected your facility for compliance with North Carolina Hazardous Waste Management Rules. During that inspection, the following violations were noted:

Citation	Specifics
40 CFR	262.34(c)(1) - 265.173(a) Failure to close two accumulation containers.

You are hereby required to correct the noted violation(s) by 20 August, 2005.

(over)

You are hereby required to comply with the noted violation(s) by 20 August, 2005, at which time a reinspection will be performed. If compliance with the violation(s) noted above are not met, pursuant to N.C.G.S. 130A-22(a) and 15A NCAC 13B .0701 - .0707, an administrative penalty of up to $25,000.00 per day may be assessed for violation of the hazardous waste law or regulations.

20 July
(Date)

Robert K. Nelms
Waste Management Specialist
Hazardous Waste Section, NCDENR

I, Robert K. Nelms, hereby certify that I have personally served a copy of this Notice on:

Winston Price (Name) at DAK America (Location)

on 20 July, 2005.

Winston Price
(Recipient's Signature)

copies to: RKN
Mike Williford - Eastern Area Compliance Branch Supervisor
Central Files

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPLIANCE SCHEDULE EVALUATION (CSE) REPORT

1. **FACILITY INFORMATION:** **DOCKET #** 2005-208

Name: DAK Americas
EPA ID Number: NCD 047 369 046
Type of Facility: LQG
Facility Location: 3500 Daniels Rd.
Leland, NC 28451
Telephone Number: (910) 371-4830

2. **FACILITY CONTACT:** Winston Price

3. **SURVEY PARTICIPANTS:** Winston Price, James Hines
Robert K. Nelms - NCDENR

4. **DATE OF EVALUATION:** 22 July 2005

5. **PURPOSE OF EVALUATION:** Follow-up inspection to determine the status of the compliance schedule given in the Notice of Violation, Docket # 2005-208. The NOV was issued subsequent to the RCRA inspection conducted on 20 July 2005.

6. **FACILITY DESCRIPTION:** REFER TO PREVIOUS INSPECTION.

HAZARDOUS WASTE STREAMS INCLUDE: REFER TO PREVIOUS INSPECTION.

7. **AREAS RE-INSPECTED DURING EVALUATION:**
(OK = previous deficiency corrected; V = violation observed; NA = not applicable to this inspection)

N/A Contingency Plan

N/A Personnel Training Records

OK Accumulation Areas

N/A Storage Areas

N/A Inspection Logs

N/A Manifests

N/A OTHER

(over)

8. **PREVIOUS VIOLATIONS / DEFICIENCIES:**
Violation(s) previously cited pertained to the following regulation(s):

40 CFR
262.34(c)(1) - 265.173(a)

40 CFR

40 CFR

40 CFR

9. **CONCLUSION(s):**

DAK Americas is in compliance with the requirements of NOV docket # 2005-208

Robert K. Nelms DATE: 7/22/05
Robert K. Nelms
Waste Management Specialist, NCDENR

Winston Price DATE: 7-22-05
Facility Representative

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

March 23, 2007

Mr. Kevin P. Garon
Project Director
DuPont-Corporate Remediation Group
6324 Fairview Road
Charlotte, NC 28210

Re: RCRA 2020 Corrective Action Universe
DAK/DuPont-Cape Fear Facility
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Garon:

The North Carolina Hazardous Waste Section (Section) and the U.S. Environmental Protection Agency (U.S. EPA) have compiled a list of all facilities deemed appropriate and important to address using the Resource Conservation and Recovery Act's (RCRA) Corrective Action Program. Because this set of 3,880 facilities has national remediation goals which will culminate in the year 2020, it is referred to as the 2020 Corrective Action Universe. **Your facility is part of this 2020 Universe.** As a result, the Section and U.S. EPA expect that a final remedy will be in place (i.e., remedy construction completed) at your facility by 2020 (although actual attainment of cleanup goals through remedy implementation may take a while longer). If we haven't already done so, we will be working with you to develop a plan and a schedule that achieves this goal before 2020.

Your facility has been included in the 2020 Universe because either:

- It already belongs to the 2008 Corrective Action Baseline,
- It has a RCRA permit obligation, or
- The North Carolina Hazardous Waste Section and U.S. EPA agreed that it needs cleanup under the RCRA Corrective Action Program

Inclusion on this list does not imply failure on your part to meet any legal obligation, nor should it be construed as an adverse action against you. It only means that the Section and U.S. EPA has identified your facility—and every other facility in the 2020 Universe—as needing to complete RCRA Corrective Action. Our national program goal is to largely address these cleanup obligations before the end of 2020. Accordingly, progress will be measured for each facility in the 2020 Universe. The list of facilities will be posted on the U.S. EPA's web site at http://www.epa.gov/correctiveaction on April 16, 2007.

The Section and U.S. EPA will work to address remediation concerns at your facility in a manner consistent with your plans for the property. If you believe that facility-wide corrective actions are already complete for your site, please notify Larry Stanley of the Section.

Please contact Larry Stanley at (919) 508-8562 if you have further questions regarding this letter.

Sincerely,

Bud McCarty, Head
Facility Management Branch
NC Hazardous Waste Section

cc: Bobby Nelms
Penny Mahoney (DAK Americas)
Larry Stanley

rc: Bob Glaser
Larry Stanley

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

April 2, 2007

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kevin P. Garon
Project Director
DuPont Corporate Remediation Group
6324 Fairview Road
Charlotte, North Carolina 28210

Re: Hazardous Waste Management Permit
Issuance of Draft Permit
EPA ID # NCD 047 369 046

Dear Mr. Garon:

Enclosed is the Hazardous Waste Management Draft Renewal Permit for DAK Americas/ DuPont. Also enclosed are the Public Notice for the Draft Renewal Permit and the Fact Sheet describing operations at DAK Americas/ DuPont.

As stated in the Public Notice, the public comment period for the Draft Renewal Permit will begin on April 2, 2007 and will end May 16, 2007. The public hearing will be held May 2, 2007 at 11:00 AM in the Leland Town Hall. Any comments that are received during the public comment period will be considered and, if appropriate, incorporated into the Permit Conditions. A decision regarding this renewal permit will be made after all the public comments have been addressed.

If you have any questions, please contact Larry Stanley at (919) 508-8562.

Sincerely,

Elizabeth W. Cannon

Elizabeth W. Cannon, Chief
Hazardous Waste Section

Enclosures

cc: Jon D. Johnston, US EPA, Region 4
Ted Bush, DWQ
Winston Price, DAK Americas
Bobby Nelms
Marti K. Lawing, Brunswick County Manager
Donald Yousey, Brunswick County Health Director

rc: Bud McCarty
Bob Glaser
Vance Jackson
Larry Stanley
Karim Pathan

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-508-8400 \ FAX 919-715-4061 \ Internet http://wastenotnc.org

C:\mel\akp\dal

FACT SHEET

Facility Location

DAK/DuPont-Cape Fear Plant
State Road 1426
Leland, NC 28451

Regulatory Authority

Under authority of the Federal Resource Conservation and Recovery Act (RCRA), a Draft Renewal Permit has been prepared that requires DAK/DuPont-Cape Fear to conduct corrective action activities at the facility indicated above. North Carolina has been authorized by the United States Environmental Protection Agency to administer RCRA, including the Hazardous and Solid Waste Amendments (HSWA) of 1984. The State has determined that DAK/DuPont's proposed activities, as identified in the permit application, satisfy the full intent of the North Carolina Hazardous Waste Management Rules and Solid Waste Management Act as amended. This renewal permit is issued by the State of North Carolina and constitutes a complete permit under the Resource Conservation and Recovery Act.

Facility Summary

The DAK/DuPont-Cape Fear facility is located on State Road No. 1426 near the northeastern boundary of Brunswick County. It is approximately six miles north of Leland, North Carolina and approximately 15 miles northwest of Wilmington, North Carolina. The facility is adjacent to the Cape Fear River, which runs along the northern and eastern limits of the facility property.

The DAK plant began operations in 1968 and continues to manufacture polyester resin and fibers. In addition, terephthalic acid (TPA) and dimethylterephthalate (DMT) intermediates were produced on-site for use in polyester production. Polyester production is accomplished using TPA and ethylene glycol as the two main ingredients. In the process, the two compounds are combined at a temperature exceeding 400 degrees Fahrenheit to form a liquid. The hot liquid is pumped through a series of vessels where the formation of a polymer occurs. The liquid polymer is then fed through plates with very small holes and immediately cooled with air into the solid fiber form. The fibers are wound onto bobbins or placed in bulk form into bales for shipment to customer textile mills.

The plant generates, or has generated, the following wastes: 1) process, non-process and sanitary waste waters and storm water runoff; 2) trade wastes facility sludge; 3) laboratory wastes; 4) subsurface collection system wastes; 5) finish oils; 6) spent triethylene glycol; 7) waste terephthalic acid; 8) waste *Dowtherm®*; 9) waste motor oil, antifreeze, and waste lubricating oils; 10) spent acidic and caustic solutions; 11) power plant ash; 12) non-hazardous refuse; 13) incinerator residues; 14) waste from contractor operations (maintenance and construction); and 15) miscellaneous wastes. Miscellaneous wastes include contaminated glycol, waste monomer, solvents, waste regenerate from ion exchange columns, wastes generated during fire training exercises, wastes resulting from drum cleaning

activities, waste water stored in an organic stripping column tank, wastes generated at an oil de-watering area, and low-level radioactive wastes.

At one time, much of the wastes generated by plant operations were disposed of on-site in pits, trenches, and landfills. These disposal units are located between the plant buildings and the Cape Fear River and have been identified as Solid Waste Management Units (SWMUs) under the RCRA Corrective Action Program.

In 2001, the manufacturing plant was sold to DAK Americas, LLC. DuPont retained ownership of outlying areas, including most waste disposal units. Wetland acreage has been placed in a conservation easement overseen by the NC Coastal Land Trust.

Regulatory History and Corrective Action Status

In 1989, a RCRA Hazardous Waste Management Permit was issued to the DuPont-Cape Fear plant for the operation of a hazardous waste storage pad. Prior to selling a business interest in the facility to DAK Americas, DuPont applied to renew their operating permit. After the sale, DAK elected to move to its own less than 90-day drum storage pad, and DuPont decided to close the permitted storage unit. DuPont's hazardous waste storage pad was clean closed in 2004.

DAK and DuPont submitted a HSWA-only permit application in 2004. This permit application lists seventy-six SWMUs and six Areas of Concern (AOCs). The draft renewal permit designates eight of these units as requiring RCRA Facility Investigation (RFI) activities. The draft renewal permit also indicates that a Corrective Measures Study is required for an additional seven RCRA units.

Phase I of the RFI was performed to address the five SWMUs designated by the 1989 permit as requiring investigation. Both soil and groundwater samples were collected at these units. Following Phase I of the RFI, additional SWMUs were added to the list of units requiring investigation. The units were investigated as part of Phase II of the RFI. Phase II, which was completed in 2001, included a lithologic investigation, soil sampling, monitoring well installations, and site-wide groundwater monitoring. As part of Phase II RFI activities, DuPont prioritized all SWMUs and AOCs based on the potential risks posed by a release from each unit. Phase III of the RFI was completed in 2004. Its objectives were to fill data gaps identified during Phase II investigations, investigate units brought forward from a Baseline Environmental Site Assessment conducted by DAK Americas and a SWMU prioritization project, complete data collections necessary to achieve Environmental Indicator goals, and establish a site-wide groundwater monitoring program. In 2006 the facility proposed Phase IV of the RFI.

DuPont has conducted several voluntary environmental investigations. These investigations include the 1994 sump investigation at SWMU 1B, the 1995 investigations at SWMUs 2 and 12, and the 1997 parazylene release investigation at AOC A. The results of these investigations were reported to the NC Hazardous Waste Section and included in later RFI work plans and reports. (Interim remedial measures were implemented to address impacts to surface soil at AOC A.) In addition, DAK Americas performed a Baseline Environmental Site Assessment prior to their purchase of the Cape Fear property. SWMUs 53, 54, and 59 are landfills permitted through the NC Solid

Waste Section. A groundwater monitoring program for each of these units is required through the Solid Waste Section's permits.

Several RCRA units have released chemical constituents to the environment. Constituents with concentrations that exceed applicable groundwater standards include 1,4-dioxane, benzene, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, vinyl chloride, diphenyl ether, triethylene glycol, arsenic, lead, naphthalene, biphenyl, ethylene glycol, and cobalt. A similar list of constituents has been detected in soil. Surface water samples collected on the DAK/DuPont property indicate lead, arsenic, cobalt, vanadium, and copper exceed surface water standards. Indoor air sampling and modeling indicate that vapor intrusion is not an issue at the facility. (An Environmental Indicator evaluation completed in 2005 demonstrated that "human exposures are under control" and that the "migration of contaminated groundwater is under control.") Impacts to environmental media that exceed appropriate standards will be further addressed through a Corrective Measures Study and Corrective Measures Implementation.

Public Participation in the Permit Renewal Process

The North Carolina Hazardous Waste Management Rules require that the public be given a forty-five (45) day period to comment on the draft renewal permit. This forty-five (45) day period will commence on April 2, 2007. The draft renewal permit is available for review from 9:00 a.m. to 4:00 p.m., Monday through Friday. All permit renewal information submitted by DAK/DuPont-Cape Fear is part of the administrative record and is available for review. Persons wishing to comment on this draft renewal permit or to object to permit issuance should submit such comments in writing prior to the close of business on May 16, 2007. All comments received within the forty-five (45) day period will be considered before the final permit decision is made. Comments should be sent to:

Ms. Elizabeth W. Cannon, Chief
North Carolina Hazardous Waste Section
Mail Service Center 1646
Raleigh, NC 27699-1646

A public hearing to receive comments concerning the issuance of the proposed renewal permit will be held on May 2, 2007 at 11:00 AM in the Leland Town Hall. The Leland Town Hall is located at 102 Town Hall Drive, Leland, North Carolina. Attendees may submit a written statement for the official record in addition to their oral statement, or they may submit written comments in lieu of making an oral presentation. Everyone who makes oral and/or written comments will receive a notice, along with the written response to your comments, when the Hazardous Waste Section makes a decision regarding the renewal permit.

PUBLIC NOTICE

PUBLIC HEARING FOR DRAFT HAZARDOUS WASTE RENEWAL PERMIT
FOR DAK AMERICAS/ DUPONT, CAPE FEAR FACILITY

This is to notify the public of the issuance by the North Carolina Hazardous Waste Section of a draft renewal permit for DAK Americas and DuPont, Cape Fear facility located at State Road 1426, Leland, North Carolina.

A Public Hearing will be held May 2, 2007 at 11:00 am in the Leland Town Hall located at 102 Town Hall Drive in Leland, North Carolina. All attendees will have the opportunity to present an oral statement up to five minutes in length regarding the draft renewal permit and/or to submit written comments and data.

In conjunction with the issuance of the draft permit, written comments can also be sent during the public comment period of April 2, 2007-May 16, 2007 to the following address:

Elizabeth W. Cannon, Section Chief
North Carolina Hazardous Waste Section
MSC 1646
401 Oberlin Rd.-Suite 150
Raleigh, NC 27699-1646

All data submitted by the applicant is part of the administrative record and available for your review Monday through Friday during office hours (9:00 a.m. to 4:00 p.m.). Copies of the renewal permit application, the draft renewal permit, and a fact sheet are available at the Hazardous Waste Section office located at 401 Oberlin Road, Suite 150 in Raleigh, North Carolina. Call (919) 508-8564 for an appointment.

The DAK/DuPont facility manufactures polyester resin and fibers. Soil and groundwater at the site have been impacted by manufacturing and waste disposal practices. The renewal permit requires the facility to continue corrective action activities at solid waste management units and areas of concern that have released to the environment. The renewal permit also requires the facility to demonstrate financial assurance that is adequate for the completion of future corrective action activities. The renewal permit insures that corrective action activities are conducted in accordance with applicable NC Hazardous Waste Management Rules.

All comments received during the public comment period or at the hearing will be considered in the decision regarding this renewal permit. Comments received after the public comment period ends will not be considered. The statutory authority for calling the permit hearing is G.S. 130A-294(f). Applicable State rules are found in the North Carolina Hazardous Waste Management Rules 15A NCAC 13A .0105, .0109, and .0113. These rules adopt the requirements of the Federal Resource Conservation and Recovery Act as amended by the Hazardous and Solid Waste Amendments of 1984.

Anyone desiring additional information may contact Larry Stanley at

North Carolina Hazardous Waste Section
MSC 1646
401 Oberlin Rd., Suite 150
Raleigh, NC 27699-1646

or call (919) 508-8562. NC DENR will provide auxiliary aids and services for disabled persons who wish to participate in this public hearing to comply with the Americans with Disabilities Act. To receive special services, please contact Larry Stanley at the address and phone number above as early as possible, so arrangements can be made.

I.D. NUMBER NCD 047 369 046 DATE ISSUED .....
PERMIT NO. NCD 047 369 046 R1

Hazardous Waste Management Permit

Permittee:	DAK Americas, LLC, and State Road 1426 Leland, NC 28451	E.I. DuPont de Nemours & Company State Road 1426 Leland, NC 28451
Owner:	DAK Americas, LLC, and P.O. Box 2042 Wilmington, NC 28402	E.I. DuPont de Nemours & Company 6324 Fairview Road Charlotte, NC 28210

Pursuant to the 15A NCAC 13A North Carolina Hazardous Waste Management Rules, a Hazardous and Solid Waste Amendments (HWSA) permit is issued to the DAK America, LLC, and E.I. DuPont de Nemours & Company, a hazardous waste facility located in the Cape Fear River Basin in Leland, Brunswick County on State Road 1426, at latitude 34° 19' 00" N and longitude 78° 02' 30" W.

The Permittee must comply with all terms and conditions of the permit. This permit consists of the conditions discussed in Parts I, II, III IV, V and VI, the applicable regulations contained in 15A NCAC 13A including the applicable provisions of 40 CFR Parts 260 through 264, 266, 268, 270 and 124, statutory requirements of N.C.G.S. 130A-Article 9 (Solid Waste Management Act as amended) and the attached Application.

Applicable regulations are those which are in effect on the date of issuance of this permit [40 CFR 270.32(c) as adopted in 15A NCAC 13A.0113] and are attached.

This permit is based on the assumption that the information submitted in the permit application and as modified by subsequent amendments (hereafter referred to as the Attachment) is accurate and that the facility will be operated as specified in the Attachment. Any inaccuracies found in this information could lead to the termination or modification of this permit and potential enforcement action [40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0113]. The Permittee shall inform the North Carolina Department of Environment and Natural Resources of any deviation from or changes in the information in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit is effective as of ....., and shall remain in effect for ten (10) years until ....., [40 CFR 270.50 as adopted in 15A NCAC 13A .0113] unless revoked and reissued, terminated or continued in accordance with 40 CFR 270.51 as adopted in 15A NCAC 13A .0113.

Elizabeth W. Cannon, Chief
NC Hazardous Waste Section

Date

The State of North Carolina
Department of Environment and Natural Resources
Division of Waste Management
Hazardous Waste Section

NCDENR
NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

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PART OF PERMIT	TOPIC
PART I	Standard Conditions
PART II	Corrective Action for Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs)
PART III	Waste Minimization
PART IV	Land Disposal Restrictions
PART V	Organic Air Emissions Requirements for Process Vents and Equipment Leaks
PART VI	RCRA Organic Air Emission Requirements

APPENDICES TO THE PERMIT

Appendix A	Solid Waste Management Units and Areas of Concern Summary
Appendix B	RCRA Facility Investigation (RFI) Workplan Outline
Appendix C	Corrective Measure Study (CMS) Plan Outline
Appendix D	Schedule of Compliance

Attachments

DAK/ DuPont Hazardous Waste Part B Application

Section	Topic
	PART A APPLICATION
SECTION B	FACILITY DESCRIPTION
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PART K	CERTIFICATION
PART L	INFORMATION REQUIRED FOR SOLID WASTE MANAGEMENT UNITS

Regulations

15A NCAC 13A	February 6 2007 Certification

PART I - STANDARD CONDITIONS

A. EFFECT OF PERMIT

Compliance with this permit constitutes compliance, for purposes of enforcement, with the N.C. Hazardous Waste Management Rules (15A NCAC 13A) and N.C.G.S. 130A-Article 9 (Solid Waste Management Act as amended). Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under any law governing protection of public health or the environment for any imminent and substantial endangerment to human health or the environment.

B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0113. The filing of a request for a permit modification, revocation and re-issuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. DUTIES AND REQUIREMENTS

1. Duty to Comply. The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued under 40 CFR 270.61 as adopted in 15A NCAC 13A .0113. Any permit noncompliance constitutes a violation of N. C. Hazardous Waste Management Rules and N.C.G.S. 130A-Article 9 (Solid Waste Management Act as amended) and is grounds for enforcement action, permit termination, revocation and re-issuance, modification, or for denial of a permit renewal application.

2. Duty to Reapply. If the Permittee will continue an activity allowed or required by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least 180 days before this permit expires.

3. Obligation for Corrective Action. Owners and operators of hazardous waste management units must have a permit during the active life of the unit and for any period necessary to comply with the corrective action requirements of this permit.

4. Permit Expiration. This permit and all conditions therein will remain in effect beyond the permit's expiration date and until a decision is made concerning issuance of a new permit if the Permittee has submitted

a complete application at least 180 days before the expiration of the permit (see 40 CFR 270.14-270.29 and 270.10 as adopted in 15A NCAC 13A .0113) and through no fault of the Permittee, the Secretary of the Department of Environment and Natural Resources or his designee (hereafter referred to as the Department) has not issued a new permit as set forth in 40 CFR 124.15 as adopted in 15A NCAC 13A .0105.

5. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. Duty to Mitigate. The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

7. Proper Operation and Maintenance. The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control, monitoring and remediation (and related appurtenances) used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of the permit.

8. Duty to Provide Information. The Permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

9. Inspection and Entry. The Permittee shall allow the Department or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

   a. Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the N. C. Hazardous Waste Management Rules, any substances or parameters at any location.

10. Monitoring and Records.

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261 as adopted in 15A NCAC 13A .0106 or an equivalent method approved by the Department. Laboratory methods must be those specified in the most recent edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, or an equivalent method approved by the Department.

b. The Permittee shall retain records of all monitoring information required under the terms of this permit (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), records of all data used to prepare documents required by this permit, copies of all reports and records required by this permit, the certification required by 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109, and records of all data used to complete the application for this permit for a period of at least three (3) years from the date of the sample, measurement, report or record, or until corrective action is completed, whichever date is later. As a generator of hazardous waste, the Permittee shall retain on-site a copy of all notices, certifications, demonstrations, waste analysis data, and other documents produced pursuant to 40 CFR 268 as adopted in 15A NCAC 13A .0112 for at least three (3) years from the date that the waste which is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal, or until corrective action is completed, whichever date is later. These periods may be extended by request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

c. Records of monitoring information shall include:

i. The date, exact place, and time of sampling or measurements;
ii. The individual(s) who performed the sampling or measurements;
iii. The date(s) analyses were performed;
iv. The individual(s) who performed the analyses;
v. The analytical techniques or methods used; and
vi. The results of such analyses.

11. Reporting Planned Changes. The Permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility, including alterations or additions which may impact any Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), or the areas contaminated by them, including voluntary corrective measures to the SWMUs or AOCs listed in Appendix A at the permitted facility as defined in 40 CFR 270.2 as adopted in 15A NCAC 13A .0113.

12. Anticipated Noncompliance. The Permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

13. Transfer of Permits. This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 40 CFR 270.40, 270.41 and 270.42 as adopted in 15A NCAC 13A .0113. Before transferring ownership or operation of the facility, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR 264 as adopted in 15A NCAC 13A .0109 and 40 CFR 270 as adopted in 15A NCAC 13A .0113, HSWA and this permit.

14. Compliance Schedules. Written notification of compliance or noncompliance with any item identified in the compliance schedule of this permit shall be submitted according to the schedule date. If the Permittee does not notify the Department within fourteen (14) calendar days of its compliance or noncompliance with the schedule, the Permittee shall be subject to enforcement action. Submittal of a required item according to the schedule constitutes notification of compliance.

15. Twenty-four Hour Reporting. The Permittee shall report to the Department any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

    a. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

    b. Any information of a release or discharge of hazardous waste, or of a fire or explosion from the facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:

        i. Name, address, and telephone number of the owner or operator;
        ii. Name, address, and telephone number of the facility;
        iii. Date, time, and type of incident;
        iv. Name and quantity of material(s) involved;
        v. The extent of injuries, if any;
        vi. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
        vii. Estimated quantity and disposition of recovered material that resulted from the incident.

    A written submission shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times), and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Permittee need not comply with the five-day written notice requirement if the Department waives that requirement and the Permittee submits a written report within fifteen (15) days of the time the Permittee becomes aware of the circumstances.

16. Other Noncompliance. The Permittee shall report all other instances of noncompliance not otherwise required to be reported at the time monitoring reports are submitted. The reports shall contain the information listed in Condition I.D.15.

17. Other Information. When the Permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Department, the Permittee shall promptly submit such facts or information.

E. SIGNATORY REQUIREMENTS

All reports or other information requested by the Department shall be signed and certified according to 40 CFR 270.11 as adopted in 15A NCAC 13A .0113.

F. BIENNIAL REPORT

If required because of the Permittee's waste generation status the Permittee shall prepare and submit a biennial report by March 1 of each even numbered year in accordance with 40 CFR 264.75 as adopted in 15A NCAC 13A .0109. The biennial report must be submitted on EPA form 8700-13 A/B. The report must cover facility activities during the previous calendar year.

G. DEFINITIONS

For purposes of this permit, terms used herein shall have the same meaning as those in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law unless this permit specifically provides otherwise; where terms are not defined in 15A NCAC 13A, G.S. 130A - Article 9, the permit, or United States Environmental Protection Agency guidance documents and publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

H. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR 270.12 as adopted in 15A NCAC 13A .0113.

I. APPROVAL/DISAPPROVAL OF SUBMITTALS

The Department will review the work plans, reports, schedules, and other documents ("submittals") which require the Department's approval in accordance with the conditions of this permit. The Department will notify the Permittee in writing of any submittal that is disapproved, and the basis therefore. Condition I.J. shall apply only to submittals that have been disapproved and revised by the Department, or have been disapproved by the Department, then revised and resubmitted by the Permittee, and again disapproved by the Department.

J. DISPUTE RESOLUTION

Notwithstanding any other provisions in this permit, in the event the Permittee disagrees, in whole or in part, with the Department's revision of a

submittal or disapproval of any revised submittal required by the permit, the following may, at the Permittee's discretion, apply:

1. In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Department in writing within thirty (30) days of receipt of the Department's revision of a submittal or disapproval of a revised submittal. Such notice shall set forth the specific matters in dispute, the position the Permittee asserts should be adopted as consistent with the requirements of the permit, the basis for the Permittee's position, and any matters considered necessary for the Department's determination.

2. The Department and the Permittee shall have an additional thirty (30) days from the Department's receipt of the notification provided for in Condition I.J.1. to meet or confer to resolve any disagreement.

3. In the event an agreement is reached, the Permittee shall submit the revised submittal and implement the same in accordance with and within the time frame specified in such agreement.

4. If agreement is not reached within the thirty (30) day period, the Department will notify the Permittee in writing of his/her decision on the dispute, and the Permittee shall comply with the terms and conditions of the Department's decision in the dispute. For the purposes of this provision in this permit, the responsibility for making this decision shall not be delegated below the Chief of the Hazardous Waste Section.

   Invoking any of the dispute resolution procedures of this section does not preclude the Permittee from exercising any of its other rights to petition for a contested case hearing or appeal in accordance with N.C. General Statute 150B. Nor does invoking any of the dispute resolution procedures of this section extend or delay the time periods in which the Permittee must exercise any of those other rights to petition or appeal.

5. With the exception of those conditions under dispute, the Permittee shall proceed to take any action required by those portions of the submission and of the permit that the Department determines are not affected by the dispute.

K. Special Conditions.

1. When a discrepancy exists between the wording of an item in the Application and this permit, the permit requirements take precedence over the Application.

2. When a discrepancy exists between the RCRA Facility Assessment (RFA) report (attached as part of the permit) and this permit as to the future requirements to be taken at the facility, the permit requirements take precedence over the requirements proposed in the RFA report.

PART II - CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS (SWMUs) AND AREAS OF CONCERN (AOCs)

A. APPLICABILITY

The Conditions of this Part apply to:

1. The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Appendix A of the permit, which require a RCRA Facility Investigation (RFI). Unit locations are shown on Figure 1, which is also located in Appendix A of the permit.

2. The SWMUs and AOCs identified in Appendix A which require no further investigation at this time.

3. The SWMUs and AOCs identified in Appendix A which require confirmatory sampling. Unit locations are shown on Figure 1, which is also located in Appendix A of the permit.

4. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means.

5. Contamination beyond the facility boundary, if necessary. The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Department that, despite the Permittee's best efforts, as determined by the Department, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for completion of such off-site corrective action will be required.

6. The SWMUs and AOCs identified in Appendix A which require a Corrective Measures Study (CMS).

B. DEFINITIONS

For purposes of this Part, the following definitions shall be applicable:

1. The term "area of concern" (AOC) includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Department to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005 (c)(3) of the Resource Conservation and Recovery Act and 40 CFR 270.32 (b)(2) as adopted in 15A NCAC 13A .0113 in order to insure adequate protection of human health and the environment.

2. Corrective Action shall be defined as all activities including activities conducted beyond the facility boundary, that are proposed or

implemented to facilitate assessment, monitoring, and active or passive remediation of releases of hazardous waste or hazardous constituents to soil, groundwater, surface water, or the atmosphere associated with Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), and/or Areas of Concern (AOCs) located at the facility or off-site, as required by 40 CFR 264.100 and 264.101 and adopted in 15A NCAC 13A .0109 or as otherwise required and specified by this permit.

3. A "Corrective Action Management Unit" (CAMU) includes any area within a facility that is designated by the Department under part 264 Subpart S, for the purpose of implementing corrective action requirements under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and RCRA section 3008(h). A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.

4. "Corrective measures" include all corrective action necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any area of concern or solid waste management unit at the facility, regardless of the time at which waste was placed in the unit, as required under 40 CFR 264.101 as adopted by 15A NCAC 13A .0109. Corrective measures may address releases to air, soils, surface water or ground water.

5. "Extent of contamination" is defined as the horizontal and vertical area in which the concentrations of the hazardous constituents in the environmental media are above detection limits or background concentrations indicative of the region, whichever is appropriate as determined by the Department.

6. "Facility" includes all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g. one or more landfills, surface impoundments, or combination of them). For the purposes of implementing corrective action under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109, a facility includes all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

7. A "hazardous constituent" for the purposes of this Part are those substances listed in 40 CFR Part 261 Appendix VIII as adopted in 15A NCAC 13A .0106 or 40 CFR 264 Appendix IX as adopted in 15A NCAC 13A .0109.

8. "Interim Measures" are actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented.

9. The term "land disposal" means placement in or on the land except for a CAMU and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

10. "Landfill" includes any disposal facility or part of a facility where waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

11. A "release" for purposes of this Part includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

12. "Remediation waste" includes all solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of implementing corrective action requirements under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and RCRA section 3008 (h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA sections 3004 (v) or 3008 (h) for releases beyond the facility boundary.

13. The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

14. A "solid waste management unit" (SWMU) for the purposes of this Part includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. Solid Waste Management Units include areas which have become contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g., product or process spills).

15. A "Temporary Unit" (TU) includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during specific remediation activities. Designated by the Department, such units must conform to specific standards, and may only be in operation for a period of time as specified in this permit.

16. A "unit" for the purposes of this Part includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, waste water treatment unit, elementary neutralization unit, transfer station, or recycling unit.

C. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

1. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any additional SWMUs as discovered under Condition II.A.4.

2. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any Areas of Concern (AOCs) as discovered under Condition II.A.4. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). If the Department determines that further investigation of an AOC is required, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1. or Condition II.F.1.

3. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Condition II.C.1. At a minimum, the SAR shall provide the following information:

   a. Location of unit(s) on a topographic map of appropriate scale such as required under 40 CFR 270.14(b)(19), as adopted in 15A NCAC 13A .0113.

   b. Designation of type and function of unit(s).

   c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

   d. Dates that the unit(s) was operated.

   e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the waste.

   f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include ground-water data, soil analyses, air, and/or surface water data).

4. Based on the data in the SAR, the Department shall determine the need for further investigations at the SWMUs covered in the SAR. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1. or Condition II.F.1.

D. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUs AND AOCs

1. The Permittee shall notify the Department in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of ground-water monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Condition II.A.2. or SWMUs or AOCs

identified in Condition II.A.4.for which further investigation under Condition II.C.4. was not required.

2. If the Department determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.F.1.b.

E. CONFIRMATORY SAMPLING (CS)

1. The Permittee shall prepare and submit to the Department, within forty-five (45) calendar days of notification by the Department, a Confirmatory Sampling (CS) Workplan to determine any release from SWMUs and AOCs identified in Condition II.A.4. or Appendix A. The CS Workplan shall include schedules of implementation and completion of specific actions necessary to determine a release. It should also address applicable requirements and affected media.

2. The CS Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the CS Workplan schedule in the letter approving the CS Workplan. If the Department disapproves the CS Workplan, the Department shall either (1) notify the Permittee in writing of the CS Workplan's deficiencies and specify a due date for submission of a revised CS Workplan, or (2) revise the CS Workplan and notify the Permittee of the revisions, or (3) conditionally approve the CS work plan and notify the Permittee of the conditions.

3. The Permittee shall implement the confirmatory sampling in accordance with the approved CS Workplan.

4. The Permittee shall prepare and submit to the Department in accordance with the approved schedule, a Confirmatory Sampling (CS) Report, within sixty (60) calendar days after approval of the CS Workplan, identifying those SWMUs and AOCs described in Condition II.A.4. or listed in Appendix A, that have released hazardous waste or hazardous constituents into the environment. The CS Report shall include all data, including raw data and a summary and analysis of the data, that supports the above determination.

5. Based on the results of the CS Report, the Department shall determine the need for further investigations at the SWMUs and AOCs covered in the CS Report. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.F.1.b. The Department will notify the Permittee of any "no further action" decision.

F. RCRA FACILITY INVESTIGATION (RFI)

1. RFI Workplan(s)

a. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of the approval of the Confirmatory Sampling Report, a RCRA Facility Investigation (RFI) Workplan for those units identified in Condition II.A.1. This Workplan shall be developed to meet the requirements of Condition II.F.1.c.

b. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of notification by the Department, an RFI Workplan for those units identified under Condition II.C.4., Condition II.D.2. or Condition II.E.5. This RFI Workplan(s) shall be developed to meet the requirements of Condition II.F.1.c.

c. The RFI Workplan(s) shall meet the requirements of Appendix B at a minimum. The Workplan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases and the potential pathways of contaminant releases to the air, land, surface water, and ground water. The Permittee must provide sufficient justification and/or documentation that a release is not probable if a unit or a media/pathway associated with a unit (ground water, surface water, soil, subsurface gas, or air) is not included in the RFI Workplan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Department. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix B. Such omissions or deviations are subject to the approval of the Department. The RFI Workplan may be phased to allow for subsequent investigatory activity to be contingent upon the initial phase findings. If the scope of the Workplan(s) is designed to be an initial phase, the initial phase must summarize all potential final phase activities needed to meet the requirements of this condition. In addition, the scope of the RFI Workplan(s) shall include all investigations necessary to ensure compliance with 40 CFR 264.101(c) as adopted in 15A NCAC 13A .0109.

d. The RFI Workplan(s) must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the RFI Workplan schedule in the letter approving the RFI Workplan(s). If the Department disapproves the RFI Workplan(s), the Department shall either (1) notify the Permittee in writing of the RFI Workplan's deficiencies and specify a due date for submission of a revised RFI Workplan, or (2) revise the RFI Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Workplan, or (3) conditionally approve the RFI work plan and notify the Permittee of the conditions.

2. RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Workplan(s) and Appendix B. The Permittee shall notify the Department twenty (20) days prior to any sampling activity.

3. RFI Reports

a. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Department with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the start date specified by the Department in the RFI Workplan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the RFI completed;

ii. Summaries of findings;

iii. Summaries of any deviations from the approved RFI Workplan during the reporting period;

iv. Summaries of any significant contacts with local community public interest groups or state government;

v. Summaries of any problems or potential problems encountered during the reporting period;

vi. Actions taken to rectify problems;

vii. Changes to relevant personnel;

viii. Projected work for the next reporting period; and

ix. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

b. The Permittee shall prepare and submit to the Department Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the Workplan(s) submitted under Condition II.F.1. The Draft RFI Report(s) shall be submitted to the Department for review in accordance with the schedule in the approved RFI Workplan(s). The Final RFI Report(s) shall be submitted to the Department within thirty (30) calendar days of receipt of the Department's comments on the Draft RFI Report. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, and a description of actual or potential receptors. The Report(s) shall also describe the extent of contamination (qualitative/ quantitative) in relation to background levels indicative of the area. If the Draft RFI Report is a summary of the initial phase investigatory work, the report shall include a workplan for the final phase investigatory actions required based on the initial findings. Approval of the final phase workplan shall be carried out in accordance with Condition II.F.1.d. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

c. The Department will review the Final RFI Report(s) and notify the Permittee of the need for further investigative action and/or the need for a Corrective Measures Study to meet the requirements of Condition II.H., Appendix C and 40 CFR 264.101 as adopted in 15A NCAC 13A .0109. The Department will notify the Permittee of any "no further action" decision. Any further investigative action required by the Department shall be prepared and submitted in

accordance with a schedule specified by the Department and approved in accordance with Condition II.F.1.d.

G. INTERIM MEASURES (IM)

1. IM Workplan

a. Upon notification by the Department, the Permittee shall prepare and submit an Interim Measures (IM) Workplan for any SWMU or AOC which the Department determines is necessary. IM are necessary in order to minimize or prevent the further migration of contaminants and limit human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented. The IM Workplan shall be submitted within thirty (30) calendar days of such notification and shall include the elements listed in II.G.1.b. Such interim measures may be conducted concurrently with investigations required under the terms of this permit. The Permittee may initiate IM by submitting an IM Workplan for approval and reporting in accordance with the requirements in Condition II.G.

b. The IM Workplan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and to be consistent with and integrated into any long-term solution at the facility. The IM Workplan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

c. The IM Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the IM Workplan schedule in the letter approving the IM Workplan. If the Department disapproves the IM Workplan, the Department shall either (1) notify the Permittee in writing of the IM Workplan's deficiencies and specify a due date for submission of a revised IM Workplan, or (2) revise the IM Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Workplan, or (3) conditionally approve the IM Workplan and notify the Permittee of the conditions.

2. IM Implementation

a. The Permittee shall implement the interim measures in accordance with the approved IM Workplan.

b. The Permittee shall give notice to the Department as soon as possible of any planned changes, reductions, or additions to the IM Workplan.

c. Final approval of corrective action required under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 which is achieved through interim measures shall be as a permit modification (i.e., in accordance with 40 CFR 270.41 as adopted in 15A NCAC 13A .0113 and Condition II.I.).

3. IM Reports

a. If the time required for completion of interim measures is greater than one (1) year, the Permittee shall provide the Department with progress reports at intervals specified in the approved workplan. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the interim measures completed;

ii. Summaries of any deviations from the IM Workplan during the reporting period;

iii. Summaries of any problems or potential problems encountered during the reporting period;

iv. Projected work for the next reporting period; and

v. Copies of laboratory/monitoring data.

b. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of completion of interim measures conducted under Condition II.G., an IM Report. The IM Report shall contain the following information at a minimum:

i. A description of interim measures implemented:

ii. Summaries of results;

iii. Summaries of any problems encountered;

iv. Summaries of accomplishments and/or effectiveness of interim measures; and

v. Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.D.10.

H. CORRECTIVE MEASURES STUDY

1. Corrective Measures Study (CMS) Workplan

a. The Permittee shall prepare and submit a CMS Workplan for those units requiring a CMS within ninety (90) calendar days of notification by the Department that a CMS is required. This CMS Workplan shall be developed to meet the requirements of Condition II.H.1.b.

b. The CMS Workplan shall meet the requirements of Appendix C at a minimum. The CMS Workplan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit identified in accordance with Condition II.H.1.a. which is deleted from the CMS Workplan. Such deletion of a unit is subject to the approval of the Department. The CMS shall be conducted in accordance with the

approved CMS Workplan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix C. Such omissions or deviations are subject to the approval of the Department. The scope of the CMS Workplan shall include all investigations necessary to ensure compliance with 3005(c)(3), 40 CFR 264.101 and 40 CFR 264.552 as adopted in 15A NCAC 13A .0109, and 270.32(b) as adopted in 15A NCAC 13A .0113. The Permittee shall implement corrective actions beyond the facility boundary, as set forth in Condition II.A.5.

c. The Department shall either approve or disapprove, in writing, the CMS plan. If the Department disapproves the CMS Workplan, the Department shall either (1) notify the Permittee in writing of the CMS Workplan's deficiencies and specify a due date for submittal of a revised CMS Workplan, or (2) revise the CMS Workplan and notify the Permittee of the revisions, or (3) conditionally approve the CMS Work Workplan and notify the Permittee of the conditions. This modified CMS Workplan becomes the approved CMS Workplan .

2. Corrective Measures Study Implementation

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Workplan, no later than fifteen (15) calendar days after the Permittee has received written approval from the Department for the CMS Workplan. The CMS shall be conducted in accordance with the approved CMS Workplan approved in accordance with Condition II.H.1.c.

3. CMS Report

a. The Permittee shall prepare and submit to the Department a draft and a final CMS Report for the study conducted pursuant to the approved CMS Workplan. The draft CMS Report shall be submitted to the Department in accordance with the schedule in the approved CMS Workplan. The final CMS Report shall be submitted to the Department within thirty (30) calendar days of receipt of the Department's comments on the draft CMS Report. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. If a remedial alternative requires the use of a CAMU, the CMS report shall include all information necessary to establish and implement the CAMU. The CMS Report shall present all information gathered under the approved CMS Workplan. The CMS Final Report must contain adequate information to support the Department's decision on the recommended remedy, described under Condition II.I.

b. If the Department determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition II.H.3.a., the Department may disapprove the CMS Final Report. If the Department disapproves the CMS Final Report, the Department shall notify the Permittee in writing of deficiencies in the CMS Final Report and specify a due date for submittal of a revised CMS Final Report. The Department will notify the Permittee of any no further action decision.

c. As specified under Condition II.H.3.a., based on preliminary results and the CMS Final Report, the Department may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

I. REMEDY APPROVAL AND PERMIT MODIFICATION

1. A remedy shall be selected by the Department from the remedial alternatives evaluated in the CMS. The remedy will be based at a minimum on protection of human health and the environment, as per specific site conditions, existing regulations, and guidance.

2. Pursuant to 40 CFR 270.41 as adopted in 15A NCAC 13A .0113, a permit modification will be initiated by the Department upon concurrence of a remedy selected in accordance with Condition II.I.1. This modification will serve to incorporate a final remedy, including a CAMU, if necessary, into the permit.

3. Within one hundred and twenty (120) calendar days after this Permit has been modified, the Permittee shall demonstrate financial assurance for completing the approved remedy.

J. [illegible] Estimate for Completion of Corrective Action.

1. [illegible] cost estimate for the completion of any corrective action required under this permit for solid waste management units [illegible] financial assurance for completion of corrective action [illegible] under 40 CFR 264.90(a)(2) and 264.101(b) as adopted in 15A NCAC 13A .0109. Such cost estimate will be based upon the cost of assessment of soil and ground water, installation, operation, inspection, monitoring, and maintenance of the corrective action system to meet the requirements of 40 CFR 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 and this permit to include any treatment system necessary for contaminated soil and/or ground water. Such cost estimate will include the full cost (100%) of corrective action as defined by Part II of this permit.

2. The Permittee shall submit the cost estimate for completion of corrective action required under 40 CFR 264.90(a)(2), 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 and this permit within one hundred eighty (180) days of the approval of this permit.

3. The Permittee shall annually adjust the cost estimate for inflation sixty (60) days prior to the anniversary date of the establishment of the financial assurance mechanism unless using a financial test or corporate guarantee, in which case the estimate shall be updated thirty (30) days after the close of the firm's fiscal year.

4. The Permittee shall submit cost adjustments for modifications to the corrective action plan to the Section within thirty (30) calendar days after receiving approval of the modification if the change increases the cost of corrective action.

K. Financial Assurance for Corrective Action.

1. The Permittee shall demonstrate continuous compliance with 40 CFR 264.90(a)(2) and 264.101 as adopted in 15A NCAC 13A .0109 by providing documentation of financial assurance using a mechanism described in 40 CFR 264.151 and 264.145 as adopted in 15A NCAC 13A .0109 or a mechanism described in 15A NCAC 13A .0109(i) in at least the amount of the cost estimate required under Condition II.J.

2. The Permittee shall submit financial assurance for the full cost of corrective action as required under 40 CFR 264.90(a)(2), 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 no later than sixty (60) days after the submittal of the cost estimate described in Condition II.J. of this permit.

3. Only the mechanisms described in 15A NCAC 13A .0109(i) may be used for financial assurance for corrective action. References to regulatory requirements for "closure and/or post-closure care" shall be replaced with the phrase "closure, post-closure care, and/or corrective action."

L. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

1. If at any time the Department determines that modification of the Corrective Action Schedule of Compliance is necessary, the Department may initiate a modification to the Schedule of Compliance, Appendix D.

2. Modifications that are initiated and finalized by the Department will be in accordance with the applicable provisions of 40 CFR 270 as adopted in 15A NCAC 13A .0113. The Permittee may also request a permit modification in accordance with 40 CFR 270 as adopted in 15A NCAC 13A .0113.

M. IMMINENT HAZARDS

1. The Permittee shall report to the Department any imminent or existing hazard to public health or the environment from any release of hazardous waste or hazardous constituents. Such information shall be reported orally within 24 hours from such time the Permittee becomes aware of the circumstances. This report shall include the information specified under Condition I.D.15.

2. A written report shall also be provided to the Department within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Condition I.D.15.; a description of the release and its cause; the period of the release; whether the release has been stopped; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the release.

N. WORKPLAN AND REPORT REQUIREMENTS

1. All plans and schedules shall be subject to approval by the Department prior to implementation to assure that such workplans and schedules are consistent with the requirements of this permit and with applicable regulations and guidance. The Permittee shall revise all submittals and schedules as specified by the Department. Upon approval, the Permittee shall implement all plans and schedules as written.

2. The results of all plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Department based on the Permittee's demonstration that sufficient justification for the extension exists.

3. If the Permittee at any time determines that the SAR information required under Condition II.C., or RFI Workplan(s) required under Condition II.F., no longer satisfies the requirements of 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended RFI Workplan(s) to the Department within ninety (90) calendar days of such determination.

4. All reports shall be signed and certified in accordance with 40 CFR 270.11 as adopted in 15A NCAC 13A .0113.

5. Two (2) paper copies and one (1) electronic copy of all reports and plans shall be provided by the Permittee to the Department at the following address:

Ms. Elizabeth W. Cannon, Chief
Hazardous Waste Section
Waste Management Division
1646 Mail Service Center
Raleigh, NC 27699-1646

Electronic reports shall be in MS Word or a common text format. Electronic data shall be in MS Access or a comma delimited format. Data files shall also include a meta data file describing the fields in the data file. Plans shall be electronic to the most reasonable extent possible.

PART III - WASTE MINIMIZATION

A. GENERAL REQUIREMENTS

Pursuant to 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109, and Section 3005(h) of RCRA, 42 U.S.C. 6925(h), the Permittee must certify, no less often than annually that:

1. The Permittee has a program in place to reduce the volume and toxicity of hazardous waste to the degree determined by the Permittee to be economically practicable; and

2. The proposed method of treatment, storage or disposal is the most practicable method available to the Permittee which minimizes the present and future threat to human health and the environment.

B. WASTE MINIMIZATION RECORD KEEPING

The Permittee shall maintain copies of the certification in the facility operating record as required by 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109.

C. WASTE MINIMIZATION PROGRAM OBJECTIVES

The Waste Minimization Program should include the following elements:

1. Top Management Support

   a. Dated and signed policy describing management support for waste minimization and for implementation of a waste minimization plan.

   b. Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.

   c. Description of how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations, and maintenance.

2. Characterization of Waste Generation

   Identification of types, amounts, and hazardous constituents of waste streams, with the source and date of generation.

3. Periodic Waste Minimization Assessments

   a. Identification of all points in a process where materials can be prevented from becoming a waste, or can be recycled.

   b. Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.

c. Description of technically and economically practical waste reduction/recycling options to be implemented, and a planned schedule for implementation.

d. Specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

4. Cost Allocation System

a. Identification of waste management costs for each waste, factoring in liability, transportation, record keeping, personnel, pollution control, treatment, disposal, compliance and oversight costs to the extent feasible.

b. Description of how departments are held accountable for the wastes they generate.

c. Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

5. Technology Transfer

Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

6. Program Evaluation

a. Description of types and amounts of hazardous waste reduced or recycled.

b. Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.

c. Amendments to waste minimization plan and explanation.

d. Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.

e. Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

References: "Draft Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program", 54 FR 25056, June 12, 1989.

"Waste Minimization Opportunity Assessment Manual", EPA/625/788/003, July 1988.

PART IV - LAND DISPOSAL RESTRICTIONS

A. GENERAL RESTRICTIONS

1. 40 CFR Part 268 as adopted in 15A NCAC 13A .0112 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of 40 CFR 268 as adopted in 15A NCAC 13A .0112. Where the Permittee has applied for an extension, waiver or variance under 40 CFR 268 as adopted in 15A NCAC 13A .0112 the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.

B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

1. A restricted waste identified in 40 CFR Part 268 Subpart C as adopted in 15A NCAC 13A .0112 may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR Part 268 Subparts C and/or D as adopted in 15A NCAC 13A .0112 are met.

2. The storage of hazardous wastes restricted from land disposal under 40 CFR Part 268 as adopted in 15A NCAC 13A .0112 is prohibited unless the requirements of 40 CFR 268 Subpart E as adopted in 15A NCAC 13A .0112 are met.

3. Under 40 CRF 268.49, as adopted in 15A NCAC 13A .0112, the Permittee must comply with land disposal restrictions prior to the placing of contaminated soil that exhibits a characteristic of hazardous waste, or exhibited a characteristic of hazardous waste at the time it was generated, into a land disposal unit. Circumstances under which soil contaminated with a listed hazardous waste must comply with land disposal restrictions prior to placement in a land disposal unit are also specified in 40 CFR 268.49.

C. DEFINITIONS

1. For the purposes of 40 CFR Part 268 as adopted in 15A NCAC 13A .0112, "Land Disposal" means placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

PART V - ORGANIC AIR EMISSIONS REQUIREMENTS FOR PROCESS VENTS AND EQUIPMENT LEAKS

A. GENERAL INTRODUCTION

In the June 21, 1990 Federal Register, EPA published the final rule for Phase I Organic Air Emission Standards (40 CFR Parts 264 and 265, Subparts AA and BB) for hazardous waste treatment, storage, and disposal facilities. Subpart AA contains emission standards for process vents associated with distillation fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that process hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight. (SUBPART AA DOES NOT APPLY TO AIR STRIPPING OPERATIONS USED FOR CORRECTIVE ACTION PURPOSES.) Subpart BB contains emission standards that address leaks from specific equipment (i.e. pumps, valves, compressors, etc.) that contains or contacts hazardous waste that has an organic concentration of at least ten (10) percent by weight.

B. ORGANIC AIR EMISSION STANDARDS

The Permittee has no units at the present time to which the Organic Air Emissions Requirements of 40 CFR 264, Subpart AA (for process vents) or Subpart BB (for equipment leaks), as adopted in 15A NCAC 13A .0109, applies. If the Permittee should change, modify or otherwise identify any unit that is or has become subject to these regulations, the Permittee is required to comply with all 40 CFR 264, as adopted in 15A NCAC 13A .0109, Subpart AA, and Subpart BB regulations and is required to submit all 40 CFR 270.24 and 270.25 informational requirements, as adopted in 15A NCAC 13A .0113, within thirty (30) calendar days after implementation of the unit's modification.

PART VI - RCRA ORGANIC AIR EMISSION REQUIREMENTS

A. APPLICABILITY

1. Subpart CC applies to all tanks, containers, surface impoundments and/or miscellaneous units, identified in Condition VI.A., except as provided for in 40 CFR 264.1 and 264.1080(b) as adopted in 15A NCAC 13A .0109.

The Conditions of this Part apply to:

2. Hazardous waste management units for which required control equipment has been installed and is operational or are exempt from Subpart CC standards under 40 CFR 264.1082(c) as adopted in 15A NCAC 13A .0109.

B. EMISSION CONTROL TECHNOLOGY

1. The Permittee shall install and maintain all regulated units and associated emission control technology in accordance with the detailed plans, schedules, information and reports as contained in the facility's Part B permit application. In accordance with Condition VI.E., the permit application must be modified to contain appropriate detailed plans, schedules, information and reports.

C. GENERAL STANDARDS

The Permittee shall comply with the applicable requirements of 40 CFR Part 264, Subpart CC as adopted in 15A NCAC 13A .0109.

D. REPORTING REQUIREMENTS

1. For each tank, surface impoundment, or container which manages hazardous waste that is exempted from using air emission controls, a written report shall be submitted to the Department within fifteen (15) days of each occurrence when hazardous waste is placed in the waste management unit in noncompliance with 40 CFR 264.1082(c)(1) or (c)(2) as adopted in 15A NCAC 13A .0109, as applicable. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance.

2. For tanks listed in Conditions VI.A.2., which use air emission controls in accordance with the requirements 40 CFR 264.1084(c) as adopted in 15A NCAC 13A .0109, a written report shall be submitted to the Department within fifteen (15) days of each occurrence when hazardous waste is managed in the tank in noncompliance with the Conditions specified in 40 CFR 264.1084(c)(1) through (c)(4) as adopted in 15A NCAC 13A .0109. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance.

3. For control devices used in accordance with the requirements of 40 CFR 264.1087 as adopted in 15A NCAC 13A .0109, a semiannual written report shall be submitted to the Department except as provided for in Condition VI.D.4. of this Part. The report shall describe each occurrence during the previous 6-month period when a control device is operated

continuously for 24 hours or longer in noncompliance with the applicable operating values defined in 40 CFR 264.1035(c)(4) as adopted in 15A NCAC 13A .0109 or when a flare is operated with visible emissions as defined in 40 CFR 264.1033(d) as adopted in 15A NCAC 13A .0109. The written report shall include the EPA identification number, facility name and address, and an explanation why the control device could not be returned to compliance within 24 hours, and actions taken to correct the noncompliance.

4. A report to the Department in accordance with the requirements of Condition VI.D.3. of this Part is not required for a 6-month period during which all control devices subject to 40 CFR Part 264, Subpart CC, as adopted in 15A NCAC 13A .0109 are operated by the owner or operator such that during no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in 40 CFR 264.1035(c)(4) as adopted in 15A NCAC 13A .0109 of this part or a flare operate with visible emissions as defined in 40 CFR 264.1033(d) as adopted in 15A NCAC 13A .0109.

5. All reports shall be signed and dated by an authorized representative of the Permittee as per 40 CFR 270.11(b) as adopted in 15A NCAC 13A .0113.

E. NOTIFICATION OF NEW UNITS

Prior to installing any tank, container, surface impoundment or miscellaneous unit subject to 40 CFR Part 264, Subpart CC, the Permittee shall apply for a permit modification under 40 CFR 270.42 as adopted in 15A NCAC 13A .0113, and provide specific Part B application information required under 40 CFR 270.14-17 and 270.27 as adopted in 15A NCAC 13A .0113, as applicable, with the modification request.

APPENDIX A

SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN SUMMARY

APPENDIX A

SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN SUMMARY

Table 1. List of Solid Waste Management Units and Areas of Concern regulated by the RCRA Permit:

SWMU/AOC Number	Description
SWMU 1a	Wastewater Collection Sump and Feeder Trenches, Intermediates, Plant 1
SWMU 1b	Wastewater Collection Sump and Feeder Trenches, Intermediates, Plant 2
SWMU 1c	Ingredient Recovery Area Collection Sump and Feeder Trenches
SWMU 2	Double contained conveyance system
SWMU 3	Intermediates Airflow Trench
SWMU 4	Intermediates Emergency Lift Station
SWMU 5	DMT Emergency Basin
SWMU 6	DMT Equalization Basin
SWMU 7	DMT Splitter Box
SWMUs 8,9,10,11	DMT Aeration Basins (4)
SWMUs 12,13	DMT Polishing Ponds (2)
SWMUs 14,15	DMT Clarifiers (2)
SWMU 16	DMT Clarifier Sludge Pit
SWMU 17	DMT Clarifier Sludge Pit
SWMU 18	DMT Clarifier Lift Station
SWMU 19	Dacron® Aeration Basin
SWMU 20	Dacron® Concrete Flume
SWMUs 21,22	Dacron® Clarifiers (2)
SWMUs 23,24	Dacron® Clarifier Sludge Pits (2)
SWMU 25	Dacron® Chlorine Contact Chamber
SWMU 26	Dacron® Retention Basin
SWMU 27	Dacron® Retention Basin Sump
SWMU 28	Dissolved Air Flotation Thickener
SWMU 29	Aerobic Digester
SWMU 30	23-Acre Sludge Field
SWMU 31	13-Acre Sludge Field
SWMU 32	12-Acre Sludge Field
SWMU 33	Sludge Field Runoff Drainage Ditch

SWMU 34	Sludge Field Runoff Pump Station
SWMU 35	Sludge Field Under Drain Pump Station
SWMU 36	Sludge Field Runoff Overflow Basin
SWMU 37	North Incinerator
SWMU 38	South Incinerator
SWMU 39	DMT Process Incinerator
SWMUs 40,41,42,43	Fuel Oil/Process Waste-Fired Boilers (4)
SWMU 44	Old Incinerator
SWMU 45	Waste Drum Filling Areas
SWMU 46	Satellite Drum Storage Area
SWMU 47	Drum Staging Areas
SWMU 48	Incinerator Building Drum Storage Area
SWMU 49	Hazardous Waste Drum Storage Pad
SWMU 50	Hazardous Waste Drum Storage Area
SWMU 51	Non-Hazardous Waste Drum Storage Area
SWMU 52	Drum Storage Pad Drainage/Spill Containment System
SWMU 53	Landfill No. 1
SWMU 54	Landfill No. 2
SWMU 55	Past Landfill No. 1
SWMU 56	Past Landfill no. 2
SWMU 57	Past Landfill No. 3
SWMU 58	Past Landfill No. 4
SWMU 59	Construction Rubble Landfill
SWMU 60	Contingency Basin
SWMU 61	Contingency Basin Ditch
SWMU 62	Coal Pile Runoff Settling Basin
SWMU 63	Hazardous Waste Storage Tank
SWMU 64	Process Waste/Fuel Oil Blending Tank
SWMU 65	Incinerator Building Trash Pile
SWMUs 66,67	Dacron® Polymer Pads (2)
SWMU 68	Cooling Tower Basins
SWMU 69	Incinerator Building Waste Sump
SWMU 70	Incinerator Ash Dumpster
SWMU 71	Trash Dumpster
SWMUs 72,73	Boiler Bottom Ash and Fly Ash Silos (2)

SWMU 74	Ash Unloading Area
AOC A1	Former Underground Tank Storage Area
AOC A	Paraxylene Storage Tank Basin
AOC B	Fire Training Area
AOC C	Former BACA Storage Area
AOC FMA	Fibers Manufacturing Area
AOC GW	Site Wide Groundwater

Table 2. List of Solid Waste Management Units and Areas of Concern that require no further action at this time:

SWMU/AOC Number	Description
SWMU 1a	Wastewater Collection Sump and Feeder Trenches, Intermediates, Plant 1
SWMU 1c	Ingredient Recovery Area Collection Sump and Feeder Trenches
SWMU 2	Double contained conveyance system
SWMU 3	Intermediates Airflow Trench
SWMU 4	Intermediates Emergency Lift Station
SWMU 7	DMT Splitter Box
SWMUs 8,9,10,11	DMT Aeration Basins (4)
SWMUs 12,13	DMT Polishing Ponds (2)
SWMUs 14,15	DMT Clarifiers (2)
SWMU 16	DMT Clarifier Sludge Pit
SWMU 17	DMT Clarifier Sludge Pit
SWMU 18	DMT Clarifier Lift Station
SWMU 19	Dacron® Aeration Basin
SWMU 20	Dacron® Concrete Flume
SWMUs 21,22	Dacron® Clarifiers (2)
SWMUs 23,24	Dacron® Clarifier Sludge Pits (2)
SWMU 25	Dacron® Chlorine Contact Chamber
SWMU 26	Dacron® Retention Basin
SWMU 27	Dacron® Retention Basin Sump
SWMU 28	Dissolved Air Flotation Thickener
SWMU 29	Aerobic Digester
SWMU 30	23-Acre Sludge Field
SWMU 31	13-Acre Sludge Field
SWMU 32	12-Acre Sludge Field
SWMU 33	Sludge Field Runoff Drainage Ditch
SWMU 34	Sludge Field Runoff Pump Station
SWMU 35	Sludge Field Under Drain Pump Station
SWMU 36	Sludge Field Runoff Overflow Basin
SWMU 38	South Incinerator
SWMU 39	DMT Process Incinerator
SWMUs 40,41,42,43	Fuel Oil/Process Waste-Fired Boilers (4)

SWMU 44	Old Incinerator
SWMU 45	Waste Drum Filling Areas
SWMU 46	Satellite Drum Storage Area
SWMU 47	Drum Staging Areas
SWMU 48	Incinerator Building Drum Storage Area
SWMU 49	Hazardous Waste Drum Storage Pad
SWMU 51	Non-Hazardous Waste Drum Storage Area
SWMU 52	Drum Storage Pad Drainage/Spill Containment System
SWMU 54	Landfill No. 2
SWMU 56	Past Landfill no. 2
SWMU 60	Contingency Basin
SWMU 61	Contingency Basin Ditch
SWMU 62	Coal Pile Runoff Settling Basin
SWMU 63	Hazardous Waste Storage Tank
SWMU 64	Process Waste/Fuel Oil Blending Tank
SWMU 65	Incinerator Building Trash Pile
SWMUs 66,67	Dacron® Polymer Pads (2)
SWMU 68	Cooling Tower Basins
SWMU 69	Incinerator Building Waste Sump
SWMU 70	Incinerator Ash Dumpster
SWMU 71	Trash Dumpster
SWMUs 72,73	Boiler Bottom Ash and Fly Ash Silos (2)
SWMU 74	Ash Unloading Area
AOC A1	Former Underground Tank Storage Area

Table 3. List of Solid Waste Management Units and Areas of Concern requiring Confirmatory Sampling:

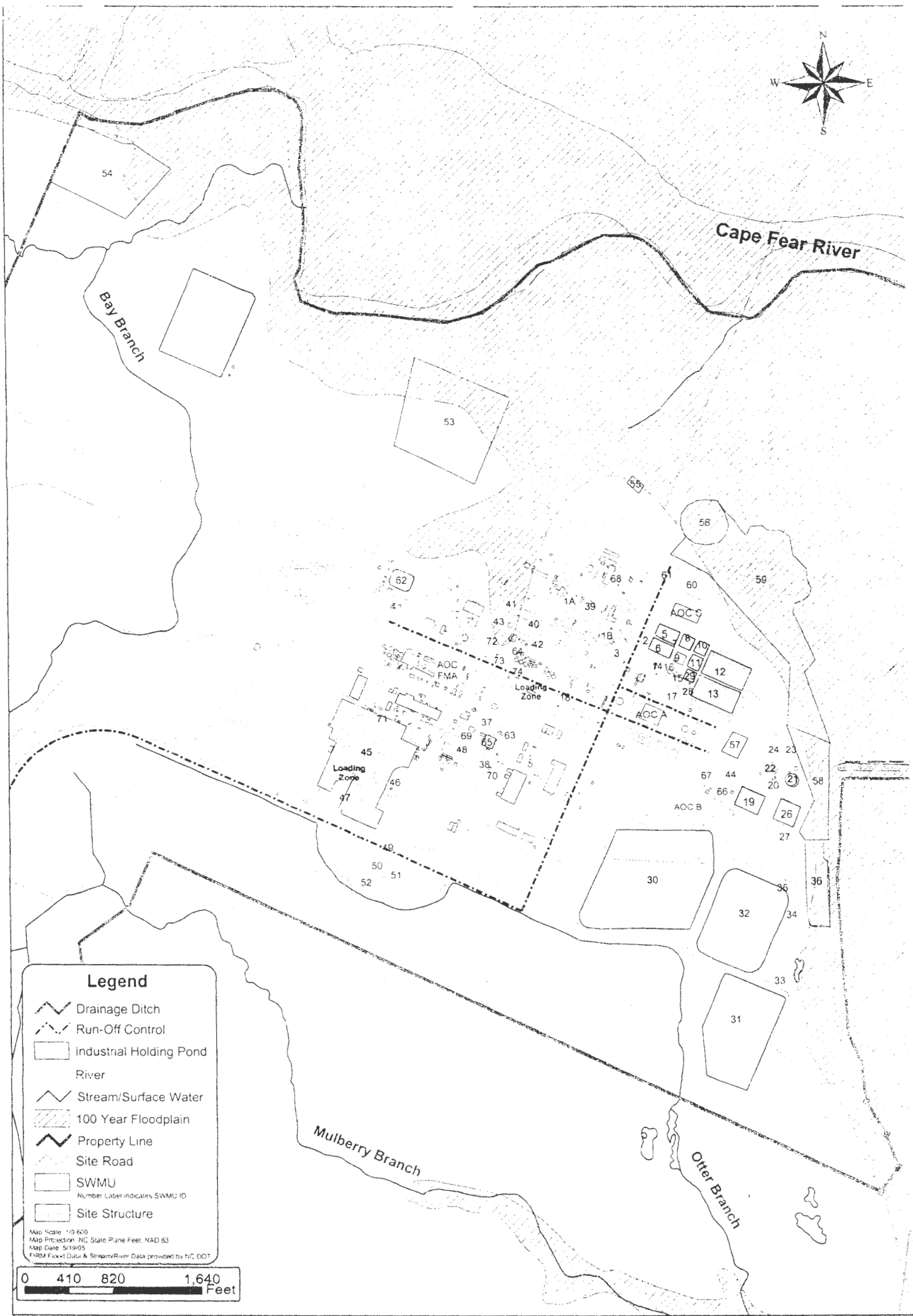
There are no Solid Waste Management Units or Areas of Concern that require Confirmatory Sampling at this time.

Table 4. List of Solid Waste Management Units and Areas of Concern requiring additional RFI activities:

SWMU/AOC Number	Description
SWMU 37	North Incinerator
SWMU 50	Hazardous Waste Drum Storage Area
SWMU 58	Past Landfill No. 4
SWMU 59	Construction Rubble Landfill
AOC A	Paraxylene Storage Tank Basin
AOC C	Former BACA Storage Area
AOC FMA	Fibers Manufacturing Area
AOC GW	Groundwater

Table 5. List of Solid Waste Management Units and Areas of Concern requiring a Corrective Measures Study:

SWMU/AOC Number	Description
SWMU 1b	Wastewater Collection Sump and Trenches
SWMU 5	DMT Emergency Basin
SWMU 6	DMT Equalization Basin
SWMU 53	Landfill No. 1
SWMU 55	Past Landfill No. 1
SWMU 57	Past Landfill No. 3
AOC B	Fire Training Area



DUPONT

CORPORATE REMEDIATION GROUP

An Alliance between DuPont and URS Corporation - North Carolina

5224 Fairview Road
Charlotte, NC 28210

Title: Site Layout Map
RCRA Permit Application
Cape Fear, NC

Drawn: ND	Date: 05/19/05	Project No.:
Checked: MH	Revision:	Figure No.: 1
Approved: KG		

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) WORK PLAN OUTLINE

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) WORK PLAN OUTLINE

I. RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) Workplan that meets the requirements of Part II of this permit and appropriate corrective action guidance documents. This Workplan shall also include the development of the following plans, which shall be prepared concurrently:

A. Project Management Plan

Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling and Analysis Plan(s)

The Permittee shall prepare a plan to document all monitoring procedures: field sampling, sampling procedures and sample analysis performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented. The Sampling Strategy and Procedures shall be in accordance with Characterization of Hazardous Waste Sites A Methods Manual: Volume II., Available Sampling Methods, EPA-600/4-84-076, or EPA Region IV Engineering Compliance Branch's Standard Operating Procedure and Quality Assurance Manual (SOP). Any deviations from these references must be requested by the applicant and approved by EPA. The Sampling and Analysis Plan must specifically discuss the following unless the EPA-600/4-84-076 or SOP procedures are specifically referenced.

1. Sampling Strategy
   a. Selecting appropriate sampling locations, depths, etc.;
   b. Obtaining all necessary ancillary data;
   c. Determining conditions under which sampling should be conducted;
   d. Determining which media are to be sampled (e.g., ground water, air, soil, sediment, subsurface gas);
   e. Determining which parameters are to be measured and where;
   f. Selecting the frequency of sampling and length of sampling period;

g. Selecting the types of samples (e.g., composites vs. grabs) and number of samples to be collected.

2. Sampling Procedures

a. Documenting field sampling operations and procedures, including;

i. Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);

ii. Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

iii. Documentation of specific sample preservation method;

iv. Calibration of field instruments;

v. Submission of field-biased blanks, where appropriate;

vi. Potential interferences present at the facility;

vii. Construction materials and techniques, associated with monitoring wells and piezometers;

viii. Field equipment listing and sampling containers;

ix. Sampling order; and

x. Decontamination procedures.

b. Selecting appropriate sample containers;

c. Sampling preservation; and

d. Chain-of-custody, including:

i. Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and

ii. Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Sample Analysis

Sample analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste-Physical/Chemical Methods" (third edition). The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a. Chain-of-custody procedures, including:

i. Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipments, and verify the data entered onto the sample custody records;

ii. Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

iii. Specification of laboratory sample custody procedures for sample handling, storage, and dispersing for analysis.

b. Sample storage;

c. Sample preparation methods;

d. Analytical Procedures, including:
   i. Scope and application of the procedure;
   ii. Sample matrix;
   iii. Potential interferences;
   iv. Precision and accuracy of the methodology; and
   v. Method detection limits.

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting;

g. Internal quality control checks, laboratory performance and systems audits and frequency, including:
   i. Method blank(s);
   ii. Laboratory control sample(s);
   iii. Calibration check sample(s);
   iv. Replicate sample(s);
   v. Matrix-spiked sample(s);
   vi. Control charts;
   vii. Surrogate samples;
   viii. Zero and span gases; and
   ix. Reagent quality control checks.

h. Preventative maintenance procedures and schedules;

i. Corrective action (for laboratory problems); and

j. Turnaround time.

C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record
The data record shall include the following:

a. Unique sample or field measurement code;

b. Sampling or field measurement location and sample or measurement type;

c. Sampling or field measurement raw data;

d. Laboratory analysis ID number;

e. Property or component measures; and

f. Result of analysis (e.g., concentration).

2. Tabular Displays
The following data shall be presented in tabular displays:

a. Unsorted (raw) data;

b. Results for each medium, or for each constituent monitored;

c. Data reduction for statistical analysis, as appropriate;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

e. Summary data.

3. Graphical Displays
The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transits, three dimensional graphs, etc.):

a. Display sampling location and sampling grid;

b. Indicate boundaries of sampling area, and area where more data are required;

c. Display geographical extent of contamination;

d. Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and

e. Indicate features affecting inter-media transport and show potential receptors.

II. RCRA FACILITY INVESTIGATION (RFI) REQUIREMENTS

RCRA Facility Investigation:

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical content and quality to support the development and evaluation of the corrective action plan if necessary. The information contained in a RCRA Part B permit application and/or RCRA Section 3019 Exposure Information Report may be referenced as appropriate but must be summarized in both the RFI Workplan and RFI Report.

All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The Permittee shall characterize the following as they relate to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units.

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:
   i. Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;
   ii. Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);
   iii. Depositional history;
   iv. Regional and facility specific ground-water flow patterns; and
   v. Identification and characterization of areas and amounts of recharge and discharge.

b. An analysis of any topographic features that might influence the ground-water flow system.

c. Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:
   i. Hydraulic conductivity and porosity (total and effective);
   ii. Lithology, grain size, sorting, degree of cementation;
   iii. An interpretation of hydraulic interconnections between saturated zones; and
   iv. The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).

d. Based on data obtained from ground-water monitoring wells and piezometers installed up gradient and down gradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:
   i. Water-level contour and/or potentiometric maps;

ii. Hydrologic cross-sections showing vertical gradients;
iii. The flow system, including the vertical and horizontal components of flow; and
iv. Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

e. A description of man-made influences that may affect the hydrology of the site, identifying:
i. Local water-supply and production wells with an approximate schedule of pumping; and
ii. Man-made hydraulic structures (pipelines, trench drains, ditches, etc.)

2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of contaminant release(s). Such characterization may include, but not be limited to, the following types of information as appropriate:

a. Surface soil distribution;

b. Soil profile, including ASTM classification of soil;

c. Transepts of soil stratigraphy;

d. Hydraulic conductivity (saturated and unsaturated);

e. Relative permeability;

f. Bulk density;

g. Porosity;

h. Soil sorption capacity;

i. Cation exchange capacity (CEC);

j. Soil organic content;

k. Soil pH;

l. Particle size distribution;

m. Depth of water table;

n. Moisture content;

o. Effect of stratification on unsaturated flow;

p. Infiltration;

q. Evapotranspiration;

r. Storage capacity;

s. Vertical flow rate; and

t. Mineral content.

3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterizations may include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:
   i. For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
   ii. For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;
   iii. For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge point(s), and general contents.
   iv. Drainage patterns; and
   v. Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:
   i. Deposition area;
   ii. Thickness profile; and
   iii. Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

4. Air

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

a. A description of the following parameter:
   i. Annual and monthly rainfall averages;
   ii. Monthly temperature averages and extremes;
   iii. Wind speed and direction;
   iv. Relative humidity/dew point;
   v. Atmospheric pressure;
   vi. Evaporation data;
   vii. Development of inversions; and
   viii. Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence (i.e., Hurricanes).

b. A description of topographic and man-made features which affect air flow and emission patterns, including:
   i. Ridges, hills or mountain area;
   ii. Canyons or valleys;
   iii. Surface water bodies (e.g., rivers, lakes, bays, etc.); and
   iv. Buildings.

B. Source Characterization

For those sources from which releases of hazardous constituents have been detected the Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type; quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics

   a. Location of unit/disposal area;

   b. Type of unit/disposal area;

   c. Design features;

   d. Operating practices (past and present);

   e. Period of operation;

   f. Age of unit/disposal area;

   g. General physical conditions; and

   h. Method used to close the unit/disposal area.

2. Waste Characteristics:

   a. Type of wastes placed in the unit;
      i. Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);
      ii. Quantity; and
      iii. Chemical composition.
   b. Physical and chemical characteristics such as;
      i. Physical form (solid, liquid, gas);
      ii. Physical description (e.g., powder, oily sludge);
      iii. Temperature;
      iv. pH;
      v. General chemical class (e.g., acid, base, solvent);
      vi. Molecular weight;
      vii. Density;
      viii. Boiling point;

ix. Viscosity;
x. Solubility in water;
xi. Cohesiveness of the waste; and
xii. Vapor pressure.

c. Migration and dispersal characteristics of the waste such as:
i. Sorption capability;
ii. Biodegradability, bioconcentration, biotransformation;
iii. Photodegradation rates;
iv. Hydrolysis rates; and
v. Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

C. Characterization of Releases of Hazardous Constituents

The Permittee shall collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination n the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction, and rate of movement of contamination. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

1. Ground-water Contamination
The Permittee shall conduct a ground-water investigation to characterize any plumes of contamination detected at the facility. This investigation shall at a minimum provide the following information:

a. A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from or within the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);

e. An evaluation of factors influencing the plume movement; and

f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the saturated zone in the vicinity of any contaminant release. The investigation may include the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility, speciation, absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from releases of hazardous constituents at the facility. The investigation may include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;

b. The horizontal and vertical direction of contaminant movement;

c. The contaminant velocity;

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contaminant movement; and

f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

The Permittee shall document the procedures used in making the above determinations.

4. Air Contamination

The Permittee shall conduct an investigation to characterize gaseous releases of hazardous constituents into the atmosphere or any structures or buildings. This investigation may provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;

b. The rate and amount of the release; and

c. The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

The Permittee shall document the procedures used in making the above determinations.

D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. Current local uses and planned future uses of ground water:

a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and

b. Location of ground-water users, to include withdrawal and discharge wells, within one mile of the impacted area.

The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:

a. Domestic and municipal (e.g., potable and lawn/gardening watering);

b. Recreational (e.g., swimming, fishing);

c. Agricultural;

d. Industrial; and

e. Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:

a. Recreation;

b. Hunting;

c. Residential;

d. Commercial; and

e. Relationship between population locations and prevailing wind direction.

4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A general description of the ecology within the area adjacent to the facility.

6. A general demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any known or documented endangered or threatened species near the facility.

APPENDIX C

CORRECTIVE MEASURES STUDY (CMS) PLAN OUTLINE

APPENDIX C

CORRECTIVE MEASURES STUDY (CMS) PLAN OUTLINE

I. Identification and Development of the Corrective Measure Alternatives

A. Description of Current Situation
B. Establishment of Corrective Action Objectives
C. Screening of Corrective Measures Technologies
D. Identification of the Corrective Measure Alternatives

II. Evaluation of the Corrective Measure Alternatives

A. Technical/Environmental/Human Health/Institutional
B. Cost Estimate

III. Justification and Recommendation of the Corrective Measure or Measures

A. Technical
B. Environmental
C. Human Health

IV. Reports

A. Draft
B. Final
C. Public Review and Final Selection of Corrective Measure

I. IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURES ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified potential corrective measure technologies, the Permittee shall identify, screen and develop the alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures which have been or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee shall propose facility-specific objectives for the corrective action. These objectives shall be based on public

health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground-water releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR 264.100 as adopted in 15A NCAC 13A .0109.

C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and assess the technologies which are applicable at the facility. The Permittee shall screen the corrective measure technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics
   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

2. Waste Characteristics
   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

3. Technology Limitations
   During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternatives

The Permittee shall develop the Corrective Measure Alternatives based on the corrective action objectives and analysis of potential corrective measure technologies. The Permittee shall rely on engineering practice to determine which of the previously

identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies.

II. EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the initial screening and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical;

a. The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

i. Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii. Useful life is defined as the length of time the level of desired effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii. Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

i. Constructability is determined by conditions both internal and external to the facility conditions and includes such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

ii. Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental;
The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; and adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health;
The Permittee shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the concentrations and characteristics of the contaminants on-site, potential exposure routes, and potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time for management of mitigation measures, the relative levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional
The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, state and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative. If the selected remedy is capping and closure in place, a notation must be made in the land deed.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (non-construction and overhead) costs.

   a. Direct capital costs include:
      i. Construction costs:
         Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.
      ii. Equipment costs:
         Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;
      iii. Land and site-development costs:

Expenses associated with purchase of land and development of existing property; and

iv. Buildings and services costs:
Costs of process and non-process buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:
i. Engineering expenses:
Cost of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;
ii. Legal fees and license or permit costs:
Administrative and technical costs necessary to obtain licenses and permits for installation and operation;
iii. Start-up and shakedown costs:
Costs incurred during corrective measure start-up; and
iv. Contingency allowances:
Funds needed to cover costs resulting from unforeseen circumstances, such as inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

a. Operating labor costs:
Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

b. Maintenance materials and labor costs:
Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy:
Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services:
Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment costs:
Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;

f. Administrative costs:
Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs:

Costs of such items as liability and sudden accident insurance; real estate taxes on purchased land or right-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: Items not covered by the categories listed above.

III. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Department will select the corrective measure alternative or alternatives to be implemented based on the results obtained from work completed under Section II and III. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proved effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure(s) must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure(s) posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

IV. REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results obtained from Sections I through III and recommending a corrective measure alternative. Copies of the preliminary report shall be provided by the Permittee to the Department for review and approval.

A. Draft

The Report shall at a minimum include:

1. A description of the facility;

   a. Site topographic map and preliminary layouts.

2. A summary of the corrective measure(s) and rationale for selection;

   a. Description of the corrective measure(s) and rationale for selection;

   b. Performance expectations;

   c. Preliminary design criteria and rationale;

   d. General operation and maintenance requirements; and

   e. Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;

   a. Field studies (ground water, surface water, soil, air); and

   b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;

   a. Special technical problems;

   b. Additional engineering data required;

   c. Permits and regulatory requirements;

   d. Access, easements, right-of-way;

   e. Health and safety requirements; and

   f. Community relations activities.

5. Cost Estimates and Schedules;

a. Capital cost estimate;

b. Operation and maintenance cost estimate; and

c. Project schedule (design, construction, and operation).

Copies of the draft shall be provided by the Permittee to the Department.

B. Final

The Permittee shall finalize the Corrective Measure Study Report incorporating comments received from the Department on the Draft Corrective Measure Study Report. The report shall become final upon approval by the Department.

C. Public Review and Final Selection of Corrective Measures

Upon receipt of the Final Corrective Measure Study Report, EPA shall announce its availability to the public for review and comment. At the end of the comment period, the Department shall review the comments and then inform the Permittee of the final decision as to the approved Corrective Measures to be implemented.

APPENDIX D

SCHEDULE OF COMPLIANCE

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SCHEDULE OF COMPLIANCE

Schedule of Compliance	Due Date
Notification of Newly Identified SWMUs and AOCs. Condition II.C.1 and Condition II.C.2.	Within fifteen (15) calendar days of discovery.
SWMU Assessment Report. Condition II.C.3.	Within ninety (90) calendar days of notification.
Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs. Condition II.D.1.	Within fifteen (15) calendar days of discovery.
Confirmatory Sampling Workplan for SWMUs identified in Appendix A. Condition II.E.1.	Within forty-five (45) calendar days of notification by the Department.
Confirmatory Sampling Report. Condition II.E.4.	Within sixty (60) calendar days after approval of the CS Workplan.
RFI Work Plan for SWMU(s) and AOC(s) Identified in Appendix A. Condition II.F.1.a.	Within ninety (90) calendar days after the approval of the Confirmatory Sampling Report.
RFI Work Plan for SWMU(s) and AOC(s) Identified under Condition II.C.4., Condition II.D.2., or Condition II.E.5. Condition II.F.1.b.	Within ninety (90) calendar days after receipt of notification by the Department which SWMUs or AOCs require and RFI.
RFI Progress Reports. Condition II.F.3.a.	Quarterly, beginning ninety (90) calendar days from the start date specified by the Department *
Draft RFI Report. Condition II.F.3.b.	In accordance with the approved RFI Workplan.
Final RFI Report Condition II.F.3.b.	Within thirty (30) calendar days after receipt of the Department's comments on the Draft RFI Report.
Interim Measures Plan Condition II.G.1.a.	Within thirty (30) calendar days of notification by the Department.
Interim Measures Progress Reports Condition II.G.3.a.	In accordance with the approved Interim Measures Workplan. **
Interim Measure Report Condition II.G.3.b.	Within ninety (90) calendar days of completion of interim measures.
CMS Work Plan Condition II.H.1.a.	Within ninety (90) calendar days of notification by the Department that a CMS is needed.
Implementation of CMS Work Plan Condition II.H.2.	Within fifteen (15) calendar days after receipt of Department approval of plan.
Draft CMS Report Condition II.H.3.a.	In accordance with the schedule in the approved CMS Work plan.
Final CMS Report Condition II.H.3.a.	Within thirty (30) calendar days of Department's comments on draft CMS Report.

Schedule of Compliance	Due Date
Demonstration of Financial Assurance Condition II.I.3.	Within one hundred and twenty (120) Calendar days after permit modification for remedy.
Imminent Hazard Report Condition II.M.1. and II.M.2.	Oral within 24 hours; Written within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances.
Waste Minimization Certification Condition III.A.	Annually from effective date of permit.
Organic Air Emissions Report Condition V.B.	Within thirty (30) calendar days after implementation of the unit's modification.
Complete installation of emission control technology for units identified Condition VI.B.	By "Installation Due Date" under Condition VI.B.
Written report of noncompliance of tanks, surface impoundments or containers with 40 CFR 264.1082(c)(1) or (c)(2) Condition VI.D.1.	Within fifteen (15) calendar days of becoming aware of noncompliance.
Written report of noncompliance of tanks with 40 CFR 264.1084(c)(1) or (c)(2) Condition VI.D.2.	Within fifteen (15) calendar days of becoming aware of noncompliance.
Semi-annual Report for Use of Control Devices 40 CFR 264.1090(c) Condition VI.D.3.	Semi-annually, beginning six (6) months from the effective date of the permit. ***

The above reports must be signed and certified in accordance with 40 CFR 270.11 as adopted by 15A NCAC 13A .0113.

* This applies to Workplan execution that requires more than one hundred and eighty (180) calendar days.

** This applies to Workplan execution that requires more than one year.

*** Semi-annual report is not required if provisions of Condition VI.D.4. are met.

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

August 27, 2007

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kevin P. Garon
Project Director
DuPont Corporate Remediation Group
6324 Fairview Road
Charlotte, North Carolina 28210

Re: Hazardous Waste Management Permit
Issuance of Final Permit
DAK Americas/DuPont Facility
EPA ID # NCD 047 369 046

Dear Mr. Garon:

The Notice of Final Permit Decision and the Resource Conservation and Recovery Act (RCRA) permit for DAK Americas/DuPont are enclosed. The permit ensures that corrective action activities and waste management practices are conducted in accordance with applicable North Carolina Hazardous Waste Management Rules. The enclosed permit will constitute the RCRA permit for DAK Americas/DuPont.

If your office has questions concerning the permit or the appeal procedure, please contact Larry Stanley at (919) 508-8562.

Sincerely,

Elizabeth W. Cannon

Elizabeth W. Cannon
Section Chief
NC Hazardous Waste Section

Enclosures

cc: Jon Johnston, US EPA Region 4
Otis Johnston, US EPA Region 4
Ted Bush, DWQ
Winston Price, DAK Americas
Bobby Nelms
Marti K. Lawing, Brunswick County Manager
Donald Yousey, Brunswick County Health Director
Ed Brooks, DCM-CAMA

rc: Bud McCarty
Bob Glaser
Vance Jackson
Larry Stanley
Karim Pathan

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-508-8400 \ FAX 919-715-4061 \ Internet http://wastenotnc.org

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

NOTICE OF FINAL RCRA PERMIT DECISION

Facility Name:	DAK Americas, LLC, and E.I. DuPont de Nemours & Company
EPA ID Number:	NCD 047 369 046
Location:	State Road 1426 Leland, North Carolina 28451
Facility Co-operators:	DAK Americas, LLC, and E.I. DuPont de Nemours & Company
Facility Co-owners:	DAK Americas, LLC, and E.I. DuPont de Nemours & Company

After due consideration of the facts applicable to the above named facility as they appear in the Administrative Record and the requirements and policies expressed in the Resource Conservation and Recovery Act (RCRA) and applicable state regulations (15A NCAC 13A), the NC Department of Environment and Natural Resources has determined that the permit should be issued with the changes to the Draft Permit noted in the attached Responses to Comments.

In accordance with 40 CFR 124.15 as adopted in 15A NCAC 13A .0105, the permit will become effective thirty (30) days after the issue date, unless a review is requested under NCGS 150B and 130A. A review may be requested by filing a written petition to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, North Carolina 27611-6714 and by serving a copy of the petition to Mary P. Thompson, Processing Agent, Department of Environment and Natural Resources, 1601 Mail Service Center, Raleigh, North Carolina 27699-1601.

The Administrative Record, with respect to this permit determination, is maintained at the Department's office, which is located at 401 Oberlin Road, Suite 150, Raleigh, North Carolina 27605. The Administrative Record is available for public inspection between the hours of 9:00 a.m. and 4:00 p.m. Monday through Friday. To inspect the Administrative Record or for further information on this permit action, contact Larry Stanley at (919) 508-8562.

Elizabeth W. Cannon — Aug. 24, 2007

Elizabeth W. Cannon
Section Chief
NC Hazardous Waste Section

Date

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-508-8400 \ FAX 919-715-4061 \ Internet http://wastenotnc.org

DAK Americas/DuPont Cape Fear Facility
Leland, North Carolina
EPA ID # NCD 047 369 046

Draft HSWA-Only RCRA Permit

NC Hazardous Waste Section's Responses to Comments Received During Public Comment Period

The NC Hazardous Waste Section (HWS) received comments on the draft HSWA-only permit issued on April 2, 2007. The comments were received prior to the close of the public comment period, which ended on May 16, 2007. The comments were submitted in writing by DAK Americas, LLC and DuPont-CRG. The comments and the HWS's responses to the comments follow:

A. Comment Submitted by DAK Americas, LLC

DAK Comment: Several sections in the draft permit refer to permitted storage facilities. As stated in the fact sheet, DAK is currently operating with a 90-day storage pad for hazardous waste storage and is not operating with a permitted storage facility. DAK is concerned that, as written, it could be construed that DAK needs to meet all of these storage requirements in their 90-day storage pad. DAK requests that a statement be added to the permit stating that as long as DAK stores its wastes in a 90-day storage pad that it only need to meet the requirements pertaining to a 90-day storage facility and not the requirements listed in the referenced permit.

HWS Response: In the above comment and during subsequent conversations, DAK indicated that the conditions of the HSWA-only permit do not apply since DAK does not meet the definition of a RCRA treatment, storage or disposal facility. Specifically, the requirements for a waste minimization program and for a 24-hour time limit on reporting a hazard which may endanger health or the environment were used as examples of such permit conditions.

DAK and DuPont must comply with the conditions of the final HSWA-only permit. DAK and DuPont are both listed on the Part A Permit as co-owner and co-operator.

The two specific objections raised by DAK are addressed, although somewhat differently, by the generator rules. As far as emergency reporting is concerned, large quantity generators must comply with Subpart D-Contingency Plan and Emergency Procedures of 40 CFR 265 (see 40 CFR 262.34(a)(4)). As suggested by the previous paragraph, the HWS believes DAK should comply with Condition I.D.15. of the final permit with respect to reporting a hazard.

Large quantity generators must submit a biennial report which requires a description of 1) efforts undertaken to reduce the volume and toxicity of generated wastes and of 2) the changes of volume and toxicity actually achieved. The HWS will add language to Part III of the final permit indicating that DAK is not required to maintain the waste minimization program detailed in 40 CFR 264.73(b)(9)).

B. Comments Submitted by DuPont-CRG

1. Comments on the Fact Sheet:

DuPont-CRG Comment # 1: Please refer to page 2 of the fact sheet. In the top line (a continuation from the previous page discussing miscellaneous wastes) there is a reference to "low-level radioactive wastes". We are unaware of any low-level radioactive wastes ever being managed or disposed of at the facility. We have reviewed our files and DAK Americas has reviewed files available at the site and still we can find no record of ever managing or disposing of any low level radioactive wastes at the facility. While we did find a statement suggesting that miscellaneous wastes at the site included low level radioactive wastes in the EI documentation sent to NCDENR in 2000, we suspect that this reference was referring to another DuPont facility and was erroneously included in the Cape Fear EI report submittal. The discussion of low level radioactive wastes was not included in the final Cape Fear EI report submitted in 2004.

HWS Response to Comment #1: The reference to "low-level radioactive wastes" in a description of wastes disposed of at the DAK/DuPont Cape Fear facility apparently first appeared in the facility's 2000 Environmental Indicator Evaluation. HWS personnel involved with the 2000 EI Evaluation recall that DuPont-CRG approved the use of this description. At the time, the HWS was under the impression that wastes generated at other DuPont facilities, including low-level radioactive wastes, were previously disposed of at the Cape Fear facility.

In the opinion of the HWS, the file searches conducted by DuPont and DAK have definitively addressed the issue of disposal of low-level radioactive wastes at the DAK/DuPont Cape Fear facility. The HWS will revise the Fact Sheet and remove the reference to low-level radioactive wastes. The revised Fact Sheet and these Responses to Comments will become part of the public record.

DuPont-CRG Comment #2: In the first full paragraph on page 2 of the Fact Sheet, it states that "at one time, much of the wastes generated by plant operations were disposed of on-site in pits, trenches and landfills." This generalized statement is misleading since wastes were not disposed of in pits or trenches after 1984. All three site landfills have now been closed under North Carolina Solid Waste regulations and are in post-closure monitoring.

HWS Response to Comment #2: The on-site RCRA disposal units (SWMUs) listed in the permit application and draft renewal permit are predominantly landfills. (This is also true for the original RCRA Part B permit.) The Fact Sheet text will be revised to state that "at one time, much of the wastes generated by plant operations were disposed of on-site in a series of landfills."

As a point of clarification, please note that the Permittee must detect, characterize, and respond to releases from Solid Waste Management Units (SWMUs) "regardless of the time at which the waste was placed in such units." The quoted text in the previous sentence is from 40 CFR 264.90(a)(1) (as adopted in the NC Hazardous Waste Management Rules at 15A NCAC 13A .0109).

2. Comments on the Draft Permit:

DuPont-CRG Comment #3: Section C(1) and (2). Notification of any new SWMUs/AOCs is required within 15 days of discovery. We request a period of 30 days since the notification is to include all available information about the unit.

HWS Response to Comment #3: Upon receipt of notification that a new SWMU or AOC has been discovered, the HWS must make a decision as whether an interim measure or stabilization is needed. Consequently, the HWS believes prompt notification of the discovery is essential. The Permittee can request a time extension for the submittal of required information, but the HWS would like to have the option to address such requests on a case-by-case basis.

The draft permit will not be revised for this comment.

DuPont-CRG Comment #4: Section G(1)(a). The IM Workplan is to be submitted within 30 days of notification to the Permittee by the Department. We request 60 days so as to ensure a sufficient amount of time to prepare a thorough and complete work plan.

HWS Response to Comment #4: An Interim Measure is usually undertaken outside the normal RCRA corrective action process. Interim Measures are frequently initiated to characterize, stabilize, or remediate a perceived imminent hazard. The Permittee may request a time extension for the submittal of an Interim Measures Work Plan, but the HWS would like to have the option of addressing such requests on a case-by-case basis.

The draft permit will not be revised for this comment.

DuPont-CRG Comment #5: Section H(2). Implementation of the CMS is to begin within 15 days after approval by the Department. We request a period of 30 days to account for the potential need to secure contractors and mobilize, if necessary.

HWS Response to Comment #5: A thirty-day time limit after approval of the CMS for the Permittee to implement the Corrective Measure(s) is acceptable to the HWS. The draft permit will be revised accordingly.

DuPont-CRG Comment #6: Section H(3)(b). If the Department disapproves the CMS Final Report, it can specify a due date for a revised date. We request that you insert after "a due date" the words "not less than 30 days.." to allow some time for corrective revisions to be completed.

HWS Response to Comment #6: The proposed revision to Permit Condition II.H.3.b. is acceptable to the HWS, and the draft permit will be changed accordingly.

DuPont-CRG Comment #7: Under Part II.H. Corrective Measures Study, it appears that 1.a. indicates that we are required to submit a CMS work plan 90 days after notification by the

NCDENR. The permit lists in Appendix A those units needing a CMS. Does the finalization of the permit represent notification that a CMS is due and therefore the 90 days starts from the effective date of the permit? While we are investigating individual units, we have looked at groundwater holistically for the site and would like to finalize the RFI on a site-wide basis, and then go into a site-wide CMS.

HWS Response to Comment #7: Issuance of the final permit does not start the clock for submittal of a CMS work plan by DuPont. The HWS will notify DuPont in writing when a CMS is required. However, depending upon the circumstances, the HWS may require a CMS for an individual unit, or a group of units, before the facility-wide RFI has been completed.

DuPont-CRG Comment #8: Under Part II.J. Cost Estimate for Completion of Corrective Action, it is unclear as to how this might be performed prior to completion of the RFI and/or CMS. Typically financial assurance has been required once a final remedy has been selected. This is how Superfund program operates as well at any of the RCRA corrective actions sites we have assured around the nation to-date. The wording in Part II.J.2.seems to indicate that it is a regulatory requirement under 40 CFR 264.90(a)(2), 264.100, and 264.101 to provide this type of estimate for RCRA corrective action. While we recognize that there is a stipulation under 40 CFR 264.101 to show financial responsibility for corrective action, there are no detailed regulations stating how or when in the process this is required. We have no concern with providing financial assurance as indicated in the draft permit in section Part II.K.; however, we are not confident as to how we might be able to estimate the cost of an action before the investigation is complete. We also are not sure what implications this might have on permit modifications. It would be expected that as more investigation is completed and we get closer to selecting a final remedy, the cost estimate and amount of financial assurance would be updated, perhaps frequently. Would each change constitute a major modification to the permit and therefore need public notification and review? Also, when the final remedy is selected the permit will need modification as well. If this new policy on finance assurance is implemented, it may potentially create administrative delays in remediating sites.

HWS Response to Comment #8: The HWS made a policy decision that financial assurance will be required for all future corrective action activities at a facility.
Facilities must develop a reasonable path forward and post financial assurance for their corrective action plan. The proposed corrective action strategy should lead to remedial Operation and Maintenance for the site. The O&M phase is assumed to be for a set period of time--probably thirty years. The time period cannot be reduced unless there is technical justification for the reduction.

The HWS anticipates that most revisions to the corrective action plan and corrective action cost estimate can be timed to coincide with the annual adjustments for inflation required by the permit. Aside from these annual reviews and revisions, the HWS believes there will be only a limited number of major changes to the facility's corrective action strategy and cost estimate that will require immediate revisions.

The HWS does not anticipate that each change in the financial assurance cost estimate will necessitate a permit modification. Permit modifications will be required for those activities that

would have triggered a modification before the new financial assurance policy was adopted. The act of revising a financial assurance cost estimate, by itself, does not require a permit modification.

FACT SHEET

Facility Location

DAK/DuPont-Cape Fear Plant
State Road 1426
Leland, NC 28451

Regulatory Authority

Under authority of the Federal Resource Conservation and Recovery Act (RCRA), a Draft Renewal Permit has been prepared that requires DAK/DuPont-Cape Fear to conduct corrective action activities at the facility indicated above. North Carolina has been authorized by the United States Environmental Protection Agency to administer RCRA, including the Hazardous and Solid Waste Amendments (HSWA) of 1984. The State has determined that DAK/DuPont's proposed activities, as identified in the permit application, satisfy the full intent of the North Carolina Hazardous Waste Management Rules and Solid Waste Management Act as amended. This renewal permit is issued by the State of North Carolina and constitutes a complete permit under the Resource Conservation and Recovery Act.

Facility Summary

The DAK/DuPont-Cape Fear facility is located on State Road No. 1426 near the northeastern boundary of Brunswick County. It is approximately six miles north of Leland, North Carolina and approximately 15 miles northwest of Wilmington, North Carolina. The facility is adjacent to the Cape Fear River, which runs along the northern and eastern limits of the facility property.

The DAK plant began operations in 1968 and continues to manufacture polyester resin and fibers. In addition, terephthalic acid (TPA) and dimethylterephthalate (DMT) intermediates were produced on-site for use in polyester production. Polyester production is accomplished using TPA and ethylene glycol as the two main ingredients. In the process, the two compounds are combined at a temperature exceeding 400 degrees Fahrenheit to form a liquid. The hot liquid is pumped through a series of vessels where the formation of a polymer occurs. The liquid polymer is then fed through plates with very small holes and immediately cooled with air into the solid fiber form. The fibers are wound onto bobbins or placed in bulk form into bales for shipment to customer textile mills.

The plant generates, or has generated, the following wastes: 1) process, non-process and sanitary waste waters and storm water runoff; 2) trade wastes facility sludge; 3) laboratory wastes; 4) subsurface collection system wastes; 5) finish oils; 6) spent triethylene glycol; 7) waste terephthalic acid; 8) waste *Dowtherm*®; 9) waste motor oil, antifreeze, and waste lubricating oils; 10) spent acidic and caustic solutions; 11) power plant ash; 12) non-hazardous refuse; 13) incinerator residues; 14) waste from contractor operations (maintenance and construction); and 15) miscellaneous wastes. Miscellaneous wastes include contaminated glycol, waste monomer, solvents, waste regenerate from ion exchange columns, wastes generated during fire training exercises, wastes resulting from drum cleaning

activities, waste water stored in an organic stripping column tank, and wastes generated at an oil de-watering area.

At one time, much of the wastes generated by plant operations were disposed of on-site in a series of landfills. These landfills are located between the plant buildings and the Cape Fear River and have been identified as Solid Waste Management Units (SWMUs) under the RCRA Corrective Action Program.

In 2001, the manufacturing plant was sold to DAK Americas, LLC. DuPont retained ownership of outlying areas, including most waste disposal units. Wetland acreage has been placed in a conservation easement overseen by the NC Coastal Land Trust.

Regulatory History and Corrective Action Status

In 1989, a RCRA Hazardous Waste Management Permit was issued to the DuPont-Cape Fear plant for the operation of a hazardous waste storage pad. Prior to selling a business interest in the facility to DAK Americas, DuPont applied to renew their operating permit. After the sale, DAK elected to move to its own less than 90-day drum storage pad, and DuPont decided to close the permitted storage unit. DuPont's hazardous waste storage pad was clean closed in 2004.

DAK and DuPont submitted a HSWA-only permit application in 2004. This permit application lists seventy-six SWMUs and six Areas of Concern (AOCs). The draft renewal permit designates eight of these units as requiring RCRA Facility Investigation (RFI) activities. The draft renewal permit also indicates that a Corrective Measures Study is required for an additional seven RCRA units.

Phase I of the RFI was performed to address the five SWMUs designated by the 1989 permit as requiring investigation. Both soil and groundwater samples were collected at these units. Following Phase I of the RFI, additional SWMUs were added to the list of units requiring investigation. The units were investigated as part of Phase II of the RFI. Phase II, which was completed in 2001, included a lithologic investigation, soil sampling, monitoring well installations, and site-wide groundwater monitoring. As part of Phase II RFI activities, DuPont prioritized all SWMUs and AOCs based on the potential risks posed by a release from each unit. Phase III of the RFI was completed in 2004. Its objectives were to fill data gaps identified during Phase II investigations, investigate units brought forward from a Baseline Environmental Site Assessment conducted by DAK Americas and a SWMU prioritization project, complete data collections necessary to achieve Environmental Indicator goals, and establish a site-wide groundwater monitoring program. In 2006 the facility proposed Phase IV of the RFI.

DuPont has conducted several voluntary environmental investigations. These investigations include the 1994 sump investigation at SWMU 1B, the 1995 investigations at SWMUs 2 and 12, and the 1997 parazylene release investigation at AOC A. The results of these investigations were reported to the NC Hazardous Waste Section and included in later RFI work plans and reports. (Interim remedial measures were implemented to address impacts to surface soil at AOC A.) In addition, DAK Americas performed a Baseline Environmental Site Assessment prior to their purchase of the Cape Fear property. SWMUs 53, 54, and 59 are landfills permitted through the NC Solid

Waste Section. A groundwater monitoring program for each of these units is required through the Solid Waste Section's permits.

Several RCRA units have released chemical constituents to the environment. Constituents with concentrations that exceed applicable groundwater standards include 1,4-dioxane, benzene, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, vinyl chloride, diphenyl ether, triethylene glycol, arsenic, lead, naphthalene, biphenyl, ethylene glycol, and cobalt. A similar list of constituents has been detected in soil. Surface water samples collected on the DAK/DuPont property indicate lead, arsenic, cobalt, vanadium, and copper exceed surface water standards. Indoor air sampling and modeling indicate that vapor intrusion is not an issue at the facility. (An Environmental Indicator evaluation completed in 2005 demonstrated that "human exposures are under control" and that the "migration of contaminated groundwater is under control.") Impacts to environmental media that exceed appropriate standards will be further addressed through a Corrective Measures Study and Corrective Measures Implementation.

Public Participation in the Permit Renewal Process

The North Carolina Hazardous Waste Management Rules require that the public be given a forty-five (45) day period to comment on the draft renewal permit. This forty-five (45) day period will commence on April 2, 2007. The draft renewal permit is available for review from 9:00 a.m. to 4:00 p.m., Monday through Friday. All permit renewal information submitted by DAK/DuPont-Cape Fear is part of the administrative record and is available for review. Persons wishing to comment on this draft renewal permit or to object to permit issuance should submit such comments in writing prior to the close of business on May 16, 2007. All comments received within the forty-five (45) day period will be considered before the final permit decision is made. Comments should be sent to:

Ms. Elizabeth W. Cannon, Chief
North Carolina Hazardous Waste Section
Mail Service Center 1646
Raleigh, NC 27699-1646

A public hearing to receive comments concerning the issuance of the proposed renewal permit will be held on May 2, 2007 at 11:00 AM in the Leland Town Hall. The Leland Town Hall is located at 102 Town Hall Drive, Leland, North Carolina. Attendees may submit a written statement for the official record in addition to their oral statement, or they may submit written comments in lieu of making an oral presentation. Everyone who makes oral and/or written comments will receive a notice, along with the written response to your comments, when the Hazardous Waste Section makes a decision regarding the renewal permit.

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I.D. NUMBER NCD 047 369 046 DATE ISSUED August 27, 2007
PERMIT NO. NCD 047 369 046 R1

Hazardous Waste Management Permit

Permittee:	DAK Americas, LLC, and State Road 1426 Leland, NC 28451	E.I. DuPont de Nemours & Company State Road 1426 Leland, NC 28451
Owner:	DAK Americas, LLC, and P.O. Box 2042 Wilmington, NC 28402	E.I. DuPont de Nemours & Company 6324 Fairview Road Charlotte, NC 28210

Pursuant to the 15A NCAC 13A North Carolina Hazardous Waste Management Rules, a Hazardous and Solid Waste Amendments (HWSA) permit is issued to the DAK America, LLC, and E.I. DuPont de Nemours & Company, a hazardous waste facility located in the Cape Fear River Basin in Leland, Brunswick County on State Road 1426, at latitude 34° 19′ 00″ N and longitude 78° 02′ 30″ W.

The Permittee must comply with all terms and conditions of the permit. This permit consists of the conditions discussed in Parts I, II, III IV, V and VI, the applicable regulations contained in 15A NCAC 13A including the applicable provisions of 40 CFR Parts 260 through 264, 266, 268, 270 and 124, statutory requirements of N.C.G.S. 130A-Article 9 (Solid Waste Management Act as amended) and the attached Application.

Applicable regulations are those which are in effect on the date of issuance of this permit [40 CFR 270.32(c) as adopted in 15A NCAC 13A.0113] and are attached.

This permit is based on the assumption that the information submitted in the permit application and as modified by subsequent amendments (hereafter referred to as the Attachment) is accurate and that the facility will be operated as specified in the Attachment. Any inaccuracies found in this information could lead to the termination or modification of this permit and potential enforcement action [40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0113]. The Permittee shall inform the North Carolina Department of Environment and Natural Resources of any deviation from or changes in the information in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit is effective as of September 27, 2007, and shall remain in effect for ten (10) years until September 27, 2017, [40 CFR 270.50 as adopted in 15A NCAC 13A .0113] unless revoked and reissued, terminated or continued in accordance with 40 CFR 270.51 as adopted in 15A NCAC 13A .0113.

Elizabeth W. Cannon, Chief
NC Hazardous Waste Section

Aug. 27 2007
Date

The State of North Carolina
Department of Environment and Natural Resources
Division of Waste Management
Hazardous Waste Section

NCDENR
North Carolina Department of Environment and Natural Resources

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APPENDICES TO THE PERMIT

Appendix A	Solid Waste Management Units and Areas of Concern Summary
Appendix B	RCRA Facility Investigation (RFI) Workplan Outline
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Attachments

DAK/ DuPont Hazardous Waste Part B Application

Section	Topic
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Regulations

15A NCAC 13A	February 6, 2007 Certification

PART I - STANDARD CONDITIONS

A. EFFECT OF PERMIT

Compliance with this permit constitutes compliance, for purposes of enforcement, with the N.C. Hazardous Waste Management Rules (15A NCAC 13A) and N.C.G.S. 130A-Article 9 (Solid Waste Management Act as amended). Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under any law governing protection of public health or the environment for any imminent and substantial endangerment to human health or the environment.

B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0113. The filing of a request for a permit modification, revocation and re-issuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. DUTIES AND REQUIREMENTS

1. Duty to Comply. The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued under 40 CFR 270.61 as adopted in 15A NCAC 13A .0113. Any permit noncompliance constitutes a violation of N. C. Hazardous Waste Management Rules and N.C.G.S. 130A-Article 9 (Solid Waste Management Act as amended) and is grounds for enforcement action, permit termination, revocation and re-issuance, modification, or for denial of a permit renewal application.

2. Duty to Reapply. If the Permittee will continue an activity allowed or required by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least 180 days before this permit expires.

3. Obligation for Corrective Action. Owners and operators of hazardous waste management units must have a permit during the active life of the unit and for any period necessary to comply with the corrective action requirements of this permit.

4. Permit Expiration. This permit and all conditions therein will remain in effect beyond the permit's expiration date and until a decision is made concerning issuance of a new permit if the Permittee has submitted a complete application at least 180 days before the expiration of the permit (see 40 CFR 270.14-270.29 and 270.10 as adopted in 15A NCAC 13A .0113) and through no fault of the Permittee, the Secretary of the Department of Environment and Natural Resources or his designee

(hereafter referred to as the Department) has not issued a new permit as set forth in 40 CFR 124.15 as adopted in 15A NCAC 13A .0105.

5. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

6. Duty to Mitigate. The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

7. Proper Operation and Maintenance. The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control, monitoring and remediation (and related appurtenances) used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of the permit.

8. Duty to Provide Information. The Permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

9. Inspection and Entry. The Permittee shall allow the Department or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

   a. Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the N. C. Hazardous Waste Management Rules, any substances or parameters at any location.

10. Monitoring and Records.

   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261 as adopted in 15A NCAC 13A .0106 or an equivalent method approved by the Department. Laboratory methods must be those specified in the most recent edition of Test Methods for Evaluating Solid Waste:

Physical/Chemical Methods, SW-846, or an equivalent method approved by the Department.

b. The Permittee shall retain records of all monitoring information required under the terms of this permit (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), records of all data used to prepare documents required by this permit, copies of all reports and records required by this permit, the certification required by 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109, and records of all data used to complete the application for this permit for a period of at least three (3) years from the date of the sample, measurement, report or record, or until corrective action is completed, whichever date is later. As a generator of hazardous waste, the Permittee shall retain on-site a copy of all notices, certifications, demonstrations, waste analysis data, and other documents produced pursuant to 40 CFR 268 as adopted in 15A NCAC 13A .0112 for at least three (3) years from the date that the waste which is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal, or until corrective action is completed, whichever date is later. These periods may be extended by request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

c. Records of monitoring information shall include:

i. The date, exact place, and time of sampling or measurements;
ii. The individual(s) who performed the sampling or measurements;
iii. The date(s) analyses were performed;
iv. The individual(s) who performed the analyses;
v. The analytical techniques or methods used; and
vi. The results of such analyses.

11. Reporting Planned Changes. The Permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility, including alterations or additions which may impact any Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), or the areas contaminated by them, including voluntary corrective measures to the SWMUs or AOCs listed in Appendix A at the permitted facility as defined in 40 CFR 270.2 as adopted in 15A NCAC 13A .0113.

12. Anticipated Noncompliance. The Permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

13. Transfer of Permits. This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 40 CFR 270.40, 270.41 and 270.42 as adopted in 15A NCAC 13A .0113. Before transferring ownership or operation of the facility, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR 264 as adopted in 15A NCAC 13A .0109 and 40 CFR 270 as adopted in 15A NCAC 13A .0113, HSWA and this permit.

14. Compliance Schedules. Written notification of compliance or noncompliance with any item identified in the compliance schedule of this permit shall be submitted according to the schedule date. If the Permittee does not notify the Department within fourteen (14) calendar days of its compliance or noncompliance with the schedule, the Permittee

shall be subject to enforcement action. Submittal of a required item according to the schedule constitutes notification of compliance.

15. Twenty-four Hour Reporting. The Permittee shall report to the Department any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

    a. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

    b. Any information of a release or discharge of hazardous waste, or of a fire or explosion from the facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:

        i. Name, address, and telephone number of the owner or operator;
        ii. Name, address, and telephone number of the facility;
        iii. Date, time, and type of incident;
        iv. Name and quantity of material(s) involved;
        v. The extent of injuries, if any;
        vi. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
        vii. Estimated quantity and disposition of recovered material that resulted from the incident.

    A written submission shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times), and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Permittee need not comply with the five-day written notice requirement if the Department waives that requirement and the Permittee submits a written report within fifteen (15) days of the time the Permittee becomes aware of the circumstances.

16. Other Noncompliance. The Permittee shall report all other instances of noncompliance not otherwise required to be reported at the time monitoring reports are submitted. The reports shall contain the information listed in Condition I.D.15.

17. Other Information. When the Permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Department, the Permittee shall promptly submit such facts or information.

E. SIGNATORY REQUIREMENTS

All reports or other information requested by the Department shall be signed and certified according to 40 CFR 270.11 as adopted in 15A NCAC 13A .0113.

F. BIENNIAL REPORT

If required because of the Permittee's waste generation status the Permittee shall prepare and submit a biennial report by March 1 of each even numbered year in accordance with 40 CFR 264.75 as adopted in 15A NCAC 13A .0109. The biennial report must be submitted on EPA form 8700-13 A/B. The report must cover facility activities during the previous calendar year.

G. DEFINITIONS

For purposes of this permit, terms used herein shall have the same meaning as those in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law unless this permit specifically provides otherwise; where terms are not defined in 15A NCAC 13A, G.S. 130A - Article 9, the permit, or United States Environmental Protection Agency guidance documents and publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

H. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR 270.12 as adopted in 15A NCAC 13A .0113.

I. APPROVAL/DISAPPROVAL OF SUBMITTALS

The Department will review the work plans, reports, schedules, and other documents ("submittals") which require the Department's approval in accordance with the conditions of this permit. The Department will notify the Permittee in writing of any submittal that is disapproved, and the basis therefore. Condition I.J. shall apply only to submittals that have been disapproved and revised by the Department, or have been disapproved by the Department, then revised and resubmitted by the Permittee, and again disapproved by the Department.

J. DISPUTE RESOLUTION

Notwithstanding any other provisions in this permit, in the event the Permittee disagrees, in whole or in part, with the Department's revision of a submittal or disapproval of any revised submittal required by the permit, the following may, at the Permittee's discretion, apply:

1. In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Department in writing within thirty (30) days of receipt of the Department's revision of a submittal or disapproval of a revised submittal. Such notice shall set forth the specific matters in dispute, the position the Permittee asserts should be adopted as consistent with the requirements of the permit, the basis for the Permittee's position, and any matters considered necessary for the Department's determination.

2. The Department and the Permittee shall have an additional thirty (30) days from the Department's receipt of the notification provided for in Condition I.J.1. to meet or confer to resolve any disagreement.

3. In the event an agreement is reached, the Permittee shall submit the revised submittal and implement the same in accordance with and within the time frame specified in such agreement.

4. If agreement is not reached within the thirty (30) day period, the Department will notify the Permittee in writing of his/her decision on the dispute, and the Permittee shall comply with the terms and conditions of the Department's decision in the dispute. For the purposes of this provision in this permit, the responsibility for making this decision shall not be delegated below the Chief of the Hazardous Waste Section.

   Invoking any of the dispute resolution procedures of this section does not preclude the Permittee from exercising any of its other rights to petition for a contested case hearing or appeal in accordance with N.C. General Statute 150B. Nor does invoking any of the dispute resolution procedures of this section extend or delay the time periods in which the Permittee must exercise any of those other rights to petition or appeal.

5. With the exception of those conditions under dispute, the Permittee shall proceed to take any action required by those portions of the submission and of the permit that the Department determines are not affected by the dispute.

K. Special Conditions.

1. When a discrepancy exists between the wording of an item in the Application and this permit, the permit requirements take precedence over the Application.

2. When a discrepancy exists between the RCRA Facility Assessment (RFA) report (attached as part of the permit) and this permit as to the future requirements to be taken at the facility, the permit requirements take precedence over the requirements proposed in the RFA report.

PART II - CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS (SWMUs) AND AREAS OF CONCERN (AOCs)

A. APPLICABILITY

The Conditions of this Part apply to:

1. The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Appendix A of the permit, which require a RCRA Facility Investigation (RFI). Unit locations are shown on Figure 1, which is also located in Appendix A of the permit.

2. The SWMUs and AOCs identified in Appendix A which require no further investigation at this time.

3. The SWMUs and AOCs identified in Appendix A which require confirmatory sampling. Unit locations are shown on Figure 1, which is also located in Appendix A of the permit.

4. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means.

5. Contamination beyond the facility boundary, if necessary. The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Department that, despite the Permittee's best efforts, as determined by the Department, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for completion of such off-site corrective action will be required.

6. The SWMUs and AOCs identified in Appendix A which require a Corrective Measures Study (CMS).

B. DEFINITIONS

For purposes of this Part, the following definitions shall be applicable:

1. The term "area of concern" (AOC) includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Department to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005 (c)(3) of the Resource Conservation and Recovery Act and 40 CFR 270.32 (b)(2) as adopted in 15A NCAC 13A .0113 in order to insure adequate protection of human health and the environment.

2. Corrective Action shall be defined as all activities including activities conducted beyond the facility boundary, that are proposed or implemented to facilitate assessment, monitoring, and active or passive remediation of releases of hazardous waste or hazardous constituents to soil, groundwater, surface water, or the atmosphere associated with Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), and/or Areas of Concern (AOCs) located at the facility or off-

site, as required by 40 CFR 264.100 and 264.101 and adopted in 15A NCAC 13A .0109 or as otherwise required and specified by this permit.

3. A "Corrective Action Management Unit" (CAMU) includes any area within a facility that is designated by the Department under part 264 Subpart S, for the purpose of implementing corrective action requirements under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and RCRA section 3008(h). A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.

4. "Corrective measures" include all corrective action necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any area of concern or solid waste management unit at the facility, regardless of the time at which waste was placed in the unit, as required under 40 CFR 264.101 as adopted by 15A NCAC 13A .0109. Corrective measures may address releases to air, soils, surface water or ground water.

5. "Extent of contamination" is defined as the horizontal and vertical area in which the concentrations of the hazardous constituents in the environmental media are above detection limits or background concentrations indicative of the region, whichever is appropriate as determined by the Department.

6. "Facility" includes all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g. one or more landfills, surface impoundments, or combination of them). For the purposes of implementing corrective action under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109, a facility includes all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

7. A "hazardous constituent" for the purposes of this Part are those substances listed in 40 CFR Part 261 Appendix VIII as adopted in 15A NCAC 13A .0106 or 40 CFR 264 Appendix IX as adopted in 15A NCAC 13A .0109.

8. "Interim Measures" are actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented.

9. The term "land disposal" means placement in or on the land except for a CAMU and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

10. "Landfill" includes any disposal facility or part of a facility where waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

11. A "release" for purposes of this Part includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

12. "Remediation waste" includes all solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of implementing corrective action requirements under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and RCRA section 3008 (h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA sections 3004 (v) or 3008 (h) for releases beyond the facility boundary.

13. The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

14. A "solid waste management unit" (SWMU) for the purposes of this Part includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. Solid Waste Management Units include areas which have become contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g., product or process spills).

15. A "Temporary Unit" (TU) includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during specific remediation activities. Designated by the Department, such units must conform to specific standards, and may only be in operation for a period of time as specified in this permit.

16. A "unit" for the purposes of this Part includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, waste water treatment unit, elementary neutralization unit, transfer station, or recycling unit.

C. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

1. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any additional SWMUs as discovered under Condition II.A.4.

2. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any Areas of Concern (AOCs) as discovered under Condition II.A.4. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). If the Department determines that further investigation of an AOC is required, the

Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1. or Condition II.F.1.

3. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Condition II.C.1. At a minimum, the SAR shall provide the following information:

   a. Location of unit(s) on a topographic map of appropriate scale such as required under 40 CFR 270.14(b)(19), as adopted in 15A NCAC 13A .0113.

   b. Designation of type and function of unit(s).

   c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

   d. Dates that the unit(s) was operated.

   e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the waste.

   f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include ground-water data, soil analyses, air, and/or surface water data).

4. Based on the data in the SAR, the Department shall determine the need for further investigations at the SWMUs covered in the SAR. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1. or Condition II.F.1.

D. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUs AND AOCs

1. The Permittee shall notify the Department in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of ground-water monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Condition II.A.2. or SWMUs or AOCs identified in Condition II.A.4.for which further investigation under Condition II.C.4. was not required.

2. If the Department determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.F.1.b.

E. CONFIRMATORY SAMPLING (CS)

1. The Permittee shall prepare and submit to the Department, within forty-five (45) calendar days of notification by the Department, a Confirmatory Sampling (CS) Workplan to determine any release from SWMUs and AOCs identified in Condition II.A.4. or Appendix A. The CS Workplan shall include schedules of implementation and completion of specific actions necessary to determine a release. It should also address applicable requirements and affected media.

2. The CS Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the CS

Workplan schedule in the letter approving the CS Workplan. If the Department disapproves the CS Workplan, the Department shall either (1) notify the Permittee in writing of the CS Workplan's deficiencies and specify a due date for submission of a revised CS Workplan, or (2) revise the CS Workplan and notify the Permittee of the revisions, or (3) conditionally approve the CS work plan and notify the Permittee of the conditions.

3. The Permittee shall implement the confirmatory sampling in accordance with the approved CS Workplan.

4. The Permittee shall prepare and submit to the Department in accordance with the approved schedule, a Confirmatory Sampling (CS) Report, within sixty (60) calendar days after approval of the CS Workplan, identifying those SWMUs and AOCs described in Condition II.A.4. or listed in Appendix A, that have released hazardous waste or hazardous constituents into the environment. The CS Report shall include all data, including raw data and a summary and analysis of the data, that supports the above determination.

5. Based on the results of the CS Report, the Department shall determine the need for further investigations at the SWMUs and AOCs covered in the CS Report. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.F.1.b. The Department will notify the Permittee of any "no further action" decision.

F. RCRA FACILITY INVESTIGATION (RFI)

1. RFI Workplan(s)

a. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of the approval of the Confirmatory Sampling Report, a RCRA Facility Investigation (RFI) Workplan for those units identified in Condition II.A.1. This Workplan shall be developed to meet the requirements of Condition II.F.1.c.

b. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of notification by the Department, an RFI Workplan for those units identified under Condition II.C.4., Condition II.D.2. or Condition II.E.5. This RFI Workplan(s) shall be developed to meet the requirements of Condition II.F.1.c.

c. The RFI Workplan(s) shall meet the requirements of Appendix B at a minimum. The Workplan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases and the potential pathways of contaminant releases to the air, land, surface water, and ground water. The Permittee must provide sufficient justification and/or documentation that a release is not probable if a unit or a media/pathway associated with a unit (ground water, surface water, soil, subsurface gas, or air) is not included in the RFI Workplan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Department. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix B. Such omissions or deviations are subject to the approval of the Department. The RFI Workplan may be phased to allow for subsequent investigatory activity to be contingent upon the initial phase findings. If the scope of the Workplan(s) is designed to be an initial phase, the initial phase must summarize all potential final

phase activities needed to meet the requirements of this condition. In addition, the scope of the RFI Workplan(s) shall include all investigations necessary to ensure compliance with 40 CFR 264.101(c) as adopted in 15A NCAC 13A .0109.

d. The RFI Workplan(s) must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the RFI Workplan schedule in the letter approving the RFI Workplan(s). If the Department disapproves the RFI Workplan(s), the Department shall either (1) notify the Permittee in writing of the RFI Workplan's deficiencies and specify a due date for submission of a revised RFI Workplan, or (2) revise the RFI Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Workplan, or (3) conditionally approve the RFI work plan and notify the Permittee of the conditions.

2. RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Workplan(s) and Appendix B. The Permittee shall notify the Department twenty (20) days prior to any sampling activity.

3. RFI Reports

a. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Department with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the start date specified by the Department in the RFI Workplan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the RFI completed;

ii. Summaries of findings;

iii. Summaries of any deviations from the approved RFI Workplan during the reporting period;

iv. Summaries of any significant contacts with local community public interest groups or state government;

v. Summaries of any problems or potential problems encountered during the reporting period;

vi. Actions taken to rectify problems;

vii. Changes to relevant personnel;

viii. Projected work for the next reporting period; and

ix. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

b. The Permittee shall prepare and submit to the Department Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the Workplan(s) submitted under Condition II.F.1. The Draft RFI Report(s) shall be submitted to the Department for review in accordance with the schedule in the approved RFI Workplan(s). The Final RFI Report(s) shall be

submitted to the Department within thirty (30) calendar days of receipt of the Department's comments on the Draft RFI Report. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, and a description of actual or potential receptors. The Report(s) shall also describe the extent of contamination (qualitative/ quantitative) in relation to background levels indicative of the area. If the Draft RFI Report is a summary of the initial phase investigatory work, the report shall include a workplan for the final phase investigatory actions required based on the initial findings. Approval of the final phase workplan shall be carried out in accordance with Condition II.F.1.d. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

c. The Department will review the Final RFI Report(s) and notify the Permittee of the need for further investigative action and/or the need for a Corrective Measures Study to meet the requirements of Condition II.[illegible] Appendix C and 40 CFR 264.101 as adopted in 15A NCAC 13A .[illegible] will notify the Permittee of any [illegible]ny further investigative action [illegible] shall be prepared and submitted in accordance with a schedule specified by the Department and approved in accordance with Condition II.F.1.d.

G. INTERIM MEASURES (IM)

1. IM Workplan

a. Upon notification by the Department, the Permittee shall prepare and submit an Interim Measures (IM) Workplan for any SWMU or AOC which the Department determines is necessary. IM are necessary in order to minimize or prevent the further migration of contaminants and limit human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented. The IM Workplan shall be submitted within thirty (30) calendar days of such notification and shall include the elements listed in II.G.1.b. Such interim measures may be conducted concurrently with investigations required under the terms of this permit. The Permittee may initiate IM by submitting an IM Workplan for approval and reporting in accordance with the requirements in Condition II.G.

b. The IM Workplan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and to be consistent with and integrated into any long-term solution at the facility. The IM Workplan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

c. The IM Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the IM Workplan schedule in the letter approving the IM Workplan. If the Department disapproves the IM Workplan, the Department shall either (1) notify the Permittee in writing of the

IM Workplan's deficiencies and specify a due date for submission of a revised IM Workplan, or (2) revise the IM Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Workplan, or (3) conditionally approve the IM Workplan and notify the Permittee of the conditions.

2. IM Implementation

a. The Permittee shall implement the interim measures in accordance with the approved IM Workplan.

b. The Permittee shall give notice to the Department as soon as possible of any planned changes, reductions, or additions to the IM Workplan.

c. Final approval of corrective action required under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 which is achieved through interim measures shall be as a permit modification (i.e., in accordance with 40 CFR 270.41 as adopted in 15A NCAC 13A .0113 and Condition II.I.).

3. IM Reports

a. If the time required for completion of interim measures is greater than one (1) year, the Permittee shall provide the Department with progress reports at intervals specified in the approved workplan. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the interim measures completed;

ii. Summaries of any deviations from the IM Workplan during the reporting period;

iii. Summaries of any problems or potential problems encountered during the reporting period;

iv. Projected work for the next reporting period; and

v. Copies of laboratory/monitoring data.

b. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of completion of interim measures conducted under Condition II.G., an IM Report. The IM Report shall contain the following information at a minimum:

i. A description of interim measures implemented:

ii. Summaries of results;

iii. Summaries of any problems encountered;

iv. Summaries of accomplishments and/or effectiveness of interim measures; and

v. Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.D.10.

H. CORRECTIVE MEASURES STUDY

1. Corrective Measures Study (CMS) Workplan

a. The Permittee shall prepare and submit a CMS Workplan for those units requiring a CMS within ninety (90) calendar days of notification by the Department that a CMS is required. This CMS Workplan shall be developed to meet the requirements of Condition II.H.1.b.

b. The CMS Workplan shall meet the requirements of Appendix C at a minimum. The CMS Workplan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit identified in accordance with Condition II.H.1.a. which is deleted from the CMS Workplan. Such deletion of a unit is subject to the approval of the Department. The CMS shall be conducted in accordance with the approved CMS Workplan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix C. Such omissions or deviations are subject to the approval of the Department. The scope of the CMS Workplan shall include all investigations necessary to ensure compliance with 3005(c)(3), 40 CFR 264.101 and 40 CFR 264.552 as adopted in 15A NCAC 13A .0109, and 270.32(b) as adopted in 15A NCAC 13A .0113. The Permittee shall implement corrective actions beyond the facility boundary, as set forth in Condition II.A.5.

c. The Department shall either approve or disapprove, in writing, the CMS plan. If the Department disapproves the CMS Workplan, the Department shall either (1) notify the Permittee in writing of the CMS Workplan's deficiencies and specify a due date for submittal of a revised CMS Workplan, or (2) revise the CMS Workplan and notify the Permittee of the revisions, or (3) conditionally approve the CMS Work Workplan and notify the Permittee of the conditions. This modified CMS Workplan becomes the approved CMS Workplan .

2. Corrective Measures Study Implementation

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Workplan, no later than thirty (30) calendar days after the Permittee has received written approval from the Department for the CMS Workplan. The CMS shall be conducted in accordance with the approved CMS Workplan approved in accordance with Condition II.H.1.c.

3. CMS Report

a. The Permittee shall prepare and submit to the Department a draft and a final CMS Report for the study conducted pursuant to the approved CMS Workplan. The draft CMS Report shall be submitted to the Department in accordance with the schedule in the approved CMS Workplan. The final CMS Report shall be submitted to the Department within thirty (30) calendar days of receipt of the Department's comments on the draft CMS Report. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. If a remedial alternative requires the use of a CAMU, the CMS report shall include all information necessary to establish and implement the CAMU. The CMS Report shall present all information gathered under the approved CMS Workplan. The CMS Final Report must contain

adequate information to support the Department's decision on the recommended remedy, described under Condition II.I.

b. If the Department determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition II.H.3.a., the Department may disapprove the CMS Final Report. If the Department disapproves the CMS Final Report, the Department shall notify the Permittee in writing of deficiencies in the CMS Final Report and specify a due date (not less than thirty (30) days)for submittal of a revised CMS Final Report. The Department will notify the Permittee of any no further action decision.

c. As specified under Condition II.H.3.a., based on preliminary results and the CMS Final Report, the Department may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

I. REMEDY APPROVAL AND PERMIT MODIFICATION

1. A remedy shall be selected by the Department from the remedial alternatives evaluated in the CMS. The remedy will be based at a minimum on protection of human health and the environment, as per specific site conditions, existing regulations, and guidance.

2. Pursuant to 40 CFR 270.41 as adopted in 15A NCAC 13A .0113, a permit modification will be initiated by the Department upon concurrence of a remedy selected in accordance with Condition II.I.1. This modification will serve to incorporate a final remedy, including a CAMU, if necessary, into the permit.

3. Within one hundred and twenty (120) calendar days after this Permit has been modified, the Permittee shall demonstrate financial assurance for completing the approved remedy.

J. Cost Estimate for Completion of Corrective Action.

1. The Permittee shall prepare a cost estimate for the completion of any corrective action required under this permit for solid waste management units in order to provide financial assurance for completion of corrective action as required under 40 CFR 264.90(a)(2) and 264.101(b) as adopted in 15A NCAC 13A .0109. Such cost estimate will be based upon the cost of assessment of soil and ground water, installation, operation, inspection, monitoring, and maintenance of the corrective action system to meet the requirements of 40 CFR 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 and this permit to include any treatment system necessary for contaminated soil and/or ground water. Such cost estimate will include the full cost (100%) of corrective action as defined by Part II of this permit.

2. The Permittee shall submit the cost estimate for completion of corrective action required under 40 CFR 264.90(a)(2), 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 and this permit within one hundred eighty (180) days of the approval of this permit.

3. The Permittee shall annually adjust the cost estimate for inflation sixty (60) days prior to the anniversary date of the establishment of the financial assurance mechanism unless using a financial test or corporate guarantee, in which case the estimate shall be updated thirty (30) days after the close of the firm's fiscal year.

4. The Permittee shall submit cost adjustments for modifications to the corrective action plan to the Section within thirty (30) calendar days after receiving approval of the modification if the change increases the cost of corrective action.

K. Financial Assurance for Corrective Action.

1. The Permittee shall demonstrate continuous compliance with 40 CFR 264.90(a)(2) and 264.101 as adopted in 15A NCAC 13A .0109 by providing documentation of financial assurance using a mechanism described in 40 CFR 264.151 and 264.145 as adopted in 15A NCAC 13A .0109 or a mechanism described in 15A NCAC 13A .0109(i) in at least the amount of the cost estimate required under Condition II.J.

2. The Permittee shall submit financial assurance for the full cost of corrective action as required under 40 CFR 264.90(a)(2), 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 no later than sixty (60) days after the submittal of the cost estimate described in Condition II.J. of this permit.

3. Only the mechanisms described in 15A NCAC 13A .0109(i) may be used for financial assurance for corrective action. References to regulatory requirements for "closure and/or post-closure care" shall be replaced with the phrase "closure, post-closure care, and/or corrective action."

L. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

1. If at any time the Department determines that modification of the Corrective Action Schedule of Compliance is necessary, the Department may initiate a modification to the Schedule of Compliance, Appendix D.

2. Modifications that are initiated and finalized by the Department will be in accordance with the applicable provisions of 40 CFR 270 as adopted in 15A NCAC 13A .0113. The Permittee may also request a permit modification in accordance with 40 CFR 270 as adopted in 15A NCAC 13A .0113.

M. IMMINENT HAZARDS

1. The Permittee shall report to the Department any imminent or existing hazard to public health or the environment from any release of hazardous waste or hazardous constituents. Such information shall be reported orally within 24 hours from such time the Permittee becomes aware of the circumstances. This report shall include the information specified under Condition I.D.15.

2. A written report shall also be provided to the Department within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Condition I.D.15.; a description of the release and its cause; the period of the release; whether the release has been stopped; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the release.

N. WORKPLAN AND REPORT REQUIREMENTS

1. All plans and schedules shall be subject to approval by the Department prior to implementation to assure that such workplans and schedules are consistent with the requirements of this permit and with applicable

regulations and guidance. The Permittee shall revise all submittals and schedules as specified by the Department. Upon approval, the Permittee shall implement all plans and schedules as written.

2. The results of all plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Department based on the Permittee's demonstration that sufficient justification for the extension exists.

3. If the Permittee at any time determines that the SAR information required under Condition II.C., or RFI Workplan(s) required under Condition II.F., no longer satisfies the requirements of 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended RFI Workplan(s) to the Department within ninety (90) calendar days of such determination.

4. All reports shall be signed and certified in accordance with 40 CFR 270.11 as adopted in 15A NCAC 13A .0113.

5. Two (2) paper copies and one (1) electronic copy of all reports and plans shall be provided by the Permittee to the Department at the following address:

Ms. Elizabeth W. Cannon, Chief
Hazardous Waste Section
Waste Management Division
1646 Mail Service Center
Raleigh, NC 27699-1646

Electronic reports shall be in MS Word or a common text format. Electronic data shall be in MS Access or a comma delimited format. Data files shall also include a meta data file describing the fields in the data file. Plans shall be electronic to the most reasonable extent possible.

PART III - WASTE MINIMIZATION

The requirements of Part III apply to facilities that have a permit to treat, store, or dispose of hazardous waste.

A. GENERAL REQUIREMENTS

Pursuant to 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109, and Section 3005(h) of RCRA, 42 U.S.C. 6925(h), the Permittee must certify, no less often than annually that:

1. The Permittee has a program in place to reduce the volume and toxicity of hazardous waste to the degree determined by the Permittee to be economically practicable; and

2. The proposed method of treatment, storage or disposal is the most practicable method available to the Permittee which minimizes the present and future threat to human health and the environment.

B. WASTE MINIMIZATION RECORD KEEPING

The Permittee shall maintain copies of the certification in the facility operating record as required by 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109.

C. WASTE MINIMIZATION PROGRAM OBJECTIVES

The Waste Minimization Program should include the following elements:

1. Top Management Support

   a. Dated and signed policy describing management support for waste minimization and for implementation of a waste minimization plan.

   b. Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.

   c. Description of how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations, and maintenance.

2. Characterization of Waste Generation

   Identification of types, amounts, and hazardous constituents of waste streams, with the source and date of generation.

3. Periodic Waste Minimization Assessments

   a. Identification of all points in a process where materials can be prevented from becoming a waste, or can be recycled.

   b. Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.

   c. Description of technically and economically practical waste reduction/recycling options to be implemented, and a planned schedule for implementation.

d. Specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

4. Cost Allocation System

a. Identification of waste management costs for each waste, factoring in liability, transportation, record keeping, personnel, pollution control, treatment, disposal, compliance and oversight costs to the extent feasible.

b. Description of how departments are held accountable for the wastes they generate.

c. Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

5. Technology Transfer

Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

6. Program Evaluation

a. Description of types and amounts of hazardous waste reduced or recycled.

b. Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.

c. Amendments to waste minimization plan and explanation.

d. Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.

e. Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

References: "Draft Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program", 54 FR 25056, June 12, 1989.

"Waste Minimization Opportunity Assessment Manual", EPA/625/788/003, July 1988.

PART IV - LAND DISPOSAL RESTRICTIONS

A. GENERAL RESTRICTIONS

1. 40 CFR Part 268 as adopted in 15A NCAC 13A .0112 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of 40 CFR 268 as adopted in 15A NCAC 13A .0112. Where the Permittee has applied for an extension, waiver or variance under 40 CFR 268 as adopted in 15A NCAC 13A .0112 the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.

B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

1. A restricted waste identified in 40 CFR Part 268 Subpart C as adopted in 15A NCAC 13A .0112 may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR Part 268 Subparts C and/or D as adopted in 15A NCAC 13A .0112 are met.

2. The storage of hazardous wastes restricted from land disposal under 40 CFR Part 268 as adopted in 15A NCAC 13A .0112 is prohibited unless the requirements of 40 CFR 268 Subpart E as adopted in 15A NCAC 13A .0112 are met.

3. Under 40 CRF 268.49, as adopted in 15A NCAC 13A .0112, the Permittee must comply with land disposal restrictions prior to the placing of contaminated soil that exhibits a characteristic of hazardous waste, or exhibited a characteristic of hazardous waste at the time it was generated, into a land disposal unit. Circumstances under which soil contaminated with a listed hazardous waste must comply with land disposal restrictions prior to placement in a land disposal unit are also specified in 40 CFR 268.49.

C. DEFINITIONS

1. For the purposes of 40 CFR Part 268 as adopted in 15A NCAC 13A .0112, "Land Disposal" means placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

PART V - ORGANIC AIR EMISSIONS REQUIREMENTS FOR PROCESS VENTS AND EQUIPMENT LEAKS

A. GENERAL INTRODUCTION

In the June 21, 1990 Federal Register, EPA published the final rule for Phase I Organic Air Emission Standards (40 CFR Parts 264 and 265, Subparts AA and BB) for hazardous waste treatment, storage, and disposal facilities. Subpart AA contains emission standards for process vents associated with distillation fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that process hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight. (SUBPART AA DOES NOT APPLY TO AIR STRIPPING OPERATIONS USED FOR CORRECTIVE ACTION PURPOSES.) Subpart BB contains emission standards that address leaks from specific equipment (i.e. pumps, valves, compressors, etc.) that contains or contacts hazardous waste that has an organic concentration of at least ten (10) percent by weight.

B. ORGANIC AIR EMISSION STANDARDS

The Permittee has no units at the present time to which the Organic Air Emissions Requirements of 40 CFR 264, Subpart AA (for process vents) or Subpart BB (for equipment leaks), as adopted in 15A NCAC 13A .0109, applies. If the Permittee should change, modify or otherwise identify any unit that is or has become subject to these regulations, the Permittee is required to comply with all 40 CFR 264, as adopted in 15A NCAC 13A .0109, Subpart AA, and Subpart BB regulations and is required to submit all 40 CFR 270.24 and 270.25 informational requirements, as adopted in 15A NCAC 13A .0113, within thirty (30) calendar days after implementation of the unit's modification.

PART VI - RCRA ORGANIC AIR EMISSION REQUIREMENTS

A. APPLICABILITY

1. Subpart CC applies to all tanks, containers, surface impoundments and/or miscellaneous units, identified in Condition VI.A., except as provided for in 40 CFR 264.1 and 264.1080(b) as adopted in 15A NCAC 13A .0109.

The Conditions of this Part apply to:

2. Hazardous waste management units for which required control equipment has been installed and is operational or are exempt from Subpart CC standards under 40 CFR 264.1082(c) as adopted in 15A NCAC 13A .0109.

B. EMISSION CONTROL TECHNOLOGY

1. The Permittee shall install and maintain all regulated units and associated emission control technology in accordance with the detailed plans, schedules, information and reports as contained in the facility's Part B permit application. In accordance with Condition VI.E., the permit application must be modified to contain appropriate detailed plans, schedules, information and reports.

C. GENERAL STANDARDS

The Permittee shall comply with the applicable requirements of 40 CFR Part 264, Subpart CC as adopted in 15A NCAC 13A .0109.

D. REPORTING REQUIREMENTS

1. For each tank, surface impoundment, or container which manages hazardous waste that is exempted from using air emission controls, a written report shall be submitted to the Department within fifteen (15) days of each occurrence when hazardous waste is placed in the waste management unit in noncompliance with 40 CFR 264.1082(c)(1) or (c)(2) as adopted in 15A NCAC 13A .0109, as applicable. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance.

2. For tanks listed in Conditions VI.A.2., which use air emission controls in accordance with the requirements 40 CFR 264.1084(c) as adopted in 15A NCAC 13A .0109, a written report shall be submitted to the Department within fifteen (15) days of each occurrence when hazardous waste is managed in the tank in noncompliance with the Conditions specified in 40 CFR 264.1084(c)(1) through (c)(4) as adopted in 15A NCAC 13A .0109. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance.

3. For control devices used in accordance with the requirements of 40 CFR 264.1087 as adopted in 15A NCAC 13A .0109, a semiannual written report shall be submitted to the Department except as provided for in Condition VI.D.4. of this Part. The report shall describe each occurrence during the previous 6-month period when a control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in 40 CFR 264.1035(c)(4) as adopted in 15A NCAC

13A .0109 or when a flare is operated with visible emissions as defined in 40 CFR 264.1033(d) as adopted in 15A NCAC 13A .0109. The written report shall include the EPA identification number, facility name and address, and an explanation why the control device could not be returned to compliance within 24 hours, and actions taken to correct the noncompliance.

4. A report to the Department in accordance with the requirements of Condition VI.D.3. of this Part is not required for a 6-month period during which all control devices subject to 40 CFR Part 264, Subpart CC, as adopted in 15A NCAC 13A .0109 are operated by the owner or operator such that during no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in 40 CFR 264.1035(c)(4) as adopted in 15A NCAC 13A .0109 of this part or a flare operate with visible emissions as defined in 40 CFR 264.1033(d) as adopted in 15A NCAC 13A .0109.

5. All reports shall be signed and dated by an authorized representative of the Permittee as per 40 CFR 270.11(b) as adopted in 15A NCAC 13A .0113.

E. NOTIFICATION OF NEW UNITS

Prior to installing any tank, container, surface impoundment or miscellaneous unit subject to 40 CFR Part 264, Subpart CC, the Permittee shall apply for a permit modification under 40 CFR 270.42 as adopted in 15A NCAC 13A .0113, and provide specific Part B application information required under 40 CFR 270.14-17 and 270.27 as adopted in 15A NCAC 13A .0113, as applicable, with the modification request.

APPENDIX A

SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN SUMMARY

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SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN SUMMARY

Table 1. List of Solid Waste Management Units and Areas of Concern regulated by the RCRA Permit:

SWMU/AOC Number	Description
SWMU 1a	Wastewater Collection Sump and Feeder Trenches, Intermediates, Plant 1
SWMU 1b	Wastewater Collection Sump and Feeder Trenches, Intermediates, Plant 2
SWMU 1c	Ingredient Recovery Area Collection Sump and Feeder Trenches
SWMU 2	Double contained conveyance system
SWMU 3	Intermediates Airflow Trench
SWMU 4	Intermediates Emergency Lift Station
SWMU 5	DMT Emergency Basin
SWMU 6	DMT Equalization Basin
SWMU 7	DMT Splitter Box
SWMUs 8,9,10,11	DMT Aeration Basins (4)
SWMUs 12,13	DMT Polishing Ponds (2)
SWMUs 14,15	DMT Clarifiers (2)
SWMU 16	DMT Clarifier Sludge Pit
SWMU 17	DMT Clarifier Sludge Pit
SWMU 18	DMT Clarifier Lift Station
SWMU 19	Dacron® Aeration Basin
SWMU 20	Dacron® Concrete Flume
SWMUs 21,22	Dacron® Clarifiers (2)
SWMUs 23,24	Dacron® Clarifier Sludge Pits (2)
SWMU 25	Dacron® Chlorine Contact Chamber
SWMU 26	Dacron® Retention Basin
SWMU 27	Dacron® Retention Basin Sump
SWMU 28	Dissolved Air Flotation Thickener
SWMU 29	Aerobic Digester
SWMU 30	23-Acre Sludge Field
SWMU 31	13-Acre Sludge Field
SWMU 32	12-Acre Sludge Field
SWMU 33	Sludge Field Runoff Drainage Ditch

SWMU 34	Sludge Field Runoff Pump Station
SWMU 35	Sludge Field Under Drain Pump Station
SWMU 36	Sludge Field Runoff Overflow Basin
SWMU 37	North Incinerator
SWMU 38	South Incinerator
SWMU 39	DMT Process Incinerator
SWMUs 40,41,42,43	Fuel Oil/Process Waste-Fired Boilers (4)
SWMU 44	Old Incinerator
SWMU 45	Waste Drum Filling Areas
SWMU 46	Satellite Drum Storage Area
SWMU 47	Drum Staging Areas
SWMU 48	Incinerator Building Drum Storage Area
SWMU 49	Hazardous Waste Drum Storage Pad
SWMU 50	Hazardous Waste Drum Storage Area
SWMU 51	Non-Hazardous Waste Drum Storage Area
SWMU 52	Drum Storage Pad Drainage/Spill Containment System
SWMU 53	Landfill No. 1
SWMU 54	Landfill No. 2
SWMU 55	Past Landfill No. 1
SWMU 56	Past Landfill no. 2
SWMU 57	Past Landfill No. 3
SWMU 58	Past Landfill No. 4
SWMU 59	Construction Rubble Landfill
SWMU 60	Contingency Basin
SWMU 61	Contingency Basin Ditch
SWMU 62	Coal Pile Runoff Settling Basin
SWMU 63	Hazardous Waste Storage Tank
SWMU 64	Process Waste/Fuel Oil Blending Tank
SWMU 65	Incinerator Building Trash Pile
SWMUs 66,67	Dacron® Polymer Pads (2)
SWMU 68	Cooling Tower Basins
SWMU 69	Incinerator Building Waste Sump
SWMU 70	Incinerator Ash Dumpster
SWMU 71	Trash Dumpster
SWMUs 72,73	Boiler Bottom Ash and Fly Ash Silos (2)

SWMU 74	Ash Unloading Area
AOC A1	Former Underground Tank Storage Area
AOC A	Paraxylene Storage Tank Basin
AOC B	Fire Training Area
AOC C	Former BACA Storage Area
AOC FMA	Fibers Manufacturing Area
AOC GW	Site Wide Groundwater

Table 2. List of Solid Waste Management Units and Areas of Concern that require no further action at this time:

SWMU/AOC Number	Description
SWMU 1a	Wastewater Collection Sump and Feeder Trenches, Intermediates, Plant 1
SWMU 1c	Ingredient Recovery Area Collection Sump and Feeder Trenches
SWMU 2	Double contained conveyance system
SWMU 3	Intermediates Airflow Trench
SWMU 4	Intermediates Emergency Lift Station
SWMU 7	DMT Splitter Box
SWMUs 8,9,10,11	DMT Aeration Basins (4)
SWMUs 12,13	DMT Polishing Ponds (2)
SWMUs 14,15	DMT Clarifiers (2)
SWMU 16	DMT Clarifier Sludge Pit
SWMU 17	DMT Clarifier Sludge Pit
SWMU 18	DMT Clarifier Lift Station
SWMU 19	Dacron® Aeration Basin
SWMU 20	Dacron® Concrete Flume
SWMUs 21,22	Dacron® Clarifiers (2)
SWMUs 23,24	Dacron® Clarifier Sludge Pits (2)
SWMU 25	Dacron® Chlorine Contact Chamber
SWMU 26	Dacron® Retention Basin
SWMU 27	Dacron® Retention Basin Sump
SWMU 28	Dissolved Air Flotation Thickener
SWMU 29	Aerobic Digester
SWMU 30	23-Acre Sludge Field
SWMU 31	13-Acre Sludge Field
SWMU 32	12-Acre Sludge Field
SWMU 33	Sludge Field Runoff Drainage Ditch
SWMU 34	Sludge Field Runoff Pump Station
SWMU 35	Sludge Field Under Drain Pump Station
SWMU 36	Sludge Field Runoff Overflow Basin
SWMU 38	South Incinerator
SWMU 39	DMT Process Incinerator
SWMUs 40,41,42,43	Fuel Oil/Process Waste-Fired Boilers (4)

SWMU 44	Old Incinerator
SWMU 45	Waste Drum Filling Areas
SWMU 46	Satellite Drum Storage Area
SWMU 47	Drum Staging Areas
SWMU 48	Incinerator Building Drum Storage Area
SWMU 49	Hazardous Waste Drum Storage Pad
SWMU 51	Non-Hazardous Waste Drum Storage Area
SWMU 52	Drum Storage Pad Drainage/Spill Containment System
SWMU 54	Landfill No. 2
SWMU 56	Past Landfill no. 2
SWMU 60	Contingency Basin
SWMU 61	Contingency Basin Ditch
SWMU 62	Coal Pile Runoff Settling Basin
SWMU 63	Hazardous Waste Storage Tank
SWMU 64	Process Waste/Fuel Oil Blending Tank
SWMU 65	Incinerator Building Trash Pile
SWMUs 66,67	Dacron® Polymer Pads (2)
SWMU 68	Cooling Tower Basins
SWMU 69	Incinerator Building Waste Sump
SWMU 70	Incinerator Ash Dumpster
SWMU 71	Trash Dumpster
SWMUs 72,73	Boiler Bottom Ash and Fly Ash Silos (2)
SWMU 74	Ash Unloading Area
AOC A1	Former Underground Tank Storage Area

Table 3. List of Solid Waste Management Units and Areas of Concern requiring Confirmatory Sampling:

There are no Solid Waste Management Units or Areas of Concern that require Confirmatory Sampling at this time.

Table 4. List of Solid Waste Management Units and Areas of Concern requiring additional RFI activities:

SWMU/AOC Number	Description
SWMU 37	North Incinerator
SWMU 50	Hazardous Waste Drum Storage Area
SWMU 58	Past Landfill No. 4
SWMU 59	Construction Rubble Landfill
AOC A	Paraxylene Storage Tank Basin
AOC C	Former BACA Storage Area
AOC FMA	Fibers Manufacturing Area
AOC GW	Groundwater

N
W
E
S

Cape Fear River

Bay Branch

Mulberry Branch

Otter Branch

AOC A

AOC B

AOC C

AOC FMA

AOC G

Loading Zone

Loading Zone

54

53

55

56

57

58

59

60

62

12

13

19

26

30

31

32

33

34

35

36

Legend

- Drainage Ditch
- Run-Off Control
- Industrial Holding Pond
- River
- Stream/Surface Water
- 100 Year Floodplain
- Property Line
- Site Road
- SWMU
  Number Label indicates SWMU ID
- Site Structure

Map Scale: 1/9,600
Map Projection: NC State Plane Feet, NAD 83
Map Date: 5/19/05
FIRM Flood Data & Stream/River Data provided by NC DOT

0 410 820 1,640 Feet

DUPONT

CORPORATE REMEDIATION GROUP

An Alliance between
DuPont and URS Corporation - North Carolina
6324 Fairview Road
Charlotte, NC 28210

Title: Site Layout Map
RCRA Permit Application
Cape Fear, NC

Drawn: ND	Date: 05/19/05	Project No.:	
Checked: MH	Revision:	Figure No.: 1	
Approved: KG			

Table 5. List of Solid Waste Management Units and Areas of Concern requiring a Corrective Measures Study:

SWMU/AOC Number	Description
SWMU 1b	Wastewater Collection Sump and Trenches
SWMU 5	DMT Emergency Basin
SWMU 6	DMT Equalization Basin
SWMU 53	Landfill No. 1
SWMU 55	Past Landfill No. 1
SWMU 57	Past Landfill No. 3
AOC B	Fire Training Area

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) WORK PLAN OUTLINE

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) WORK PLAN OUTLINE

I. RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) Workplan that meets the requirements of Part II of this permit and appropriate corrective action guidance documents. This Workplan shall also include the development of the following plans, which shall be prepared concurrently:

A. Project Management Plan

Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling and Analysis Plan(s)

The Permittee shall prepare a plan to document all monitoring procedures: field sampling, sampling procedures and sample analysis performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented. The Sampling Strategy and Procedures shall be in accordance with Characterization of Hazardous Waste Sites A Methods Manual: Volume II., Available Sampling Methods, EPA-600/4-84-076, or EPA Region IV Engineering Compliance Branch's Standard Operating Procedure and Quality Assurance Manual (SOP). Any deviations from these references must be requested by the applicant and approved by EPA. The Sampling and Analysis Plan must specifically discuss the following unless the EPA-600/4-84-076 or SOP procedures are specifically referenced.

1. Sampling Strategy

a. Selecting appropriate sampling locations, depths, etc.;

b. Obtaining all necessary ancillary data;

c. Determining conditions under which sampling should be conducted;

d. Determining which media are to be sampled (e.g., ground water, air, soil, sediment, subsurface gas);

e. Determining which parameters are to be measured and where;

f. Selecting the frequency of sampling and length of sampling period;

g. Selecting the types of samples (e.g., composites vs. grabs) and number of samples to be collected.

2. Sampling Procedures
   a. Documenting field sampling operations and procedures, including;
      i. Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);
      ii. Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
      iii. Documentation of specific sample preservation method;
      iv. Calibration of field instruments;
      v. Submission of field-biased blanks, where appropriate;
      vi. Potential interferences present at the facility;
      vii. Construction materials and techniques, associated with monitoring wells and piezometers;
      viii. Field equipment listing and sampling containers;
      ix. Sampling order; and
      x. Decontamination procedures.

   b. Selecting appropriate sample containers;

   c. Sampling preservation; and

   d. Chain-of-custody, including:
      i. Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and
      ii. Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Sample Analysis
   Sample analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste-Physical/Chemical Methods" (third edition). The sample analysis section of the Sampling and Analysis Plan shall specify the following:

   a. Chain-of-custody procedures, including:
      i. Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipments, and verify the data entered onto the sample custody records;
      ii. Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and
      iii. Specification of laboratory sample custody procedures for sample handling, storage, and dispersing for analysis.

   b. Sample storage;

c. Sample preparation methods;

d. Analytical Procedures, including:
   i. Scope and application of the procedure;
   ii. Sample matrix;
   iii. Potential interferences;
   iv. Precision and accuracy of the methodology; and
   v. Method detection limits.

e. Calibration procedures and frequency;

f. Data reduction, validation and reporting;

g. Internal quality control checks, laboratory performance and systems audits and frequency, including:
   i. Method blank(s);
   ii. Laboratory control sample(s);
   iii. Calibration check sample(s);
   iv. Replicate sample(s);
   v. Matrix-spiked sample(s);
   vi. Control charts;
   vii. Surrogate samples;
   viii. Zero and span gases; and
   ix. Reagent quality control checks.

h. Preventative maintenance procedures and schedules;

i. Corrective action (for laboratory problems); and

j. Turnaround time.

C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record
The data record shall include the following:

a. Unique sample or field measurement code;

b. Sampling or field measurement location and sample or measurement type;

c. Sampling or field measurement raw data;

d. Laboratory analysis ID number;

e. Property or component measures; and

f. Result of analysis (e.g., concentration).

2. Tabular Displays
The following data shall be presented in tabular displays:

a. Unsorted (raw) data;

b. Results for each medium, or for each constituent monitored;

c. Data reduction for statistical analysis, as appropriate;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

e. Summary data.

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transits, three dimensional graphs, etc.):

a. Display sampling location and sampling grid;

b. Indicate boundaries of sampling area, and area where more data are required;

c. Display geographical extent of contamination;

d. Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and

e. Indicate features affecting inter-media transport and show potential receptors.

II. RCRA FACILITY INVESTIGATION (RFI) REQUIREMENTS

RCRA Facility Investigation:

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical content and quality to support the development and evaluation of the corrective action plan if necessary. The information contained in a RCRA Part B permit application and/or RCRA Section 3019 Exposure Information Report may be referenced as appropriate but must be summarized in both the RFI Workplan and RFI Report.

All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The Permittee shall characterize the following as they

relate to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units.

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:
   i. Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;
   ii. Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);
   iii. Depositional history;
   iv. Regional and facility specific ground-water flow patterns; and
   v. Identification and characterization of areas and amounts of recharge and discharge.

b. An analysis of any topographic features that might influence the ground-water flow system.

c. Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:
   i. Hydraulic conductivity and porosity (total and effective);
   ii. Lithology, grain size, sorting, degree of cementation;
   iii. An interpretation of hydraulic interconnections between saturated zones; and
   iv. The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).

d. Based on data obtained from ground-water monitoring wells and piezometers installed up gradient and down gradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:
   i. Water-level contour and/or potentiometric maps;
   ii. Hydrologic cross-sections showing vertical gradients;
   iii. The flow system, including the vertical and horizontal components of flow; and
   iv. Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

e. A description of man-made influences that may affect the hydrology of the site, identifying:
   i. Local water-supply and production wells with an approximate schedule of pumping; and

ii. Man-made hydraulic structures (pipelines, trench drains, ditches, etc.)

2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of contaminant release(s). Such characterization may include, but not be limited to, the following types of information as appropriate:

a. Surface soil distribution;

b. Soil profile, including ASTM classification of soil;

c. Transepts of soil stratigraphy;

d. Hydraulic conductivity (saturated and unsaturated);

e. Relative permeability;

f. Bulk density;

g. Porosity;

h. Soil sorption capacity;

i. Cation exchange capacity (CEC);

j. Soil organic content;

k. Soil pH;

l. Particle size distribution;

m. Depth of water table;

n. Moisture content;

o. Effect of stratification on unsaturated flow;

p. Infiltration;

q. Evapotranspiration;

r. Storage capacity;

s. Vertical flow rate; and

t. Mineral content.

3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterizations may include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:

i. For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
ii. For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;
iii. For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge point(s), and general contents.
iv. Drainage patterns; and
v. Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:
i. Deposition area;
ii. Thickness profile; and
iii. Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

4. Air

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

a. A description of the following parameter:
i. Annual and monthly rainfall averages;
ii. Monthly temperature averages and extremes;
iii. Wind speed and direction;
iv. Relative humidity/dew point;
v. Atmospheric pressure;
vi. Evaporation data;
vii. Development of inversions; and
viii. Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence (i.e., Hurricanes).

b. A description of topographic and man-made features which affect air flow and emission patterns, including:
i. Ridges, hills or mountain area;
ii. Canyons or valleys;
iii. Surface water bodies (e.g., rivers, lakes, bays, etc.); and
iv. Buildings.

B. Source Characterization

For those sources from which releases of hazardous constituents have been detected the Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety

risks, including: type; quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics

   a. Location of unit/disposal area;

   b. Type of unit/disposal area;

   c. Design features;

   d. Operating practices (past and present);

   e. Period of operation;

   f. Age of unit/disposal area;

   g. General physical conditions; and

   h. Method used to close the unit/disposal area.

2. Waste Characteristics:

   a. Type of wastes placed in the unit;
      i. Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);
      ii. Quantity; and
      iii. Chemical composition.

   b. Physical and chemical characteristics such as;
      i. Physical form (solid, liquid, gas);
      ii. Physical description (e.g., powder, oily sludge);
      iii. Temperature;
      iv. pH;
      v. General chemical class (e.g., acid, base, solvent);
      vi. Molecular weight;
      vii. Density;
      viii. Boiling point;
      ix. Viscosity;
      x. Solubility in water;
      xi. Cohesiveness of the waste; and
      xii. Vapor pressure.

   c. Migration and dispersal characteristics of the waste such as:
      i. Sorption capability;
      ii. Biodegradability, bioconcentration, biotransformation;
      iii. Photodegradation rates;
      iv. Hydrolysis rates; and
      v. Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

C. Characterization of Releases of Hazardous Constituents

The Permittee shall collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination n the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction, and rate of movement of contamination. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

1. Ground-water Contamination

The Permittee shall conduct a ground-water investigation to characterize any plumes of contamination detected at the facility. This investigation shall at a minimum provide the following information:

a. A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from or within the facility;

b. The horizontal and vertical direction of contamination movement;

c. The velocity of contaminant movement;

d. The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);

e. An evaluation of factors influencing the plume movement; and

f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the saturated zone in the vicinity of any contaminant release. The investigation may include the following information:

a. A description of the vertical and horizontal extent of contamination;

b. A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility, speciation, absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;

c. Specific contaminant concentrations;

d. The velocity and direction of contaminant movement; and

e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from releases of hazardous constituents at the facility. The investigation may include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;

b. The horizontal and vertical direction of contaminant movement;

c. The contaminant velocity;

d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

e. An extrapolation of future contaminant movement; and

f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

The Permittee shall document the procedures used in making the above determinations.

4. Air Contamination

The Permittee shall conduct an investigation to characterize gaseous releases of hazardous constituents into the atmosphere or any structures or buildings. This investigation may provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;

b. The rate and amount of the release; and

c. The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

The Permittee shall document the procedures used in making the above determinations.

D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. Current local uses and planned future uses of ground water:

   a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and

   b. Location of ground-water users, to include withdrawal and discharge wells, within one mile of the impacted area.

   The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:

   a. Domestic and municipal (e.g., potable and lawn/gardening watering);

   b. Recreational (e.g., swimming, fishing);

   c. Agricultural;

   d. Industrial; and

   e. Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:

   a. Recreation;

   b. Hunting;

   c. Residential;

   d. Commercial; and

   e. Relationship between population locations and prevailing wind direction.

4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A general description of the ecology within the area adjacent to the facility.

6. A general demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any known or documented endangered or threatened species near the facility.

APPENDIX C

CORRECTIVE MEASURES STUDY (CMS) PLAN OUTLINE

I. Identification and Development of the Corrective Measure Alternatives

A. Description of Current Situation
B. Establishment of Corrective Action Objectives
C. Screening of Corrective Measures Technologies
D. Identification of the Corrective Measure Alternatives

II. Evaluation of the Corrective Measure Alternatives

A. Technical/Environmental/Human Health/Institutional
B. Cost Estimate

III. Justification and Recommendation of the Corrective Measure or Measures

A. Technical
B. Environmental
C. Human Health

IV. Reports

A. Draft
B. Final
C. Public Review and Final Selection of Corrective Measure

I. IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURES ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified potential corrective measure technologies, the Permittee shall identify, screen and develop the alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures which have been or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee shall propose facility-specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the

RFI, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground-water releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR 264.100 as adopted in 15A NCAC 13A .0109.

C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and assess the technologies which are applicable at the facility. The Permittee shall screen the corrective measure technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics
   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

2. Waste Characteristics
   Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

3. Technology Limitations
   During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternatives

The Permittee shall develop the Corrective Measure Alternatives based on the corrective action objectives and analysis of potential corrective measure technologies. The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action

alternatives. The alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies.

II. EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the initial screening and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical;

a. The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

i. Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii. Useful life is defined as the length of time the level of desired effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their

operation and maintenance requirements and their demonstrated reliability:

i. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii. Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

i. Constructability is determined by conditions both internal and external to the facility conditions and includes such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

ii. Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental;

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus

on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; and adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health;
The Permittee shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the concentrations and characteristics of the contaminants on-site, potential exposure routes, and potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time for management of mitigation measures, the relative levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional
The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, state and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative. If the selected remedy is capping and closure in place, a notation must be made in the land deed.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (non-construction and overhead) costs.

   a. Direct capital costs include:
      i. Construction costs:
         Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.
      ii. Equipment costs:
         Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;
      iii. Land and site-development costs:
         Expenses associated with purchase of land and development of existing property; and
      iv. Buildings and services costs:
         Costs of process and non-process buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:
   i. Engineering expenses:
      Cost of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;
   ii. Legal fees and license or permit costs:
      Administrative and technical costs necessary to obtain licenses and permits for installation and operation;
   iii. Start-up and shakedown costs:
      Costs incurred during corrective measure start-up; and
   iv. Contingency allowances:
      Funds needed to cover costs resulting from unforeseen circumstances, such as inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

   a. Operating labor costs:
      Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

   b. Maintenance materials and labor costs:
      Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

   c. Auxiliary materials and energy:
      Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

   d. Purchased services:
      Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

   e. Disposal and treatment costs:
      Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;

   f. Administrative costs:
      Costs associated with administration of corrective measure operation and maintenance not included under other categories;

   g. Insurance, taxes, and licensing costs:
      Costs of such items as liability and sudden accident insurance; real estate taxes on purchased land or right-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

   h. Maintenance reserve and contingency funds:

Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs:
Items not covered by the categories listed above.

III. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Department will select the corrective measure alternative or alternatives to be implemented based on the results obtained from work completed under Section II and III. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proved effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure(s) must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure(s) posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

IV. REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results obtained from Sections I through III and recommending a corrective measure alternative. Copies of the preliminary report shall be provided by the Permittee to the Department for review and approval.

A. Draft

The Report shall at a minimum include:

1. A description of the facility;

   a. Site topographic map and preliminary layouts.

2. A summary of the corrective measure(s) and rationale for selection;

   a. Description of the corrective measure(s) and rationale for selection;

   b. Performance expectations;

   c. Preliminary design criteria and rationale;

   d. General operation and maintenance requirements; and

   e. Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;

   a. Field studies (ground water, surface water, soil, air); and

   b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;

   a. Special technical problems;

   b. Additional engineering data required;

   c. Permits and regulatory requirements;

   d. Access, easements, right-of-way;

   e. Health and safety requirements; and

   f. Community relations activities.

5. Cost Estimates and Schedules;

   a. Capital cost estimate;

   b. Operation and maintenance cost estimate; and

   c. Project schedule (design, construction, and operation).

Copies of the draft shall be provided by the Permittee to the Department.

B. Final

The Permittee shall finalize the Corrective Measure Study Report incorporating comments received from the Department on the Draft Corrective Measure Study Report. The report shall become final upon approval by the Department.

C. Public Review and Final Selection of Corrective Measures

Upon receipt of the Final Corrective Measure Study Report, EPA shall announce its availability to the public for review and comment. At the end of the comment period, the Department shall review the comments and then inform the Permittee of the final decision as to the approved Corrective Measures to be implemented.

APPENDIX D
SCHEDULE OF COMPLIANCE

Schedule of Compliance	Due Date
Notification of Newly Identified SWMUs and AOCs. Condition II.C.1 and Condition II.C.2.	Within fifteen (15) calendar days of discovery.
SWMU Assessment Report. Condition II.C.3.	Within ninety (90) calendar days of notification.
Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs. Condition II.D.1.	Within fifteen (15) calendar days of discovery.
Confirmatory Sampling Workplan for SWMUs identified in Appendix A. Condition II.E.1.	Within forty-five (45) calendar days of notification by the Department.
Confirmatory Sampling Report. Condition II.E.4.	Within sixty (60) calendar days after approval of the CS Workplan.
RFI Work Plan for SWMU(s) and AOC(s) Identified in Appendix A. Condition II.F.1.a.	Within ninety (90) calendar days after the approval of the Confirmatory Sampling Report.
RFI Work Plan for SWMU(s) and AOC(s) Identified under Condition II.C.4., Condition II.D.2., or Condition II.E.5. Condition II.F.1.b.	Within ninety (90) calendar days after receipt of notification by the Department which SWMUs or AOCs require and RFI.
RFI Progress Reports. Condition II.F.3.a.	Quarterly, beginning ninety (90) calendar days from the start date specified by the Department *
Draft RFI Report. Condition II.F.3.b.	In accordance with the approved RFI Workplan.
Final RFI Report Condition II.F.3.b.	Within thirty (30) calendar days after receipt of the Department's comments on the Draft RFI Report.
Interim Measures Plan Condition II.G.1.a.	Within thirty (30) calendar days of notification by the Department.
Interim Measures Progress Reports Condition II.G.3.a.	In accordance with the approved Interim Measures Workplan. **
Interim Measure Report Condition II.G.3.b.	Within ninety (90) calendar days of completion of interim measures.
CMS Work Plan Condition II.H.1.a.	Within ninety (90) calendar days of notification by the Department that a CMS is needed.
Implementation of CMS Work Plan Condition II.H.2.	Within thirty (30) calendar days after receipt of Department approval of plan.
Draft CMS Report Condition II.H.3.a.	In accordance with the schedule in the approved CMS Work plan.
Final CMS Report Condition II.H.3.a.	Within thirty (30) calendar days of Department's comments on draft CMS Report.
Demonstration of Financial Assurance Condition II.I.3.	Within one hundred and twenty (120) Calendar days after permit modification for remedy.

Schedule of Compliance	Due Date
Imminent Hazard Report Condition II.M.1. and II.M.2.	Oral within 24 hours; Written within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances.
Organic Air Emissions Report Condition V.B.	Within thirty (30) calendar days after implementation of the unit's modification.
Complete installation of emission control technology for units identified Condition VI.B.	By "Installation Due Date" under Condition VI.B.
Written report of noncompliance of tanks, surface impoundments or containers with 40 CFR 264.1082(c)(1) or (c)(2) Condition VI.D.1.	Within fifteen (15) calendar days of becoming aware of noncompliance.
Written report of noncompliance of tanks with 40 CFR 264.1084(c)(1) or (c)(2) Condition VI.D.2.	Within fifteen (15) calendar days of becoming aware of noncompliance.
Semi-annual Report for Use of Control Devices 40 CFR 264.1090(c) Condition VI.D.3.	Semi-annually, beginning six (6) months from the effective date of the permit. ***

The above reports must be signed and certified in accordance with 40 CFR 270.11 as adopted by 15A NCAC 13A .0113.

* This applies to Workplan execution that requires more than one hundred and eighty (180) calendar days.

** This applies to Workplan execution that requires more than one year.

*** Semi-annual report is not required if provisions of Condition VI.D.4. are met.

NCDENR

North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

Bobby

MEMORANDUM

TO: Elizabeth Cannon, Chief 7/11/05
Hazardous Waste Section

FROM: Larry Stanley, Hydrogeologist 5/2/05
Facility Management Branch

THRU: Bud McCarty, Branch Head BMC 7/8/05
Facility Management Branch

Robert Glaser, Unit Supervisor RG 7/6/05
Facility Management Branch

DATE: May 2, 2005

SUBJ: Evaluation of DAK Monomers/DuPont-Cape Fear Facility's Status Under the Corrective Action Environmental Indicator Event Codes CA725 and CA750.
EPA I.D. Number: NCD 047 369 046

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of the DAK/DuPont facility's status in relation to the following corrective action event codes defined in the I-BEAM Information System:

1) Current Human Exposures Under Control (CA725),

2) Migration of Contaminated Groundwater Under Control (CA750).

Concurrence by the Hazardous Waste Section Chief is required prior to entering these event codes into the I-BEAM system. Concurrence with the interpretations provided in the following paragraphs and the subsequent recommendations is indicated by the initials and dates next to the names shown above.

II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS

This particular evaluation is the third EI evaluation for the DAK/DuPont facility. The attached EI evaluation was completed by URS Diamond and DuPont-CRG. This summary memo was completed by the NC Hazardous Waste Section (HWS).

Due to potential off-site groundwater contamination, the first evaluation, dated 9/30/97, resulted in "No" status codes for both the CA 725 and CA 750 event codes. Unlike the first evaluation, the second, dated 8/24/00, used the EI questionnaire developed by EPA's Office of Solid Waste. In addition, a second phase of the RCRA Facility Investigation (RFI) was nearing completion at the time the second evaluation was performed, and the early data generated during this phase of investigation were incorporated into the EI evaluation. In this evaluation, DuPont considered the potential risks posed by the entire site. This holistic approach resulted in a "YE" status code for CA 725 and an "IN" status code for CA 750.

After the second EI evaluation was completed, DuPont's efforts largely focused on developing a comprehensive site conceptual model and collecting the data needed to reevaluate prior EI determinations. Data gathered for the EI reevaluation would normally have been collected for the RFI anyway, but the scheduling was adapted to fit into the EI timeframe. Sale of the Cape Fear property to DAK Monomers, an interim measures project, and closure of the facility's hazardous waste storage pad forced project teams, at times, to look at aspects of corrective action other than EI determinations and the RFI. During the Phase II and Phase III investigations, informational needs were influenced by the EI goals and resulted in a detailed understanding of potential exposure pathways and groundwater conditions at the site.

The following facility-specific documents were used to complete the EI evaluation: RCRA Facility Assessment Report (1988), Hazardous Waste Permits (1989), RFI Phase I Report (1993), Revised Phase II RCRA Facility Investigation Report (2001), RCRA Phase III Investigation Interim Report (2003), Hazardous Waste Pad Closure Report (2003), RCRA Phase III Monitoring Program (2003), HSWA-only Permit Renewal Application (2004), "Revised AOC A Interim Measures (IRM) Update" (2005), Revised Phase III RCRA Facility Investigation Report (2005). Guidelines presented in "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, Subsurface Vapor Intrusion Guidance" (2002) were also utilized in the EI evaluation.

III. FACILITY SUMMARY AND REGULATORY STATUS

The DAK/DuPont-Cape Fear facility is located on State Road No. 1426 in the far northeastern portion of Brunswick County. It is approximately six miles north of Leland, North Carolina and approximately 15 miles northwest of Wilmington, North Carolina. The facility is adjacent to the Cape Fear River, which runs along the northern and eastern limits of the property (Figure 1). In 2001, the manufacturing plant was sold to DAK Americas. DuPont retained

ownership of outlying areas, including most waste disposal units (Figure 4). Wetland acreage has been placed in a conservation easement overseen by the NC Coastal Land Trust.

The plant and support areas are fenced and access is controlled (Figure 2, CA 725). Individuals must receive current access passes. Enter and exit is through pedestrian checkpoints. Vehicular traffic is controlled by limiting traffic within the security fence to primarily DAK vehicles. All other vehicles must be clearly identified or have vehicle entry permits. Drivers, like other individuals, must be approved and have a DAK employee, contractor, or visitor pass.

The DAK plant began operations in 1968 and continues to manufacture *Dacron*® polyester resin and fibers. In addition, terephthalic acid (TPA) and dimethylterephthalate (DMT) intermediates were produced onsite for use in on and off-site *Dacron*® production. *Dacron*® polyester production is accomplished using TPA and ethylene glycol as the two main ingredients. In the process, the two compounds are combined at a temperature exceeding 400 degrees Fahrenheit to form a liquid. Water is produced as a by-product of the TPA process. The hot liquid is pumped through a series of vessels where the esterification and polymerization processes occur. The liquid polymer is then fed through plates with very small holes and immediately cooled with air into the solid fiber form. The fibers are wound onto bobbins or placed in bulk form into bales for shipment to customer textile mills.

The DAK plant generates, or has generated, the following wastes: 1) process, non-process and sanitary waste waters and storm water runoff; 2) trade wastes facility sludge; 3) laboratory wastes; 4) subsurface collection system wastes; 5) finish oils; 6) spent triethylene glycol; 7) waste terephthalic acid; 8) waste *Dowtherm*®; 9) waste motor oil, antifreeze, and waste lubricating oils; 10) spent acidic and caustic solutions; 11) power plant ash; 12) non-hazardous refuse; 13) incinerator residues; 14) waste from contractor operations (maintenance and construction); and 15) miscellaneous wastes. Miscellaneous wastes include contaminated glycol, waste monomer, solvents, waste regenerate from ion exchange columns, wastes generated during fire training exercises, wastes resulting from drum cleaning activities, waste water stored in an organic stripping column tank, wastes generated at an oil de-watering area, and low-level radioactive wastes. At one time, much of the wastes generated by plant operations were disposed of on-site in an assortment of pits, trenches, and landfills. Nearly all these former disposal units are located between the plant buildings and the Cape Fear River (Figure 2) and have been identified as SWMUs under the RCRA Corrective Action Program.

In 1989, a RCRA Part B permit was issued to the DuPont-Cape Fear plant for the operation of a hazardous waste storage pad. Prior to selling a business interest in the facility to DAK Monomers in 2001, DuPont applied to renew their operating permit. (While DAK and DuPont are now carried on the Part A permit as co-owners and co-operators, DuPont has responsibility for the RCRA environmental liability.) After the sale, DAK elected to move to its own less than 90-day drum storage pad, and DuPont decided to close the permitted unit. DuPont's hazardous waste storage pad was clean closed in 2004. DAK and DuPont submitted a HSWA-only permit application in 2004. The current HSWA-only permit application lists eighty SWMUs and Areas of Concern. (The original HSWA portion of the Part B operating permit listed seventy-five units and required investigation at five SWMUs.) As a result of a

SWMU/AOC prioritization project conducted in 2000 and a Baseline Environmental Site Assessment (ESA) completed in 2001, the number of units receiving some level of investigative activity through the RFI process now totals thirty-one.

Phase I of the RFI was performed to address the five SWMUs designated by the 1989 permit as requiring investigation. Both soil and groundwater samples were collected from these units. Following Phase I of the RFI, a few additional SWMUs were added to the list of units requiring investigation. The revised status of these units was based upon reports of potential releases. The units were investigated as part of the Phase II RFI. Phase II, which was completed in 2001, included a lithologic investigation, soil sampling, monitoring well installations, and site-wide groundwater monitoring. As part of Phase II RFI activities, DuPont also prioritized all SWMUs and AOCs based on the potential risks posed by a release from each unit. (Copies of the "SWMU Prioritization Worksheets" are included as an appendix to the Phase II RFI report.) The objectives of Phase III of the RFI were to fill data gaps identified during Phase II, investigate units brought forward from the Baseline ESA and SWMU prioritization projects, strengthen the site conceptual model, complete data collections necessary to achieve EI goals, and establish a site-wide groundwater monitoring program.

Over the years, DuPont conducted several voluntary environmental investigations. These investigations include the 1994 sump investigation at SWMU 1B, the 1995 investigations at SWMUs 2 and 12, and the 1997 parazylene release investigation at AOC A. The results of the initial investigations were reported to the HWS and later included in RFI work plans and reports. Expanded investigations were conducted at most of these units under the RFI. DAK Monomers performed a Baseline ESA prior to the sale of the Cape Fear property. The results of this assessment were included as Appendix A in the Phase III RFI work plan. In addition, SWMUs 53, 54, and 59 are landfills permitted through the NC Solid Waste Section. A groundwater monitoring program is required through the Solid Waste Section's permits.

IV. CONCLUSION FOR CA725

The "CA-725-Human Exposures Under Control" environmental indicator is based upon an evaluation of the potential for human exposures to contaminated media. The contaminated media present at the DAK/DuPont site, potential exposure pathways, and possible exposure scenarios (i.e., pathway to potential human receptors) are presented in the current EI evaluation and summarized in this memo. Groundwater, surface soil, subsurface soil, and surface water are contaminated at constituent concentrations greater than appropriately protective risk-based standards. The potential for vapor intrusion from contaminated groundwater exists at the site and was also evaluated. As defined by EPA, EI evaluations consider only current land and resource uses.

Groundwater

The constituents of potential concern (COPC) present in groundwater at the DAK/DuPont site include 1,4-dioxane, diphenyl ether, benzene, cis-1,2-dichloroethene, bis(2-

ethylhexyl)phthalate, chloroform, biphenyl, glycols, naphthalene, xylene, trichloroethene, vinyl chloride, tetrachloroethene, lead, selenium, thallium, and arsenic (Table 3, CA 725). This list of COPCs was developed by screening constituent concentrations against published drinking water standards. (Diphenyl ether does not have published risk-based standards, so the groundwater standard for a structurally similar chemical was used.) Groundwater at the facility is not used as either a drinking water or industrial water source, and no users are present in the vicinity of the facility. Contaminated groundwater occurs in a geographically defined area, and there do not appear to be stresses placed on the surficial aquifer by activities such as groundwater withdrawal.

The depth to groundwater at the DAK/DuPont site is from two to ten feet below ground surface. As a result, site construction workers are possible human receptors. Exposure pathways may be completed by incidental ingestion of and dermal contact with groundwater and/or inhalation of vapor phase chemicals released from the groundwater to a confined space such as a trench. However, the facility uses an internal permitting process that requires DuPont-CRG authorization for any intrusive activity into soils or building foundations. (DAK has agreed to these administrative controls through a third party agreement with DuPont.) The purpose of the permitting process is to ensure that appropriate measures are taken for personnel protection should intrusive activity encounter impacted groundwater. Consequently, the contaminated groundwater to human receptor exposure pathway is reasonably expected to be incomplete.

Surface Soil

Many SWMUs at the DAK/DuPont site are disposal units covered with barrow soil. Other units in the manufacturing area are covered with concrete or a layer of gravel. Complete pathways between contaminated surface soil and human receptors are unlikely at these units, and exposures are not reasonably expected.

Surface soil samples have been collected at SWMU 1B (Intermediates Wastewater Collection System), SWMU 37 (Former Incinerator Area), AOC A (Paraxylene Storage Tank Area), AOC B (Former Fire Training Area), and AOC FMA (Fibers Manufacturing Area). These samples were analyzed for a variety of volatiles, semivolatiles, and metals (Tables 4-10, CA 725). Analytical results were screened by comparing constituent concentrations to EPA Region 9 industrial standards and background concentrations (Table 1, CA 725). (Constituents without Region IX PRGs were compared to structurally similar compounds with published PRGs.) Arsenic at SWMU 37 and xylenes at AOC A were detected at concentrations exceeding screening levels.

Arsenic was detected above its Region 9 industrial PRG and site-specific background in the original surface soil sample collected east of the SWMU 37. There is the potential for complete exposure pathways for industrial and construction workers. However, eleven delineation samples collected later did not exhibit arsenic concentrations indicative of a release. (The arsenic concentrations did not exceed two times background.) In other words, the area impacted by arsenic is limited and maximum arsenic concentrations are only slightly above background. Since the incinerator has been decommissioned, this area of the plant is lightly used, and an industrial worker's exposure time would be minimal. Although there currently is no

construction in this area of the plant, there is the potential for a pathway to construction workers during intrusive activities. However, the facility's internal permitting process would ensure that the construction worker pathway is incomplete. Exposures to arsenic in surface soil through the industrial worker and construction worker pathways are not reasonably expected to be significant.

An interim measure was conducted at AOC A in late 2004. The purpose of the interim measure was to excavate surface soil contaminated with xylene at concentrations exceeding Region 9 industrial standards (420 mg/kg). Impacted soil was excavated down to the water table, which in this area of the plant is at a depth of two to four feet. The presence of aboveground piping limited the area of planned excavation. Xylene concentrations in surface soil samples (0 to 1 foot bgs) collected from beneath the aboveground piping were less than industrial standards. AOC A is lightly visited by industrial workers, and the industrial worker exposure pathway is not reasonably expected to be significant.

Subsurface Soil

As discussed previously, an interim remedial measure at AOC A removed surface soils (0 to 1 foot bgs) exhibiting xylene concentrations above industrial PRGs. However, the presence of aboveground piping limited excavation on the eastern side of the AOC, and xylene is present in subsurface soil (> 1 ft bgs) at concentrations above the industrial standard. Maintenance work is necessary in the area of the aboveground piping, and at times, this work requires limited excavation of subsurface soil. DuPont-CRG developed a site-specific screening level to evaluate the potential for risk to excavation/utility workers from exposure to subsurface soils contaminated with xylene. The site-specific screening level of 4,120 mg/kg was calculated using the algorithms presented in the EPA Region IX PRG table. The site-specific assumptions utilized in the calculations are conservative estimates (likely to overestimate actual exposure) for exposures by an excavation/utility worker to conditions at AOC A. The Region IX algorithms include the inhalation exposure route as well as ingestion. Maximum detected concentrations of xylene in subsurface soil (3,100 mg/kg) at AOC A are below the calculated site-specific screening level of 4,120 mg/kg.

At the DAK/DuPont site, exposure to subsurface soil is possible only during excavation and construction activities. Investigations have identified xylene and arsenic as constituents of potential concern in subsurface soil (Tables 12-19, CA 725). These constituents exceed their direct contact screening criteria. The potentially complete exposure pathway from subsurface soil is to on-site construction/excavation workers. Adherence to DAK/DuPont's internal permitting process would prevent access to impacted subsurface soil without protective measures. (Even though xylene concentrations are below the site-specific standard, an excavation permit is required at AOC A for any intrusive activity greater than 1 foot below ground surface or within 5 feet of a suspected underground utility.) Consequently, potential exposures to contaminated subsurface soil by construction/excavation workers are not reasonably expected to be significant.

Surface Water

Small surface water channels located on the northeast perimeter of the facility were monitored as part of Phase III RFI activities. These channels are low flowing ephemeral streams or drainage ditches. Samples were collected at five locations for two or three sampling events (Figure 2). The analyte list was based upon the constituents that had been detected in groundwater. Constituent concentrations were compared to NC 2B Surface Water Standards or to Federal Ambient Water Quality Criteria when NC 2B Standards were unavailable (Table 11, CA 725). The Phase III RFI identified three metals; arsenic, nickel, and lead; above screening levels at two locations (SW-3 and SW-4). Exceedances were noted in one round of sampling (June 2003) but were either non-detect or less than screening levels in the subsequent round (December 2003).

The adjacent wetlands and on-site surface waters are not used for recreational purposes due to restricted access and a conservation easement in the outlying areas of the site. Maintenance activities do not occur in these areas. Therefore, a direct exposure pathway from surface water in the wetlands and on-site surface waters to on-site industrial workers and recreational users is reasonably expected to be incomplete. However, occasional trespassing (deer hunting) has been observed in the outlying areas where potential receptors may wade in wetlands and on-site drainages. Given that trespassing is actively discouraged, exposures would probably be infrequent and of short duration. When these considerations are coupled with the reported concentrations of the constituents of potential concern, exposures are reasonably expected to be insignificant.

Shallow groundwater from the facility may discharge to the Cape Fear River. The Cape Fear River is designated as a Class C river by the State of North Carolina. Water from the river is used for aquatic life propagation and maintenance, wildlife, secondary recreation, agriculture, and any other usage except for primary recreation (i.e., swimming) or as a drinking water source. The most probable human receptors would be users of the river for secondary recreation (i.e., fishing). The likely exposure pathway would be by incidental ingestion of or dermal contact with river water while fishing and incidental ingestion of fish harvested from the river. Since modeled surface water concentrations in the Cape Fear River are below applicable NC 2B surface water standards, exposure pathways associated with food are not reasonable expected to be significant (Table 20, CA 725).

Vapor Intrusion to Indoor Air

The Occupational Safety and Health Administration (OSHA) and US EPA have agreed that OSHA generally will take the lead role in addressing vapor intrusion in occupational settings for all workers and all chemicals (Table 2, CA 725). Occupied buildings are located throughout the active manufacturing area. However, there are two areas where VOCs in groundwater are likely to be within 100 feet of an occupied building. These are the AOC FMA and TPA Manufacturing Area located near SWMU 1B (Wastewater Collection System) in the *Dacron®* Intermediates Plant 2 Manufacturing Area. DuPont assessed the potential for vapor intrusion at these two areas.

DAK Monomers completed an enclosed space vapor intrusion study at AOC FMA in May 2003 to evaluate potential industrial worker exposure to TCE, benzene, naphthalene, and vinyl chloride emanating from shallow groundwater. Results of personnel indoor air monitoring were below OSHA PELs and method detection limits (MDLs) (Appendix B, CA 725). Consequently, the potential exposure of on-site industrial workers to vapor phase chemicals released from shallow groundwater to indoor air is not considered significant in this area.

According to the Phase III RFI, groundwater concentrations near AOC FMA are generally equal to or greater in magnitude than concentrations observed at SWMU 1B, with the exception of vinyl chloride and benzene. As a result, the potential for vapor intrusion to indoor air from groundwater and soil pathways was evaluated for the SWMU 1B area. Of the five monitoring wells (MW-25, MW-28, MW-37, MW-47, and MW-49) located near this unit, monitoring well MW-37 is closest to the only occupied structure, the Extruder Building, where workers are expected to spend any appreciable time (Figure 3, CA 725). As such, MW-37 was selected to represent worst-case groundwater quality in the manufacturing area. No other occupied structures are located near the other monitoring well locations, including MW-49 where maximum detections of vinyl chloride have been observed, and groundwater flow from these locations are away from the Extruder Building. As a result, maximum detected concentrations observed in location MW-37 were used in the evaluation.

The evaluation, which followed the principles outlined in "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, Subsurface Vapor Intrusion Guidance" (2002), concluded that there were no VOCs that exceeded the screening levels. Screening levels could not be calculated for n-propylbenzene since AELs, PELs, or TLVs have not been established. It is believed that screening levels for this constituent would be in similar in magnitude as the other screening levels. In general, this constituent was detected at lower concentrations compared to the other constituents present within the respective sample. Therefore, vapor intrusion of VOCs from groundwater to indoor area is not expected to be a potential concern.

Based on the preceding discussions, the current human exposures at the DAK/DuPont-Cape Fear facility are under control. Therefore, a YE status code will be entered into the I-BEAM with the CA 725 event code. The YE status code entry is the most appropriate because there are no current scenarios whereby significant human exposures and adverse effects are reasonably expected to occur at the site.

V. CONCLUSION FOR CA750

Site Hydrogeology

The important hydrogeologic units beneath the DAK/DuPont facility are a surficial aquifer, the Peedee confining unit, and the Peedee Aquifer. The surficial aquifer at the site consists of the sand, clay, and limestone ("coquina") of the Wando Formation and Recent alluvial sediments. The coquina is tightly cemented and has low permeability. The site-wide

thickness of the surficial aquifer ranges from 14 to 35 feet, and the depth to groundwater ranges from 2 to 10 feet below grade. Underlying the surficial aquifer is the Peedee confining unit. The Peedee confining unit is predominantly composed of dark grey, very fine to fine-grained, sandy silts and silty sands with some clay. Vertical hydraulic conductivity measurements on Shelby tube samples collected from the confining unit ranged from 10^{-6} to 10^{-7} cm/sec. This unit extends across the site and measures as much as 30 feet thick. Beneath the Peedee confining unit are the sand deposits of the Peedee Aquifer. The Peedee Aquifer is an important source of groundwater for eastern North Carolina. Based on available hydrogeologic cross sections and well logs, the Peedee aquifer ranges from between 225 and 250 feet thick in the vicinity of the facility.

At one time, the facility operated a drinking water well field and a non-community water well system. The former well field was located approximately one mile southwest of the plant area. DuPont connected to the Brunswick County Municipal Water System in 1994, and the original well field is no longer used. The drinking water wells were completed in the surficial aquifer, with screened intervals ranging between 15 and 40 feet below grade. According to boring logs, the wells were completed in either well-sorted sand or coarse shell hash mixed with sand. The well field produced an average of 60 gallons of water per minute.

The water table surface, which has its highest elevation in the manufacturing area, slopes toward the Cape Fear River. Groundwater gradients increase significantly near the river (Figure 3, CA 750). At the site scale, groundwater flows toward the Cape Fear River. The river forms a large bend around the north, northeastern, and eastern boundaries of the facility. Smaller features, such as creeks and outfalls, also appear to affect the water table surface and influence local groundwater flow directions. In addition, a low in the water table surface in the vicinity of monitoring well MW-28 appears to be caused by lithologic variations in the surficial aquifer. The results of a tidal study confirmed that the surficial aquifer is in communication with the river and is impacted by the tides. However, tidal influences are minor and do not affect groundwater flow directions and gradients in the vicinity of the plant.

Groundwater Investigations and CA 750 Determination

By 2003, the three phases of the RFI had demonstrated that groundwater at the DAK/DuPont facility had been impacted by a variety of constituents released from several units. Based upon these prior investigations, DuPont planned and implemented a site-wide groundwater monitoring program. The purposes of this monitoring program were to determine whether groundwater conditions are at study state, characterize groundwater conditions along the downgradient perimeter of the site, and study the potential impacts of groundwater discharges to surface water. Groundwater samples from permanent monitoring wells were collected on a quarterly schedule for a period of one year, and in-situ groundwater samples (i.e., geoprobe samples) were collected on a one time basis. Groundwater samples were analyzed for a site-specific list of constituents of potential concern.

Groundwater data collected from April 2002 to October 2004, including those data collected as part of the site-wide monitoring program, were used in this EI evaluation (Figure 2, CA 750). Constituent concentrations were compared to NC 2L Groundwater Standards, NC

Interim Maximum Allowable Concentrations (IMACs) and in the absence of either of these two standards, Region 9 Tap Water Standards. (Diphenyl ether does not have a health-based standard, so a standard for a structurally similar compound was used. Methoxychlor was recommended as a structurally similar compound by EPA's Cincinnati office.) Diphenyl ether, 1,4 dioxane, benzene, cis-1,2-dichloroethene, trichloroethene, tetrachloroethene, naphthalene, biphenyl, vinyl chloride, diethylene glycol, triethylene glycol, chloroform, xylene, bis(2-ethylhexyl)phthalate, selenium, thallium, lead, and arsenic were determined to be constituents of potential concern (Table 1, CA 750).

In general, the concentrations of these constituents were consistent during the four sampling events of the site-wide groundwater monitoring program. Historical data collected before the site-wide monitoring program was initiated also indicated constituent concentrations have remained stable or decreased. The Cape Fear River is the downgradient regional boundary for the surficial aquifer. Based on a lithologic study conducted as part of the RFI, the surficial aquifer is probably not in communication with the Peedee Aquifer. Available evidence shows that the migration of contaminated groundwater has stabilized to the extent that the volume of impacted groundwater is not increasing.

A risk-based screening approach was used to determine if the discharge of contaminated groundwater into surface water is likely to be "insignificant." Maximum constituent concentrations reported for the wells that constitute the downgradient perimeter of the site-wide monitoring network were compared to applicable groundwater standards. Constituents with maximum concentrations exceeding their groundwater standard were then compared to ten times the groundwater standard to account for groundwater/surface water interactions. Since arsenic, diphenyl ether, benzene, bis(2-ethylhexyl)phthalate, chloroform, cis-1,2 dichloroethene, tetrachloroethene, trichloroethene, and vinyl chloride were not screened out by this procedure; the discharge of contaminated groundwater into surface water is potentially significant (Table 2, CA 750).

An evaluation of groundwater discharge to the Cape Fear River was performed to determine whether discharge of the constituents listed above are likely to result in exceedances of surface water quality criteria (Table 3, CA 750). The surface water quality criteria used in this evaluation was the lesser of the NC 2B standard for protection of freshwater organisms or for protection of human health. A value for the Cape Fear River's minimum 7-day ten year flow rate (593 million gallons/day) was obtained from the plant's NPDES permit. Darcy's Law (Q=KIA) was used to conservatively estimate the discharge of groundwater from the surficial aquifer to the Cape Fear River. Average values for the hydraulic gradient (K) and a representative groundwater gradient (I) were taken from the results of the Phase II RFI. A value for the area of discharge was determined by multiplying the average saturated thickness of the surficial aquifer, 20 feet, by the appropriate river reach. Based on the site-scaled distribution of constituents in the groundwater, a river reach of 6,200 feet was used for chlorinated VOCs and 14,000 feet was used for all other constituents. When modeled using this approach, the maximum concentrations of constituents discharging from groundwater to the Cape Fear River are not likely to result in exceedances of their surface water standards. The discharge of contaminated groundwater can be considered to be "currently acceptable."

A YE status code will be entered into I-BEAM for the CA-750 environmental indicator event code. Based upon a review of the information contained in this EI determination and the documents referenced in Section II of this memo, the migration of contaminated groundwater is under control at the DAK/DuPont-Cape Fear facility. Specifically, this determination indicates that the migration of contaminated groundwater is under control and that monitoring will be conducted to confirm that the existing volume of contaminated groundwater does not increase.

VI. SUMMARY OF FOLLOW-UP ACTIONS

DAK Monomers and DuPont-CRG have achieved positive determinations for the two environmental indicators addressed by this evaluation. After reviewing the available data and the completed EI evaluation, the NC Hazardous Waste Section concurs that "current human exposures are under control" and the "migration of contaminated groundwater is under control."

Positive determinations for the two environmental indicators reflect current land and resource uses at the site. Of equal importance is DuPont-CRG's plan to conduct additional investigations designed to fill data gaps in the current site conceptual model. Changes in either of these two areas--land and resource use or major revisions to the site conceptual model--could necessitate another EI evaluation. The two currently assigned "YE" status codes will remain in the I-BEAM information system only as long as they are, in the opinion of the HWS, accurate.

cc: Jon Johnston, US EPA Region 4
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DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name:	**DuPont Cape Fear Plant**
Facility Address:	**State Road 1426 Leland, North Carolina**
Facility EPA ID #:	**NCD 047369046**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   _√_ If yes - check here and continue with #2 below.

   ____ If no - re-evaluate existing data, or

   ____ if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives, which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater	√			Constituents of potential concern (COPCs) in site-wide groundwater include: benzene, biphenyl, bis(2-ethylhexyl)phthalate, chloroform, cis-1,2-dichloroethene, 1,4-dioxane, diphenyl ether, glycols, naphthalene, tetrachloroethene, trichloroethene, vinyl chloride, xylenes and arsenic, lead, selenium and thallium (Table 2).
Air (indoors)[2]		√		Volatile organic compounds (VOCs) have been detected in groundwater at the site. However, there were no VOCs that exceeded the vapor intrusion screening levels (Table 4).
Surface Soil (e.g., <2 ft)	√			Arsenic at SWMU 37 was detected above screening levels (Tables 5-10).
Surface Water	√			Metals (arsenic, nickel and lead) were detected above screening levels at the site (Table 11)
Sediment		√		Not considered a media of concern. See rationale for more information.
Subsurface Soil (e.g., >2 ft)	√			Xylenes at AOC A and SWMU 1B and arsenic at SWMU 59 exceeded direct contact screening levels in subsurface soil (Tables 12-19).
Air (outdoors)		√		Not considered a media of concern. See rationale for more information.

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

√ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) – skip to #6 and enter "IN" status code.

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

Rationale and Reference(s):

Data Set for EI Evaluation

Site data evaluated for this step included: Groundwater samples collected from between four and eight rounds of monitoring (depending on location) at 48 locations between April 2002 and October 2004; Surface soil samples (depending on investigation, 0-1 ft bgs or 0-2 ft bgs interval) and subsurface soil samples (within 12 feet bgs) collected during the Phase II and Phase III RFI, AOC A Interim Remedial Measure (IRM); and, Surface water samples collected from between 2 and 3 rounds of monitoring (depending on location) at five locations collected in on-site drainage features in the Outlying Area during the Phase III RFI. Groundwater and surface water sample locations are detailed in Figure 2. Soil sample locations are detailed in the Phase II RFI Report (March, 2001), Phase III RFI Report (February, 2005) and AOC A Interim Remedial Measures (IRM) Update (April, 2005). Analytical data utilized in the EI evaluation is summarized in Appendix A.

Screening Levels Used to Evaluate Site Data

Concentrations of constituents detected in the EI evaluation data set were compared to appropriate screening levels to assess potential impact to human health and the environment and to identify COPCs. The following screening levels were utilized during the evaluation:

- Groundwater – Shallow groundwater is not used for drinking water on or near the site, therefore there are no appropriate risk-based levels for screening. However, due to the shallow depth of groundwater direct contact may occur during intrusive activities. As conservative measure, constituents detected in groundwater were compared to the North Carolina Groundwater Quality Standard (NC2L), NC Interim Maximum Allowable Concentration (IMAC) or USEPA Region IX Preliminary Remediation Goals (PRGs) for Tap Water, where NC2Ls or IMACs were unavailable.

  When a screening value was not available from any of these sources, the screening value from a structurally similar chemical was utilized. For instance, diphenyl ether does not have a NC 2L standard. Per correspondence with the North Carolina Hazardous Waste Section, the USEPA Superfund Technical Support Center in Cincinnati recommended the use of methoxychlor as a surrogate compound for diphenyl ether in groundwater. DuPont has developed a site-specific screening level for diphenyl ether in soil (Appendix B).

- Soil – Surface and subsurface soil concentrations were compared to USEPA Region IX PRGs for industrial soil. The PRG represents a combined exposure including inhalation of particulates and volatile compounds, dermal absorption, and ingestion. Concentrations in soil were also compared to site-specific background soil samples collected during the Phase II RFI (Table 1).

- Surface Water – Surface water concentrations were compared to North Carolina Surface Water Quality Standards (15A NCAC 2B). The surface water quality criteria used in the evaluation was based on the protection of human health (fish consumption). If NC 2B standards were unavailable, then concentrations were compared to NC2L criteria.

- Indoor Air – The Occupational Safety and Health Administration (OSHA) and USEPA have agreed that OSHA generally will take the lead role in addressing vapor intrusion in occupational settings for all workers (USEPA, 2002) and all chemicals (USEPA 2003). As such, DuPont and DAK America will ensure that steps (such as modeling, monitoring and hazard communication), as needed, are in place to appropriately address the vapor intrusion pathway if it is identified.

  Based on the agreement between USEPA and OSHA, USEPA does not expect that its draft vapor intrusion guidance (*Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, Subsurface Vapor Intrusion Guidance, November 2002*) be used in primarily occupational settings. Although the subsurface vapor guidance is specific to residential sites, the general principles may be adjusted for other land uses (i.e., industrial, commercial). Since the Site is industrial, the OSHA permissible exposure levels (PELs) and the American Conference of Governmental Industrial Hygienist (ACGIH) threshold limit values (TLVs) were used to develop appropriate indoor air target concentrations for potential on-site exposure rather than use the residential indoor air target concentrations provided in the draft guidance (Table 3). Where PELs or TLVs were

unavailable, DuPont Acceptable Exposure Levels (AELs) were utilized in the calculation. AELs, PELs and TLVs are generally 8-hour or 12-hour time-weighted average air concentrations that are considered health-protective of the worker population. Screening levels were developed using the methodology from the subsurface vapor guidance (Appendix D of USEPA, 2002).

Constituents of Potential Concern

Groundwater: Table 2 details the site-wide evaluation. For the purpose of the evaluation, groundwater was evaluated by geographical area (manufacture, support and outlying areas) (Figure 4). Monitoring well locations are detailed in Figure 2.

- Active Manufacturing Area - There are three specific areas where groundwater has been impacted in the active manufacturing area of the plant: SWMU 1B, SWMU 37, and AOC FMA. COPCs in the area include: 1,4-dioxane, cis-1,2-dichloroethylene, diphenyl ether, biphenyl, naphthalene and vinyl chloride.
- Plant Support Area - There are three specific areas where groundwater has been impacted in the support area of the plant: SWMUs 5 and 6, 57, and 58, and AOCs B and C. COPCs in the area include: 1,4-dioxane, benzene, diethylene glycol, ethylene glycol, arsenic and lead.
- Outlying Area - There are three specific areas where groundwater has been impacted in the outlying (former landfill) area of the plant: SWMUs 53, 55, and 59. COPCs in the area include: benzene, bis(2-ethylhexyl)phthalate, chloroform, cis-1,2-dichloroethylene, tetrachloroethylene, triethylene glycol, trichloroethene, vinyl chloride, xylenes, arsenic, selenium and thallium.

Indoor Air: There are two potential areas where VOCs in groundwater were within 100 feet of occupied buildings to evaluate potential vapor intrusion. These are AOC FMA and SWMU 1B.

DAK Americas completed an enclosed space vapor intrusion study at AOC FMA in May 2003 to evaluate potential industrial worker exposure to TCE, benzene, naphthalene, and vinyl chloride emanating from shallow groundwater in the area. Results of personnel indoor air monitoring were below OSHA PELs and method detection limits (Appendix C). Consequently, the potential exposure of on-site industrial workers to vapor phase chemicals released from shallow groundwater to indoor air is not considered significant in this area.

According to the Phase III RFI, groundwater concentrations near AOC FMA are generally equal to or greater in magnitude than concentrations observed at SWMU 1B, with the exception of vinyl chloride and benzene. As a result, the potential for vapor intrusion to indoor air from groundwater and soil pathways was evaluated for the SWMU 1B area. Of the five monitoring wells (MW-25, MW-28, MW-37, MW-47, and MW-49) located near this unit, monitoring well MW-37 is closest to the only occupied structure (the Extruder Building) in this area where workers are expected to spend any appreciable time (Figure 3). As such, MW-37 was selected to represent worst-case groundwater quality in the manufacturing area. No other occupied structures are located near the other monitoring well locations, including MW-49 where maximum detections of vinyl chloride have been observed, and groundwater flow from these locations are away from the Extruder Building. As a result, maximum detected concentrations observed in location MW-37 were used in the evaluation (Table 4).

The evaluation, which followed the principles outlined in the draft Guidance (*Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, Subsurface Vapor Intrusion Guidance, November 2002*), concluded that there were no VOCs that exceeded the screening levels. Screening levels could not be calculated for n-propylbenzene since AELs, PELs or TLVs have not been established. It is suspected that screening levels for this constituent would be in similar in magnitude as the other screening levels. In general, this constituent was detected at lower concentrations compared to the other constituents present within the respective sample. Therefore, vapor intrusion of VOCs from groundwater to indoor area is not expected to be a potential concern.

Soil data was excluded from the indoor air evaluation. The draft vapor intrusion guidance does not recommend the use of soil concentrations because of the large uncertainties associated with using them. However, soil concentrations provide useful information in identifying potential source areas. At the Former DuPont Cape Fear Plant, groundwater is very shallow (approximately 10 feet below ground

surface). Therefore potential source areas in the subsurface soil would likely be in or very near the saturated zone (DuPont CRG, 2005).

Volatile constituents have been reported in shallow groundwater at the Plant Support and Outlying Areas of the site. However, the potential for vapor intrusion into buildings in these areas is incomplete, though, since locations where constituents in groundwater exceed screening levels does not extend under or is not within 100 feet of occupied buildings.

Surface soil: Previous investigations at the Former DuPont Cape Fear Plant have identified arsenic as a COPC in surface soil at SWMU 37. Arsenic was detected above the PRG and site-specific soil background at only two locations collected adjacent to the Former Incinerator Facility located in the Active Manufacturing Area. Arsenic detections above the PRG at other units were below site-specific soil background concentrations (Tables 5 –10).

Groundwater samples collected from monitor wells located throughout the site verify that soil-to-groundwater releases may also have occurred from some of these units.

Surface Water: The Phase III RFI identified three metals (arsenic, nickel and lead) above screening levels in surface water at two locations (SW-3 and SW-4) collected from drainage features in the Outlying Area of the Former DuPont Cape Fear Plant (Table 11). Exceedances were noted in one round of sampling (June 2003) but were either non-detect or less than screening levels in the subsequent round (December 2003).

Sediment: Sediment is not considered a media of concern at the site. On-site ponds are not dredged and on-site workers do not come into contact with the pond sediments. Likewise, on-site workers do not conduct maintenance activities in the drainage features located in the Plant Support and Outlying Areas. Constituents detected in shallow groundwater discharging to on-site surface water (drainage features) and off-site surface water (Cape Fear River) is not a concern. Due to the overall low concentrations of constituents detected in perimeter groundwater monitoring wells combined with their chemical and physical properties, accumulation in sediment of receiving water bodies would likely not be significant (i.e., low soil sorption, readily soluble and low potential to bioconcentrate).

Subsurface Soil: Previous investigations at the Former DuPont Cape Fear Plant have identified xylenes and arsenic as COPCs in subsurface soil (Tables 12-19). COPCs would be accessible only during intrusive activities. Excavation limitations are in place to ensure the appropriate personal protective equipment (PPE) is used if soil is disturbed.

Groundwater samples collected from monitor wells located throughout the site verify that soil-to-groundwater releases may also have occurred from some of these units.

Air (outdoors): For the purposes of assessing inhalation exposures via the soil-to-air pathway, the pathway-specific industrial soil PRG values provided in the USEPA Region IX PRG intercalc tables were utilized. No constituents exceeded the pathway-specific soil PRGs.

Inhalation of volatile constituents released from groundwater to outdoor air is considered insignificant due to the low levels of constituents detected (< 50 ug/L in the Plant Support and Outlying Areas) and/or the ground cover present precluding significant vapor migration (i.e., asphalt or concrete in the Active Manufacturing Area). As a result, the groundwater to outdoor air pathway is not of a concern.

References:

DuPont CRG, 2001. *Phase II RCRA Facility Investigation Report.* Prepared for Former DuPont Cape Fear Plant, Leland, North Carolina. May 14.

DuPont CRG, 2005. *Phase III RCRA Facility Investigation Report.* Prepared for Former DuPont Cape Fear Plant, Leland, North Carolina. August 24, 2004 revised February 28, 2005.

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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential Human Receptors (Under Current Conditions)

Contaminated Media	~~**Residents**~~	**Workers**	~~**Day Care**~~	**Construction**	**Trespassers**	**Recreation**	**Food**[2]
Groundwater		**No**		**Yes**	**N/L**	**N/L**	**No**
~~Air (indoors)~~							
Soil (surface, e.g., <2 ft)		**Yes**		**Yes**	**No**	**No**	**No**
Surface Water		**No**		**N/L**	**Yes**	**Yes**	**Yes**
~~Sediment~~							
Soil (subsurface e.g., >2 ft)		**No**		**Yes**	**N/L**	**N/L**	**No**
~~Air (outdoors)~~							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strikeout specific Media including Human Receptors' spaces for Media which are not ("contaminated") as identified in #2 above.
2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media – Human Receptor combination (Pathway). N/L = Not Likely
3. Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) – skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

__√__ If yes (pathways are complete for any "Contaminated" Media – Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

2 Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Rationale and Reference(s):

Potential human receptors include:

(1) **On-site Industrial Workers**: The on-site industrial worker is potentially exposed to constituents in surface soil (conservatively defined as 0 to 1 feet bgs) during day to day operations in the Active Manufacturing Area and specific locations in the Plant Support Area. Intermittent activities occur in isolated portions of the Outlying Area.

(2) **On-site Construction/Excavation Workers:** The on-site construction/excavation worker is potentially exposed to constituents in soil and groundwater while repairing subsurface utility lines, performing remedial activities or short-term construction. Subsurface soil depths for direct contact exposures by this receptor are defined as 1 to 12 feet bgs based on past activity at the facility and the location of utilities on-site. Groundwater occurs at depths as shallow as 2 feet bgs at the site; therefore, direct contact with groundwater may also occur during intrusive activities.

(3) **Recreational User of the Cape Fear River:** The recreational user is assumed to be an adult recreational angler of the Cape Fear River. The recreational user is potentially exposed to constituents in shallow groundwater discharged to the river.

The main plant area (formerly DuPont owned) is fenced / guarded and downgradient onsite areas (currently DuPont owned) between the main plant area and the Cape Fear River are access controlled and limited to authorized personnel only. Therefore, trespassers were also not considered potential receptors in these areas. However, occasional trespassing activities have been observed in the Outlying Area of the plant. Therefore, **on-site trespassers** were considered potential receptors in this area.

No downgradient users of off-site groundwater exist due to the prevailing flow direction towards the Cape Fear River. Therefore, off-site residents exposed to groundwater were not considered potential receptors.

Sensitive receptors (such as daycare) are not located on or adjacent to the site. Therefore, these receptors were not considered potential receptors.

Complete Exposure Pathways by Media:

(1) **Groundwater:** The potential for exposure is low because groundwater is not used on-site for potable or industrial purposes and downgradient users of groundwater have not been identified. However, due to the shallow depth of groundwater, exposure may occur during intrusive activities.

Potentially complete exposure pathways may include: on-site construction/excavation worker - incidental ingestion of and dermal contact with groundwater, and inhalation of vapor phase chemicals released from groundwater to a confined space (trench).

(2) **Surface Soil:** The potential for exposure to COPCs in surface soils is low for most receptors under current conditions because the principal areas of surface soil contamination are limited to few locations in the Active Manufacturing Area, which are covered by compacted, crushed stone. The receptor with the greatest potential for exposure is the on-site construction/excavation worker, where a greater likelihood of direct contact with impacted soil is associated with intrusive activities.

Potentially complete exposure pathways may include the following for the on-site industrial and construction/excavation workers – incidental ingestion of and dermal contact with surface soil and inhalation of soil-derived particulates or vapors.

(3) **Surface Water:** Shallow groundwater from the Plant Support and Outlying Areas may discharge to the Cape Fear River and/or adjacent wetlands. As previously discussed, occasional trespassing has been observed in the Outlying Area where potential receptors may wade in on-site drainage features, though unlikely, and the Cape Fear River is used for recreational purposes.

Potentially complete exposure pathways may include the following for the on-site trespasser (Outlying Area) - incidental ingestion of and dermal contact with surface water while wading; and recreational user of Cape Fear River - incidental ingestion of and dermal contact with river water while fishing; and incidental ingestion of harvested fish from the river. The aforementioned recreational use scenarios are protective of

other recreational use scenarios identified for the site (e.g., swimmers and boaters) since exposure assumptions utilized for the recreational fishing scenario are more conservative.

(4) **Subsurface Soil**: Because subsurface soil contamination is only present on-site, and exposure to subsurface soil is only achieved during excavation and construction activities, the only potential receptor is the on-site construction/excavation worker.

Potentially complete exposure pathways may include incidental ingestion of and dermal contact with subsurface soil and inhalation of soil-derived particulates and vapors.

Incomplete Exposure Pathways by Media:

(1) **Groundwater:** Shallow groundwater is not used on-site for potable or industrial uses and residential users have not been identified downgradient of the site. Furthermore, the downgradient Cape Fear River is not used for potable or water supply purposes. Therefore, direct contact (ingestion or dermal contact) with groundwater for on-site industrial workers and off-site residents are incomplete.

Exposure pathways associated with **food** are incomplete.

(2) **Surface Soil**: No gardens are present on site. Therefore, exposure pathways associated with **food** are incomplete.

(3) **Surface Water:** The adjacent wetlands and on-site surface waters (drainage features) are not used for recreational purposes (swimmers or boaters) due to restricted access and the conservation easement in the Outlying Areas of the site. Furthermore, maintenance activities (including landscaping) do not occur in these areas. Therefore, direct contact (ingestion or dermal contact) with surface water in the wetlands and on-site surface waters (drainage features) for on-site industrial workers and recreational users is incomplete.

(4) **Subsurface Soil:** Since the day-to-day operations of the on-site industrial worker do not include intrusive activities, direct contact (ingestion or dermal contact) with subsurface soil is not anticipated and is incomplete.

Exposure pathways associated with **food** are incomplete.

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[3] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

   __√__ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

   _____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

   _____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Groundwater Exposure Pathways: Potential exposure for an on-site industrial worker and on-site construction/excavation workers to groundwater is not significant due to the strict adherence to a rigorous system of policies and procedures employed at the Former DuPont Cape Fear Plant to protect against unacceptable exposures. The facility utilizes a permitting process that requires DuPont CRG authorization for any intrusive activities (boring, drilling, excavation, etc.) into the soils or building foundations at the facility. The purpose of the permitting process is to ensure that appropriate measures are taken for personnel protection should the intrusive activity encounter impacted soils or groundwater. The site environmental support personnel provide the requirements on appropriate personal protective equipment (PPE). The administrative control was established in accordance with the site sale agreement between DAK and DuPont.

Surface Soil Exposure Pathways: Areas where surface soil exceeds screening criteria at SWMU 37 are covered by compacted, crushed stone. In addition, average concentrations at the unit are less than site-specific background concentrations. As a result, the exposure to impacted surface soil is not significant.

Surface Water Exposure Pathways: Access to the Outlying Area by trespassers is limited to areas of the Conservation Easement located near the TPA and Ash Landfills. Infrequent trespassing activities (such as hunting) have been observed in this area. It is highly unlikely, but possible that an individual might choose to wade in the wetlands and thus be exposed to COPCs present in surface water in the drainage features. Given the previous considerations, it is concluded that the likelihood for such exposure is extremely low. Further, even if these exposures occurred, they would be infrequent and of such short duration as to be negligible. As a result, potential trespasser exposure to impacted surface water in the Outlying Area is not significant.

Adjacent surface water bodies, such as the Cape Fear River, are the only current "receptors" for shallow groundwater downgradient of the site and, therefore, the surface water bodies are the only exposure point of potential significance associated with off-site shallow groundwater migration. As a result, an evaluation of

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3 If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

groundwater release to the Cape Fear River was performed in order to determine whether or not concentrations of COPCs in site-wide groundwater are likely to result in exceedances of relevant surface water quality criteria. The surface water quality criteria used in the evaluation was based on the lower of the 15A NCAC 2B values for protection of freshwater organisms (chronic) and protection of human health (fish consumption).

The groundwater flux was calculated using conservative assumptions and site specific hydraulic information as detailed in the CA750 Report (DuPont CRG, 2005). As shown in Table 20, groundwater concentrations when modeled to surface water do not exceed surface water screening criteria. Over time while attenuation and degradation of COPCs takes place current concentrations measured in groundwater will diminish further reducing modeled discharge concentrations. As a result, exposure to recreational users of groundwater discharging to the Cape Fear River is not considered significant.

Subsurface Soil Exposure Pathways: An IRM at AOC A removed xylene-impacted surface soils (< 1 ft bgs) above the PRG. However, the presence of aboveground piping limited excavation on the eastern side of the AOC and xylene is present in subsurface soil (> 1 ft bgs) at concentrations above the PRG for industrial soil. Discussions with VoPak personnel (the PX tank and piping owner) working in this area indicate that occasional maintenance work is necessary amongst the piping, and this work at times (maybe once per year) requires limited shallow excavation of soil through the surface layer. However, historically intrusive activity at the pipe rack area has been a rare occurrence (twice since 1996). Nonetheless, in the unlikely event that excavation/utility work does occur at the unit, a site-specific screening level was developed to evaluate the potential for risk to excavation/utility workers from exposure to subsurface soils (>1 ft bgs) during intrusive activities. The screening level was calculated using assumptions detailed in Appendix D of this report and algorithms presented in the USEPA Region IX PRG Table. The assumptions utilized in the calculation are conservative (likely to overestimate actual exposure) but are reasonable for developing a screening level. Maximum detected concentrations in subsurface soil (3,100 mg/kg) at AOC A are below the site-specific screening level of 4,120 mg/kg.

The permitting process described in Section 7.1 for intrusive activities would also preclude access to impacted soils without protective measures, such as PPE, to prevent exposures at AOC A as well as other units where COPCs have been identified in subsurface soil. For instance, in the AOC A area an excavation permit is required for any intrusive activity greater than 1 ft bgs or within 5 feet of a suspected underground utility at any depth.

Due to the strict adherence to the intrusive activity permitting process that is required at the Former DuPont Cape Fear Plant in combination with concentrations below site-specific screening levels, potential on-site construction/excavation worker exposures to impacted subsurface soil are not considered significant.

4

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 5

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) – continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 6

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

__√__ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under control" at the **Former DuPont Cape Fear Plant**, EPA ID # **047369046**, located at **State Road 1426, Leland, North Carolina**, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ NO - "Current Human Exposures" are NOT "Under Control."

_____ IN - More information is needed to make a determination.

Completed by (signature) Kevin P. Garon Date 4/29/05

(print) Kevin P. Garon

(title) Project Director

Supervisor (signature) Stephen H. Shoemaker Date 4/28/05

(print) Stephen H. Shoemaker

(title) Business Team Manager

(EPA Region or State) DuPont

Locations where References may be found:

North Carolina Hazardous Waste Section
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Contact telephone and e-mail numbers

(name) Larry Stanley
(phone #) (919) 508-8562
(e-mail) Larry.Stanley@ncmail.net

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: DuPont Cape Fear Plant
Facility Address: State Road 1426 Leland, North Carolina
Facility EPA ID #: NCD 047369046

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   _√_ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 2

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__√__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Data Set for EI Evaluation

Site data evaluated for this step included groundwater samples collected from between April 2002 and October 2004 at 48 locations (Figure 1). Groundwater sampling was conducted as part of the Phase III RFI and semi-annual monitoring for the Solid Waste Permit.

Screening Levels Used to Evaluate Site Data

Shallow groundwater is not used for drinking water on or near the site, therefore there are no appropriate risk-based levels for screening. However, constituents detected in groundwater were compared to the North Carolina Groundwater Quality Standard (NC2L), NC Interim Maximum Allowable Concentration (IMAC) or USEPA Region IX Preliminary Remediation Goals (PRGs) for Tap Water, where NC2Ls or IMACs were unavailable.

When a screening value was not available from either source, the screening value from a structurally similar chemical was utilized. For instance, diphenyl ether does not have a NC 2L standard. Per correspondence with the North Carolina Hazardous Waste Section, the USEPA Superfund Technical Support Center in Cincinnati recommended the use of methoxychlor as a surrogate compound for diphenyl ether in groundwater.

Constituents of Potential Concern in Groundwater: Table 1 details the site-wide evaluation. For the purpose of the evaluation, groundwater was evaluated by geographical area (manufacture, support and outlying areas) (Figure 4). Monitoring well locations are detailed in Figure 2.

- ❑ Active Manufacturing Area - There are three specific areas where groundwater has been impacted in the active manufacturing area of the plant: SWMU 1B, SWMU 37, and AOC FMA. COPCs in the area include: 1,4-dioxane, cis-1,2-dichlorocthylene, diphenyl ether, biphenyl, naphthalene and vinyl chloride.
- ❑ Plant Support Area - There are three specific areas where groundwater has been impacted in the support area of the plant: SWMUs 5 and 6, 57, and 58, and AOCs B and C. COPCs in the area include: 1,4-dioxane, benzene, diethylene glycol, ethylene glycol, arsenic and lead.
- ❑ Outlying Area - There are three specific areas where groundwater has been impacted in the outlying (former landfill) area of the plant: SWMUs 53, 55, and 59. COPCs in the area include: benzene, bis(2-ethylhexyl)phthalate, chloroform, cis-1,2-dichlorocthylene, tetrachloroethylene, triethylene glycol, trichloroethene, vinyl chloride, xylenes, arsenic, selenium and thallium.

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 3

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

__√__ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) – skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):
The groundwater flow direction is to the east and north towards the Cape Fear River. The Cape Fear River is the hydraulic boundary for the unconfined aquifer beneath the site. Constituent concentrations have remained stable or decreased at the Active Manufacturing and Plant Support Area as supported by maps and trend charts presented in the Phase II and Phase III RFI Reports. Constituent concentrations in the Outlying Area are localized and have not migrated to downgradient locations (DuPont CRG, 2005). There are no vertical preferential pathways in the shallow aquifer based on the results of the Phase II RFI lithologic investigation. There is a laterally consistent confining unit (the Peedee Confining Unit) that exists below the shallow aquifer at the site.

References:

DuPont CRG, 2005. *Revised Phase III RCRA Facility Investigation Report.* Prepared for Former DuPont Cape Fear Plant, Leland, North Carolina. August 24, revised February 28, 2005.

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 4

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

__√__ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):
The water table is highest under the manufacturing area and slopes downward towards the Cape Fear River, both to the north and east. There are local variations in the groundwater flow direction at the site. For example, in the central portion of the site (TPA production area) groundwater is flowing to the northwest. In the southwestern portion of the site (in the vicinity of monitoring well MW-3A), groundwater is flowing to the south (Figure 2). These local variations in the groundwater flow direction at the site appear to be related to nearby surface water drainage features (i.e., creeks, outfalls). Overall, the groundwater gradient is generally very low in the central manufacturing plant area and increases as groundwater approaches the wetlands area adjacent to the river.

The results of a tidal study confirmed that the surficial aquifer is in communication with the river and is impacted by the tides. However, tidal influence is minor and would not impact flow directions and gradients in the study area. In general, groundwater flows toward the Cape Fear River and eventually discharges into the river (DuPont CRG, 2001).

The Cape Fear River and on-site unnamed tributaries to the Cape Fear River are designated as Class C waters by the state of North Carolina. As Class C waters, water from the creeks and river are used for aquatic life propagation and maintenance, wildlife, secondary recreation and agriculture. They are not used for primary recreation or as a drinking water supply source.

References:

DuPont CRG, 2001. *Phase II RCRA Facility Investigation Report.* Prepared for Former DuPont Cape Fear Plant, Leland, North Carolina. May 14.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 5

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

__√__ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):
A multi-tiered risk-based screening approach was used for this evaluation. Maximum detected concentrations in 20 perimeter monitoring well locations along the Plant Support and Outlying Areas (MW-2, MW-5, MW-7 - MW-9, MW-11, MW-12, MW-13A, MW-15 – MW-20, MW-23, MW-24, MW-27, MW-44 – MW-46 and MW-50) were first compared to appropriate groundwater criteria (i.e., NC 2L). Constituents whose maximum detected concentration exceeded the screening criteria were then compared to the NC 2L standards with an applied conservative dilution factor of 10 to account for groundwater and surface water interaction. The use of a conservative DAF is consistent with current USEPA RCRA Environmental Indicator guidance and the 1996 Advanced Notice of Proposed Rule Making (ANPRM) regarding establishing point of compliance for surface water discharges.

Those COPCs whose maximum detected concentration exceeded 10 times the screening criteria, were retained for evaluation in Step Six. The results of these two screening steps indicate that one inorganic COPC (arsenic) and eight organic COPCs (diphenyl ether, benzene, bis(2-ethylhexyl)phthalate, chloroform, cis-1,2-dichloroethene, tetrachloroethylene, trichloroethene and vinyl chloride) were in excess of 10 times the screening criteria (Table 2).

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 6

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be **"currently acceptable"** (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

___√___ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be **"currently acceptable"**) - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):
Step six of the EI process addresses the acceptability of discharge of contaminated groundwater to surface waters. For this step, only constituents, whose maximum detected concentration was in exceedance of 10 times the NC 2L, as identified in Step Five, were retained for the evaluation.

An evaluation of groundwater release to the Cape Fear River was performed in order to determine whether or not concentrations of COPCs in perimeter groundwater are likely to result in exceedances of relevant surface water quality criteria. The surface water quality criteria used in the evaluation was based on the lower of the 15A NCAC 2B values for protection of freshwater organisms (chronic) and protection of human health (fish consumption). The groundwater flux was calculated using the following conservative assumptions and site-specific hydraulic information.

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.
[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

- Groundwater flux was calculated using a simple mass balance equation as adapted from USEPA's Exposure Assessment Methods Handbook (EAMH) (USEPA, 1989) and USEPA's NPDES Permit Writer's Manual (USEPA, 1996);
- Maximum detected concentrations observed in 20 perimeter monitoring wells sampled between April 2002 and October 2004;
- Site-specific hydraulic gradient and conductivity values calculated from Phase II and Phase III RFI data;
- Depending on the plume, conservative values for the area of discharge were determined by multiplying the average saturated thickness of the surficial aquifer, 20 feet, by the following associated river reach: chlorinated VOC plume between SWMUs 55 and 59 (6,200 feet) and all other plumes, such as diphenyl ether, (14,700 feet);
- The Cape Fear River flow was estimated using the 7-day, 10-year flow rate (7Q10) from the DuPont Plant's NPDES Permit, which is protective of both human and ecological receptors. More than 99% of the time, normal flow in the Cape Fear River is greater than the 7Q10 flow used in this evaluation. Therefore, under most flow conditions, mixing will be greater and concentrations in the river will be lower than those estimated; and
- A mixing fraction for groundwater interaction with surface water of 0.5. This fraction was used because it is considered to be appropriate for evaluating groundwater release that occurs through a porous medium over a large portion of the riverbank and bottom.

Table 3 details the calculation. As shown in the table, groundwater concentrations when modeled to surface water do not exceed surface water screening criteria. Over time while attenuation and degradation of COPCs takes place current concentrations measured in groundwater will diminish further reducing modeled discharge concentrations.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 7

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

__√__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Future monitoring activities are planned as part of the Final Remedy and will be conducted in general accordance with a Groundwater Monitoring Plan to be submitted once remedy selection is complete.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 8

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

√ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the **Former DuPont Cape Fear Plant**, EPA ID # **047369046**, located at **State Road 1426, Leland, North Carolina**. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN - More information is needed to make a determination.

Completed by (signature) Kevin P. Garon Date 4/28/05

(print) Kevin P. Garon

(title) Project Director

Supervisor (signature) Steph H. Shoemaker Date 4/28/05

(print) Stephen H. Shoemaker

(title) Business Team Manager

(EPA Region or State) DuPont

Locations where References may be found:

North Carolina Hazardous Waste Section
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Contact telephone and e-mail numbers

(name) Larry Stanley
(phone #) (919) 508-8562
(e-mail) Larry.Stanley@ncmail.net

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

July 21, 2005

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kevin P. Garon
Project Manager
Corporate Remediation Group
6324 Fairview Road
Charlotte, NC 28210

Re: Revised Phase III RCRA Facility Investigation Report, and
"Responses to Comments"
DAK/DuPont-Cape Fear Facility
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Garon:

The NC Hazardous Waste Section (HWS) has reviewed Dupont-CRG's revised Phase III RFI report and their responses to the HWS's comments. In Section 9.1 of the Phase III report, DuPont-CRG lists recommendations for future corrective action activities. Taken together, the recommendations, including one to prepare a Corrective Measures Study (CMS), outline a path forward. The HWS believes, however, the current site conceptual model is not adequate to support the development of a CMS work plan. Data gaps that, in the opinion of the HWS, should be filled before a CMS work plan can be developed are listed below. These data gaps are in addition to those listed in Section 9.1 of the Phase III RFI report.

Chlorinated compounds have been detected in the groundwater at several widely separated units. Prior to completion of Phase III of the RFI, these compounds were identified at two units and were characterized as exhibiting low concentrations in groundwater. Based on the historical use of chlorinated compounds at the facility, these occurrences were attributed to the disposal of laboratory wastes. During Phase III investigations, chlorinated compounds were detected in groundwater at concentrations exceeding NC 2L Groundwater Standards at monitoring wells MW-49, MW-50, and in-situ groundwater sample FM-08.

The source of the chlorinated compounds detected in monitoring well MW-50 has been identified as a closed unit, the Inert Debris Pile, in the SWMU 59-Demolition Landfill Area. A soil gas survey conducted at the unit located the source but did little to characterize it. The HWS recommends additional investigations to establish the nature of this source (i.e., leaking containers, trenches beneath the debris pile, or direct disposal of liquids in the debris pile). Additionally, DuPont-CRG and the HWS have previously discussed the need for a deep monitoring well at Cape Fear site. Prior to Phase III of the RFI, the hydrogeologic properties of a laterally extensive confining layer and the apparent lack of significant releases of chlorinated compounds did not seem to justify such an effort. In light of the findings presented for MW-50 and the Inert Debris Pile, the HWS believes this concept should be re-visited.

A release at SWMU 1b-Waste Water Collection System is thought to be the source for the constituents detected in groundwater samples collected at monitoring well MW-49. However, the constituents detected in soil samples collected at the SWMU do not match the constituents (or their potential breakdown products) contained in samples collected from MW-49. This is particularly true for the chlorinated compounds. The HWS recommends that DuPont attempt to locate an additional source of groundwater contamination up-gradient from MW-49. (During a site visit in December 2004, HWS personnel noticed what appeared to be an old maintenance shop located close to MW-49. Direct indications of a release, however, were not observed.)

In Section 9.1 of the Phase III RFI report, DuPont proposed additional investigations at AOC A-Paraxylene Release. DuPont's proposal consists of the installation of one or two additional monitoring wells at this unit. In correspondence dated 4/27/05, the HWS recommended that DuPont collect additional soil samples from beneath the pipe rack at AOC A. The purpose of the soil samples is to confirm that the maximum xylene concentration in the impacted soil is less than DuPont's calculated risk-based exposure level for a construction/excavation worker.

Finally, in their "Responses to Comments" (dated 10/18/04), DuPont-CRG expressed the opinion that the ability to map groundwater plumes at the DAK site is limited. This is a function of the overall size of the impacted area, the variety of constituents present in the groundwater at concentrations exceeding standards, and the amount of subsurface data. In general, the HWS believes plumes should be mapped before a facility begins their Corrective Measures Study. This opinion results in large part from the level of clean up required by North Carolina. The HWS would like to discuss the issue at length with DuPont-CRG. Our discussions may be more productive if scheduled after the final DuPont/DENR Completion Meeting.

If your office has questions concerning this correspondence, please call me at (919) 508-8562.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
NC Hazardous Waste Section

cc: Jon Johnston, US EPA, Region 4
Bobby Nelms
Larry Stanley

rc: Bud McCarty
Bob Glaser
Karim Pathan
Larry Stanley

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

June 27, 2005

Mr. Jon D. Johnston, Chief
RCRA Programs Branch
Waste Management Division
US EPA, Region 4
61 Forsyth Street SW
Atlanta, Georgia 30303

Attention: Mr. John Johnston

Re; Revised Part B Renewal Application
DAK/ Dupont, Cape Fear
EPA ID # NCD 047 369 046

Dear Mr. Johnston:

Enclosed is the revised Part B renewal application in response to DAK/ DuPont's First Notice of Deficiency, dated March 30, 2005.

We are providing this for your records in accordance with our Memorandum of Agreement. If you have any questions, please contact me at (919) 508-8558.

Sincerely,

K. Pathan

Karim Pathan, Project Manager
Facilities Management Branch
Hazardous Waste Section

Enclosure

cc: Bobby Nelms

rc: Larry Stanley
Karim Pathan

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-508-8400 \ FAX 919-715-3605 \ Internet http://wastenotnc.org

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

June 27, 2005

Mr. Marty K. Lawing
Brunswick County Manager
Building E
45 Courthouse Drive N.E.
Bolivia, North Carolina 28422

Re: Receipt of the Hazardous Waste Management Permit Renewal Application Revised Part B Renewal Application
DAK/ DuPont, Cape Fear
EPA ID # 047 369 046

Dear Mr. Lawing:

We have received a revised Hazardous Waste Management Permit Renewal Application from DAK/ DuPont in Leland. The Department is required by GS 130A 294(f) to submit a copy of the application to the county government in the location of the hazardous waste management facility.

If you have any questions, please contact me at (919) 508-8558.

Sincerely,

K. Pathan

Karim Pathan, Project Manager
Facility Management Branch
Hazardous Waste Section

Enclosure

cc: Bobby Nelms

rc: Larry Stanley
Karim Pathan

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-508-8400 \ FAX 919-715-3605 \ Internet http://wastenotnc.org

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

June 27, 2005

MEMORANDUM

TO: Alan Klimek, Director
Division of Water Quality

ATTN: Ted Rush, Aquifer Protection Section Chief
Division of Water Quality

FROM: Karim Pathan
Facility Management Branch
Hazardous Waste Section

RE: Revised Part B Renewal Application
DAK/ DuPont, Cape Fear
EPA ID # NCD 047 369 046

Enclosed is the revised Part B renewal application in response to DAK/ DuPont's Notice of Deficiency, dated March 30, 2005. This facility has confirmed groundwater contamination and is currently assessing the extent of contamination with oversite from the Hazardous Waste Section.

If you wish to comment on the pertinent sections of this application then please provide your comments by August 1, 2005. If you have any questions, please contact me at (919) 508-8558.

Enclosure

cc: Bobby Nelms

rc: Larry Stanley
Karim Pathan

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-508-8400 \ FAX 919-715-3605 \ Internet http://wastenotnc.org

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | **Division of Waste Management** | Michael F. Easley, Governor
William G. Ross Jr., Secretary

April 27, 2005

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kevin P. Garon
Project Manager
Corporate Remediation Group
DuPont Engineering
6324 Fairview Road
Charlotte, NC 28210

Re: "Revised AOC A Interim Remedial Measures (IRM) Update"
DAK Monomers/DuPont-Cape Fear Facility
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Garon:

The NC Hazardous Waste Section (HWS) has reviewed "Revised AOC A Interim Remedial Measures (IRM) Update" and concluded the document constitutes an acceptable progress report on IRM activities at AOC A-Paraxylene Releases. As was discussed during our recent telephone conversations, DuPont-CRG plans to submit a final report once treatment of excavated soils has been completed.

As was also discussed during our phone calls, the HWS is concerned about the analytical results at sample location E-8. The HWS would like confirmation that the xylene concentration reported for this sample is likely to be the maximum encountered in soils under the pipe rack. It should be noted, however, that while the xylene concentration reported for sample E-8 is less than DuPont's calculated construction/excavation worker value, it may not be protective of groundwater. The NC soil-to-groundwater leaching value (SSL) for total xylene is 4.96 mg/kg.

If your office has questions concerning this correspondence, please call me at (919) 508-8562.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
NC Hazardous Waste Section

cc: Jon Johnston, US EPA, Region 4
Bobby Nelms
Larry Stanley

rc: Bud McCarty
Bob Glaser
Connie Brower
Larry Stanley

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NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | **Division of Waste Management** | Michael F. Easley, Governor
William G. Ross Jr., Secretary

March 30, 2005

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Kevin P. Garon
Consultant
DuPont Corporate Remediation Group
6324 Fairview Road
Charlotte North Carolina 28210

Re: Part B Application - Hazardous Waste Management Permit
First Notice of Deficiency
EPA ID # NCD 047 369 046

Dear Mr. Garon:

An initial review has been performed on your HSWA-only Part B Application. The attached Notice of Deficiency identifies specific deficiencies that must be corrected before the application can be determined complete. Eight (8) copies of an addendum addressing these deficiencies must be submitted by June 3, 2005. Failure to submit these addenda on or before the compliance date can result in enforcement actions or a decision to deny the permit.

If you have any questions or need a clarification of any item on the attached list, please contact me at (919) 733-4996 extension 228 or Larry Stanley at extension 236.

Sincerely,

Karim Pathan, Project Manager
Facility Management Branch
Hazardous Waste Section

Attachment

cc: Jon D. Johnston, US EPA, Region 4
Price Winston, DAK Monomers, LLC
Bobby Nelms

rc: Bud McCarty
Robert Glaser
Larry Stanley
Karim Pathan

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-733-4996 \ FAX 919-715-3605 \ Internet http://wastenotnc.org

DAK Monomers, LLC/DuPont-Cape Fear
Cape Fear Facility
Leland, NC
EPA ID # NCD 047 369 046

First Notice of Deficiency
HSWA-Only Permit Application

Part A Permit Application
RCRA Subtitle C Site Identification Form

1) There are two pages numbered "Page 1 of 3" in the RCRA Subtitle C Identification Form section of the Part A Permit Application. The HWS recommends that DAK/DuPont label the first page as "Page 1a of 3" and the second as "Page 1b of 3."

Part A Permit Application
Hazardous Waste Permit Information Form

2) The Hazardous Waste Permit Information Form section of the Part A has two pages numbered "Page 1 of 6." The HWS suggests that DAK/DuPont label the first page as "Page 1a of 6" and the following page as "Page 1b of 6."

Section B-1
General Description

3) DAK/DuPont should define the phrase "intermittent non-listed hazardous waste."

4) A waste is hazardous by the characteristic of toxicity if the concentrations of specified constituents exceed published standards. As stated in 40 CFR 261.24, the method used to determine the constituent concentrations is the Toxicity Characteristic Leaching Procedure (TCLP). DAK/DuPont should define the term "EP Toxics" and how this method is used to determine whether a waste is hazardous.

Section B-2
Topographic Map

5) The Part B permit application should include a topographic map (or maps) that meets the requirements listed in Section B-2a of the regulatory completeness checklists.

6) The HWS prefers that the maps included with the permit application package are placed in the Part B application. Maps may also be included in the Part A permit application.

Section B-3
Access Control

7) The procedures visitors, DAK employees, contractors, and non-DAK employees must follow to access the site should be discussed. Measures designed to prevent unauthorized entry by trespassers should also be included in this section.

Section B-3
Injection and Withdrawal Wells

8) Whether injection or withdrawal wells are located within 1000 feet of solid waste management units (SWMUs) or areas of concern (AOCs) should also be noted. If injection or withdrawal wells are present now or have operated in the last ten years, they should be discussed in detail (i.e., years of operation, historical withdrawal rates).

Section B-3
Surface Waters

9) According to the Division of Water Quality's classification, the Cape Fear River in the vicinity of the DAK/DuPont facility is a Class C surface water body. This information, along with the definition of Class C surface waters, should be included in this section of the application. Other surface water bodies in or adjacent to the facility should be also be identified and their classifications defined.

Section B-4b
Floodplain Standard

10) DAK/DuPont should list all SWMUs and AOCs located within the 100-year floodplain or provide a map that shows this information.

Section I
Closure/Post-Closure

11) As indicated in the permit application, the hazardous waste storage pad at the Cape Fear plant has been closed. DAK/DuPont should include copies of the approved closure plan, closure certification report, and closure acceptance letter in the permit application. The HWS suggests placing these documents in an appendix.

Section J
Other Federal Laws

12) Information needed for Part J (Other Federal Laws) of the application checklists should be included in the permit application. This part asks the applicant to demonstrate compliance with relevant Federal laws. Examples of such statutes are the Wild and Scenic Rivers Act, National Historic Preservation Act of 1966, Endangered Species Act, Coastal Management Act, and Fish and Wildlife Coordination Act. At a minimum, the applicant should state that these laws do not apply to this facility.

Section L
Information Requirements for Solid Waste Management Units

13) DAK/DuPont should summarize the current information on units (i.e., regulated units, solid waste management units, and areas of concern) that have released to the environment. The investigations that characterized the releases, the hazardous wastes and hazardous constituents identified at each unit (including breakdown products), and the vertical and horizontal distribution of the released wastes and constituents should be included in Section L. The techniques and procedures used to characterize the releases, such as permanent monitoring wells and temporary monitoring wells, should also be mentioned.

14) The RCRA Facility Assessment (RFA) for this facility was completed in 1988. Since that time, additional units have been identified. These "newer" units should be discussed in Section L. Pertinent information for these units would be similar to the data compiled earlier for the RFA. In addition, a copy of the RFA should be included in the permit application. The HWS suggests placing the copy in an appendix to the application.

Section L
Table L-1

15) Several of the units identified in Table L-1 (Statement of Basis) as being in the Corrective Measures Study phase are probably still in the RFI phase. The FMB suggests that SWMUs 37, 58, and 59 and AOCs A, C, and FMA should properly be in the RFI. These units require additional investigation to determine the extent of groundwater contamination, an expanded suite of analytical methods to identify hazardous constituents potentially present in the groundwater, or investigation of other media, such as surface water or indoor air. A combination of these factors is present at a few units.

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

October 19, 2004

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Stephen H. Shoemaker
Corporate Remediation Group
DuPont Engineering
6324 Fairview Road
Charlotte, NC 28210

Re: NOTI for Phase III RCRA Facility Investigation Report
DAK Americas/DuPont Facility
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Shoemaker:

The North Carolina Hazardous Waste Section (HWS) has completed a review of the Phase III RCRA Facility Investigation Report submitted by DuPont's Corporate Remediation Group. Due to several technical questions raised by the review process, the Hazardous Waste Section has determined that it does not constitute an acceptable RFI report. Comments intended to further communication and offer guidance are attached to this letter.

Responses to comments should be submitted to the Hazardous Waste Section within 90 days of the receipt of this letter by the Corporate Remediation Group. If your office has questions concerning this correspondence, please give me a call at (919) 733-2178 extension 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
Hazardous Waste Section

cc: Jon Johnston, US EPA, Region 4
Bobby Nelms
Penny Mahoney, DAK Americas
Larry Stanley

rc: Bud McCarty
Bob Glaser
Larry Stanley

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-733-4996 \ FAX 919-715-3605 \ Internet http://wastenotnc.org

DAK/DuPont-Cape Fear Plant
Leland, North Carolina
EPA ID # NCD 047 369 046

NC Hazardous Waste Section's Comments on
Phase III RCRA Facility Investigation Report

Section 3.6
Investigation Derived Waste

1) DuPont-CRG should approximate the amount of soil generated as investigation derived waste and the amount transported to an off-site landfill for disposal. The information should be included in this section of the report.

Section 3.7
Deviations from Phase III RFI Work Plan and Monitoring Program

2) For the purposes of the EI evaluation, the Hazardous Waste Section (HWS) suggests that DuPont-CRG use the Region 9 PRGs for methoxyclor as a substitute for diphenyl ether standards. The use of methoxyclor standards (i.e., soil and tap water) as a substitute for diphenyl ether standards was suggested by the Superfund Health Risk Technical Support Center in Ohio. (Personal communication from Michele Burgess to Sandra Moore.)

   DuPont-CRG's proposed Interim Maximum Allowable Concentration (IMAC) for diphenyl ether was denied by the NC Division of Water Quality. For the RFI, DuPont-CRG should use the published method quantitation limit for diphenyl ether as the groundwater standard.

Section 4.2.1
QA/QC Sample Blanks

3) As stated in the report, analytical results that are five times the corresponding blank concentration (or ten times the blank concentration for common lab contaminants) can be considered non-detects and withheld from further consideration. However, the lab and facility should try to identify and correct the problem. Once the problem has been corrected, the sample should be re-analyzed. The facility may need to collect the sample again.

Section 5.0
Analytical Data Screening Process

4) The HWS has the following comments concerning Section 5.0 of the Phase III report.
   a) Soil Analytical Data Screening Process: DuPont can develop site specific soil screening values, but these values must be reviewed and approved by the HWS.

   b) Groundwater Data Screening Process: As part of the groundwater screening process depicted in Figure 6, the HWS will use IMAC's developed by the NC Groundwater Section before applying a Region IX tap water screening value.

   c) Surface Water Screening Process: The HWS will apply the NC 2B Surface Water Standards and provisional standards to the screening process before using the EPA Region 4 Freshwater Chronic and Acute Ecological Values. The NC 2B Surface Water Standards and provisional surface water standards are enforceable in North Carolina.

Section 6.1.1
Hydrogeology

5) Coquina is usually thought of as a rock exhibiting high hydraulic conductivity. Based on field observations, DuPont-CRG previously described this rock as being well cemented and as a result, possessing low hydraulic conductivity. This information should be included in the text of Section 6.1.1.

Section 6.2.1
Background Sampling-Soil Sampling

6) The background concentration for a constituent should be the average concentration for that constituent as reported for background samples. As a rule of thumb, two times the average of the background concentrations would indicate a possible release to the environment. Statistical methods commonly used to calculate background concentrations are also recognized by the HWS. DuPont-CRG should compare their background concentrations with those calculated by taking the average of constituent concentrations. The technique used by DuPont-CRG can allow one high detection to become the background screening value.

Section 6.2.2.2
Former Incinerator-Analytical Results

7) According to the text of this section, groundwater samples collected from monitoring well MW-51 have not been analyzed for constituents other than naphthalene. In-situ groundwater

sample 37-8 was analyzed for glycols and a broad spectrum of volatile, semi-volatile, and inorganic constituents. When compared to other sampling techniques, monitoring wells are thought to eliminate some variables present in the subsurface and yield more representative samples. The HWS suggests that groundwater samples collected from monitoring well MW-51 be analyzed for the same constituents as in-situ sample 37-8.

Section 6.2.2.4
Fibers Manufacturing Area-Analytical Results

8) The applicable screening criteria should be specified. In other words, the standard (i.e., background, Region 9 PRG, etc.) used to screen out, or screen in, each constituent should be mentioned in the RFI report. This comment also applies to other sections of the Phase III RFI report.

9) Significant concentrations of organic compounds have been detected in groundwater samples collected at in-situ locations FM-7 and FM-8. Diphenyl ether (400 ppb) and naphthalene (170 ppb) were present in the sample collected at FM-7. Similarly, cis-1,2-dichloroethene (950 ppb) and vinyl chloride (150 ppb) were detected in the FM-8 sample. DuPont-CRG's effort to confirm and delineate the groundwater contamination with permanent monitoring wells has not yielded expected results. The HWS suggests that DuPont-CRG review the data collected in the Fibers Manufacturing Area and submit a detailed report. The report would probably include large scale (i.e., detailed) contour maps of the water table surface and stratigraphic cross sections.

Section 6.2.3.4 Paraxylene AST – AOC A
Monitoring Well Groundwater Sampling

10) A report titled Groundwater Delineation Report-Paraxylene Release Investigation (1997) indicated that groundwater downgradient from AOC A has been impacted by releases of xylene. This information should be included in the Phase III RFI report, especially since xylene has not been detected in monitoring well MW-29.

11) The groundwater report cited in Comment # 10 indicates that groundwater has been impacted, and plumes originating at AOC A are not monitored by the current monitoring well system. While the current system can probably determine if the plumes are leaving the property, the xylene plumes are not sampled by the existing monitoring well network. The HWS suggests that DuPont-CRG install monitoring wells capable of monitoring these two plumes.

Section 6.2.3.6 Former BACA Storage Area - AOC C
Surface Water Sample

12) As stated in Comment # 4(c), the NC 2B surface water quality standards and provisional standards developed by the Division of Water Quality should be used as a screening criteria before the EPA Region 4 Freshwater Chronic and Acute Ecological Values are used. The HWS recommends using the 2B standards and the provisional standards in a guidance document titled NC Hazardous Waste Section Guidelines for Establishing Remediation Goals at Hazardous Waste Sites. This document can be viewed at the NC Hazardous Waste Section's web site.

Section 6.2.4.1 TPA Landfill – SWMU 53
Analytical Results

13) DuPont-CRG should mention in the text of the Phase III RFI report that SWMU 53–TPA Landfill is permitted by the Solid Waste Section. Consequently, DuPont is required to monitor the groundwater downgradient of this unit for volatile organic compounds, semivolatile organic compounds, total metals, and nine miscellaneous constituents and parameters. The metals are the eight metals listed in Table 1 of 40 CFR 261.24 and arsenic. This comment also applies to Section 6.2.4.2 (SWMU 54-Ash Landfill) and Section 6.2.4.5 (SWMU 59-Demolition Landfill).

Section 7.5.2 Plant Support Area
On-Site Industrial Worker Exposure Pathways

14) The HWS believes that DuPont-CRG should not state that the on-site industrial worker exposure pathway is insignificant until the surface soil at AOC A has been excavated. Until that time, this exposure pathway must be considered significant. Because of remoteness, the risk of exposure may be low, however.

Section 9.0
Conclusions

15) DuPont-CRG notes in the ninth bullet of Section 9.0 that there are several "interior" releases that have impacted groundwater. DuPont-CRG asserts that none of the resulting plumes reach the perimeter of the facility. The HWS recommends that DuPont-CRG map these plumes. The HWS also suggests that DuPont-CRG discuss the site-specific contaminant transport parameters; such as advection, dispersion, and retardation; that are likely to influence plume geometry.

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

June 23, 2004

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Stephen H. Shoemaker
Corporate Remediation Group
DuPont Engineering
6324 Fairview Road
Charlotte, NC 28210

Re: Revised AOC A IRM Work Plan
DAK Americas/DuPont-Cape Fear Plant
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Shoemaker:

The NC Hazardous Waste Section (HWS) has reviewed Revised AOC A Interim Remedial Measures (IRM) Work Plan and concluded the document constitutes an adequate work plan. The plan is approved on condition that DuPont-CRG submit a waste management plan, QAAP, and health and safety plan by the July 9 date mentioned in their response to comments. DuPont-CRG may follow the schedule shown on Figure 4 of the work plan. However, the HWS hopes Task 1 through 9 will be completed in time for the results to be included in the Phase III RFI report. According to our records, the HWS should receive the Phase III RFI report in August 2004.

If your office has questions concerning this correspondence, please call me at (919) 733-2178 extension 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
NC Hazardous Waste Section

cc: Jon Johnston, US EPA, Region 4
Bobby Nelms
Larry Stanley

rc: Bud McCarty
Bob Glaser
Karim Pathan
Larry Stanley

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-733-4996 \ FAX 919-715-3605 \ Internet http://wastenotnc.org

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NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | **Division of Waste Management** | Michael F. Easley, Governor
William G. Ross Jr., Secretary

June 4, 2004

Mr. Stephen H. Shoemaker
Corporate Remediation Group
DuPont Engineering
6324 Fairview Road
Charlotte, NC 28210

Re: Piezometer Installations--Former DuPont Cape Fear Plant
DAK Americas/DuPont-Cape Fear Plant
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Shoemaker:

After reviewing the revised Piezometer Installation--Former DuPont Cape Fear Plant, the Hazardous Waste Section (HWS) concludes the document is an adequate work plan. The HWS understands the results of the piezometer installation and subsequent groundwater sampling will be reported in DuPont's Phase III RFI report. According to the schedule that appears in Phase III RCRA Facility Investigation Monitoring Program (5/13/03), the Phase III report will be submitted to the HWS in August 2004.

If your office has questions concerning this correspondence, please call me at (919) 733-2178 extension 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
NC Hazardous Waste Section

cc: Jon Johnston, US EPA, Region 4
Bobby Nelms
Larry Stanley

rc: Bud McCarty
Bob Glaser
Karim Pathan
Larry Stanley

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NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

May 6, 2004

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Stephen H. Shoemaker
Corporate Remediation Group
DuPont Engineering
6324 Fairview Road
Charlotte, NC 28210

Re: NOD for AOC A Interim Remedial Measures (IRM) Work Plan
DAK Americas/DuPont-Cape Fear Plant
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Shoemaker:

The North Carolina Hazardous Waste Section (HWS) has completed a review of AOC A Interim Remedial Measures (IRM) Work Plan. Due to several technical questions raised by the review process, the Hazardous Waste Section has determined that the work plan is not acceptable. Comments intended to offer guidance and aid with revisions to the work plan are listed below.

Section 3.1
Excavation

1) DuPont-CRG should discuss the procedures that will be followed to decontaminate excavation equipment, transportation equipment, and sample collection tools. The decontamination tools and materials used along with the frequency of decontamination should be included in the discussion.

Section 3.2
Verification Sampling

2) DuPont-CRG should indicate in the work plan the approximate number of confirmation samples to be collected, the equipment used to collect the samples, and the analytical methods that will be used to analyze the confirmation samples. DuPont-CRG must use analytical methods listed in EPA publication SW-846: Test Methods for Evaluating Solid Waste or equivalent methods.

3) DuPont-CRG should discuss the management of the IDW (Investigation Derived Waste) that will be generated when tasks proposed in the work plan are implemented.

4) The HWS recommends that DuPont-CRG include a QA/QC discussion in the work plan. The QA/QC discussion should contain pertinent information on duplicates, matrix spikes, trip blanks, field blanks, equipment blanks, method blanks, quanitation limits, holding times, chain of custody procedures, and other factors which help insure the quality of the analytical data.

Section 3.4
Waste Management

5) DuPont-CRG should discuss the feedstock material in more detail. More specifically, information on the potential chemical activity of the material and persistence in the soil should be included in the work plan.

Section 4.0
Schedule

6) The HWS recommends that DuPont-CRG submit a preliminary report upon completion of Step 8 (Re-Grade AOC A Area). A letter report will be adequate at this stage of the project.

Additional Comment

7) DuPont-CRG will probably prepare an internal health and safety plan for this project. The HWS requests that DuPont-CRG submit a copy of the health and safety plan with the revised work plan. The health and safety plan can be included as an appendix to the work plan.

DuPont-CRG should submit three copies of the revised work plan within thirty (30) days of the receipt of this letter. If your office has questions concerning this correspondence, please call me at (919) 733-2178 extension 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
NC Hazardous Waste Section

cc: Jon Johnston, US EPA, Region 4
Bobby Nelms
Larry Stanley

rc: Bud McCarty
Bob Glaser
Karim Pathan
Larry Stanley

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North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

MEMORANDUM

To: Bobby Nelms
Waste Management Specialist
Compliance Branch-Wilmington Regional Office

From: Larry Stanley
Hydrogeologist
Facility Management Branch

Karim Pathan
Environmental Engineer
Facility Management Branch

Date: January 30, 2004

Re: Closure Report and Closure Certifications
DAK Americas/DuPont-Cape Fear Facility
Wilmington, NC
EPA ID # NCD 047 369 046

A report titled Hazardous Waste Pad Closure Report was submitted to the Facility Management Branch (FMB) by DuPont's Corporate Remediation Group. The report, which includes closure certifications, documents the closure of a container storage unit at the DAK Americas/DuPont-Cape Fear facility. The unit was permitted to store liquid and solid hazardous waste.

Before the FMB can accept the closure report and closure certifications, a closure inspection of the unit must be performed by a Waste Management Specialist. If needed, a copy of the closure report (with closure certifications) can be provided. These documents should also be in the facility's records. If you have any questions concerning this memorandum, please contact me at (919) 733-2178 extension 236.

cc: Mike Williford
Larry Stanley

rc: Bud McCarty
Bob Glaser
Karim Pathan
Larry Stanley

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone 919-733-4996 \ FAX 919-715-3605 \ Internet http://wastenotnc.org

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EPA ID Number: NCD047369046

Facility Name: E. I. DuPont City: Leland

EVALUATION DATA New: ✓ Change: ___ Delete: ___

	Mo.	Day	Yr.	Type:
Date:	11	23	04	OTH
Date:	__	__	__	___

Inspector ID #: 036 Reason: 06

Evaluation Comments: Closure Inspection

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one)

- a SNC (SNY evaluation) _____ Docket # _____

or

- no longer a SNC (SNN eval.) _____

YES / NO CSE ONLY

Waste Involved	Volume	Exposure Media (a, gw, sw, s)	Distance to Residences	Number of People involved	Distance to On-site wells	Distance to Off-site wells

#____ Type:___ ___ ___ Date Determined ___ ___/___ ___/___ ___ Class: __

Priority: ___ Branch:___ ___ Person: ___ ___

Return to Compliance ___ ___/___ ___/___ ___ (*Scheduled*) ___ ___/___ ___/___ ___ (*Actual*)

Reg. Type: ___ ___ Reg. Description:_____

Comment: _____

#____ Type:___ ___ ___ Date Determined:___ ___/___ ___/___ ___ Class: ___

Priority:___ Branch:___ ___ Person:___ ___

Return to Compliance: ___/___/___ (*Scheduled*) ___/___/___ (*Actual*)

Reg. Type: ___ ___ Reg. Description:_____

Comment:_____

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

RCRA REPORT
TREATMENT, STORAGE, AND DISPOSAL FACILITY

1. **FACILITY INFORMATION:**
   Facility Name: EI DuPont
   EPA ID Number: NCD 047 369 046
   Facility Location: 3500 Daniels Rd. Leland, NC 28451
   Telephone Number: (910) 371-4274

2. **PURPOSE OF VISIT:** CEI CSE CAV

3. **FACILITY CONTACT:** Winston Price

4. **SURVEY PARTICIPANTS:** Winston Price - DAK Americas
   Robert Nelms - NCDENR

5. **DATE OF VISIT:** 23 January 2004 **PREVIOUS VISIT:** _____

6. **FACILITY DESCRIPTION:**
   Permitted hazardous waste storage pad.

7. **HAZARDOUS WASTE STREAMS INCLUDE:**
   N/A

8. **AREAS OF REVIEW, INSPECTION, and/or DEFICIENCY:**

PERMIT CONDITIONS - Documents to be Maintained at the Facility

N/A Waste Analysis Plan in accordance with 40 CFR 264.13

N/A Inspection Schedules developed in accordance with 264.15(b)

N/A Personnel Training Documents and Records in accordance with 40 CFR 264.16(d)

N/A Contingency Plan in accordance with 40 CFR 264.50 through 264.56

N/A Operating Record required by 40 CFR 264.73

✓ Closure Plan submitted in accordance with 40 CFR 264.112(a)

N/A Cost Estimate for Facility Closure in accordance with 40 CFR 264.142(d)

OTHER RULES:

Emergency Preparedness (Subpart C, 264.30 - 264.37)

Biennial Report (264.75) must be submitted by March 1 of each even numbered year, reporting activities of the previous year

Survey Plat in accordance with 264.116

Post-closure care - Cost Estimate & Financial Assurance in acc. with 264.144 & .145 (SMUs)

Use & Management of Containers (Subpart I, 264.170 - 264.179)

SPECIAL CONDITIONS:

Use & Management of Tanks (Subpart J, 264.190 - 264.200)

Incinerators (Subpart O, 264.340)

Corrective Action for Solid Waste Management Units (Subpart S, 264.552)

Drip Pads (Subpart W, 264.570)

9. **WASTE MINIMIZATION PLAN:** (management support, periodic assessment, cost allocation)
N/A

10. **SUMMARY OF DEFICIENCIES (cited by Rule):**

This visit was made as a closure inspection of this facility. No violations noted. Last shipment of waste 6/7/01 see attached manifest.

Robert L. Nelms DATE: 1/23/04
Robert Nelms
Waste Management Specialist, NCDENR

Mailed to:
Winston Price DATE: 1/29/04
Facility Representative

Fax Cover Sheet

DAK Americas, LLC
3500 Daniels Road, NE
Leland, NC 28451
Fax: 910-371-5147

To: Robert (Bobby) Nelms
Company: NC DENR - Hazardous Waste section
Location: 127 Cardinal Drive Ext,
Phone No: 910-395-3900 ext 350
Fax No: 910-350-2404

From:

Penny Mahoney (371-5232) ___
Kathy Keller (371-4853) ___
Phyllis Simmons (371-4863)___
Winston Price (371-4830) ✓
Walter Kelly (371-4020)___
Ricky Stroupe (371-4452)___
Ron Worthington (371-4498)___
Robert Hall (371-4077)___
Larry Young (371-4397)___

Comments:

Please see the attached copy of the last hazardous waste manifest generated at the former hazardous waste pad on 6-7-01. If you need any more information please contact me.

Number of Pages Including Cover Sheet 2

3-031-02

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

Form Approved. OMB No. 2050-0039 Expires 9-30-9

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NCD047369046 | Manifest Document No. 25865 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
E I DUPONT
3500 DANIELS RD ATTN ULYSSES SLADE
LELAND NC 28451
4. Generator's Phone (910) 371-4274

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: ~~SAFETY KLEEN SYSTEMS, INC~~ | 6. US EPA ID Number: SCR000075150

C. State Transporter's ID

D. Transporter's Phone: 910 865 5081

7. Transporter 2 Company Name: SAFETY-KLEEN (TG), INC. | 8. US EPA ID Number: SCR000074591

E. State Transporter's ID

F. Transporter's Phone: 803 356-4061

9. Designated Facility Name and Site Address
000658
SAFETY-KLEEN SYSTEMS, INC.
3700 LAGRANGE ROAD
SMITHFIELD KY 40068
10. US EPA ID Number: KYD053348108

G. State Facility's ID

H. Facility's Phone: 502 845-2453

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	WASTE XYLENES 3 UN1307 PG III (ERG#130)	X	8	DM	2400	P	U239 D001
b.	RQ WASTE PAINT RELATED MATERIALS 3 UN1263 PG II (D001) (ERG#128)	X	38	DM	11400	P	F003 F005
c.							
d.							

J. Additional Descriptions for Materials Listed Above
1B) D001 D007 D008

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
MFST R/T#100788655 0002-5947-00
EMERGENCY RESP 910-371-4000(24 HR). IF UNDELIVERABLE RETURN TO GENERATOR.
SK CORP AUTHORIZED TO RETAIN LICENSED SUBSEQUENT CARRIERS AS NECESSARY.
SKDOT# A: 55099 B: 163109 C: D:

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

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

GENERATOR — Printed/Typed Name: WALTER L. KELLY | Signature: Walter L. Kelly | Date: Month 06 Day 07 Year 01

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: Dusty B. Hebert | Signature: Dusty B Hebert | Date: Month 06 Day 07 Year 01

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: Tyron A. Butler Sr | Signature: Tyron A Butler Sr | Date: Month 06 Day 18 Year 01

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name: Rebecca Washburn | Signature: Rebecca Washburn | Month 06 Day 19 Year 01

EPA Form 8700-22 (Rev. 9-88) previous editions obsolete

SAFETY-KLEEN CORP.

A)2091922/2117336 B)2091 ~~SPECIAL~~ ORIGINAL RETURN TO GENERATOR

90290 (Rev 11/98) 6

Public reporting burden for this collection of information is estimated to average: 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment, storage and disposal facilities. This includes time for reviewing instructions, gathering data, and completing and reviewing the form. Send comments regarding the burden estimate, including suggestions for reducing this burden, to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

NCDENR
North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

February 13, 2004

Mr. Winston Price
Environmental Leader
DAK Monomers, LLC
P.O. Box 2042
Wilmington, North Carolina 28402

Re: Storage Pad Closure Certification
Cape Fear Facility
EPA ID # NCD 047 369 046

Dear Mr. Price:

The Hazardous Waste Section (HWS) received the certification from the independent professional engineer and the owner/operator on November 24, 2003 that closure activities for the Storage Pad were completed according to the approved closure plan. Additionally, Mr. Robert Nelms of the HWS conducted a closure inspection on January 23, 2004 and found the facility to be in compliance with the approved closure plan.

Your certification of final closure for the storage pad is accepted. A copy of this letter will be forwarded to our Financial Unit. They will address details concerning financial assurance for closure under a separate letter.

If you have any questions, please contact Karim Pathan at (919) 733-2178 extension 228 or Larry Stanley at extension 236.

Sincerely,

Robert Glaser
Unit Supervisor
Facility Management Branch
Hazardous Waste Section

cc: Narindar Kumar, US EPA, Region 4
Doug Holyfield
Mike Williford
Jenny Lopp
Bobby Nelms, HW Mgmt. Specialist

rc: Bud McCarty
Robert Glaser
Larry Stanley
Karim Pathan

C:\mel\lgs\closure certification acceptance-1.doc

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Director

September 12, 2003

Mr. Stephen H. Shoemaker
Corporate Remediation Group
DuPont Engineering
6324 Fairview Road
Charlotte, NC 28210

Re: Time Extension for Completion of Closure Activities
DAK Americas/DuPont Cape Fear Site
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Shoemaker:

The North Carolina Hazardous Waste Section (HWS) grants DuPont-CRG a time extension to complete closure of the hazardous waste storage pad located at the DAK Americas/DuPont Cape Fear facility. According to our records, closure activities were scheduled for completion by August 20, 2003. With the granting of the requested ninety-day extension, the HWS must receive closure certification documentation by November 18, 2003.

If your office has questions concerning this correspondence, please call me at (919) 733-2178 extension 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
NC Hazardous Waste Section

cc: Narindar Kumar, US EPA, Region 4
Bobby Nelms
Penny Mahoney, DAK Americas
Larry Stanley

rc: Bud McCarty
Bob Glaser
Karim Pathan
Larry Stanley

C:\mel\lgs\dupont-CF-Time-Ext.doc

Region 4 Compliance Data Entry Form — Side A (Rev. 8/97)

Submittal Information	Initial By	Initial Date	Corrected By	Corrected Date
RCRA Comp. Section:		/ /		/ /
Received:		/ /		/ /
Entered/ Returned:		/ /		/ /

FACILITY INFORMATION:

EPA ID Number: WIC|0|0|4|7|3|6|9|0|4|C|

Facility Name: OAK Americas City: Leland

EVALUATION DATA: New: ✓ Change: __ Delete: __ (=== : Required)

Agency: S Date: Mo. 10 Day 18 Year 02 Type: ~~C|E|I~~ CSE

Control Number / Data Entry Personnel:

Person: 0316 Reason: 011

Evaluation Comments:
(74) 1 : Facility is a TSDF
2 :

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one) — a SNC (SNY evaluation) ___ — or — no longer a SNC (SNN eval.) ___ Date of determination: Same as above eval.: ___ — or — __/__/__

VIOLATION DATA: New: ✓ Change: __ Delete: __

1 Agency: S Type: 6P17 Date (mdy) Determined: 10/19/12 Class: II Priority: __ Branch: 017 Person: 0316 Seq. Number (Data Entry): _____

Return to Compliance: — Scheduled —: 10/19/12 — Actual —: 10/18/12

Reg. Type: 512 Reg. Description (30): 262.34(c)(1) failure to maintain

Comment (72): accumulation areas at or near point of generation

2 Agency: __ Type: ____ Date (mdy) Determined: ~~10/19/12~~ Class: ~~II~~ Priority: __ Branch: ~~017~~ Person: ~~0316~~ Seq. Number (Data Entry): _____

Return to Compliance: — Scheduled —: ~~10/19/12~~ — Actual —: ~~10/18/12~~

Reg. Type: ~~512~~ Reg. Description (30): ~~262.34(c)(1) Failure to maintain~~

Comment (72): ~~accumulation areas at or near point of generation~~

3 Agency: __ Type: ____ Date (mdy) Determined: __/__/__ Class: __ Priority: __ Branch: ___ Person: ____ Seq. Number (Data Entry): _____

Return to Compliance: — Scheduled —: __/__/__ — Actual —: __/__/__

Reg. Type: ___ Reg. Description (30): _____

Comment (72): _____

Continue violation data on Side B if necessary —

Docket # 2002-206

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPREHENSIVE EVALUATION INSPECTION (CEI) REPORT

1. **FACILITY INFORMATION:**

Name: Oak Americas LLC
EPA ID Number: NCD 047 369 046
Type of Facility: Large Quantity Generator / TSDF
Facility Location: 3500 Daniels Rd.
Leland, NC 28451
Telephone Number: (910) 371-4673
OWNERSHIP: Oak America

2. **FACILITY CONTACT:** Penny Mahoney

3. **SURVEY PARTICIPANTS:** ~~19 September 2002~~ RKN Winston Price Penny Mahoney Mike Williams
Robert Nelms - NCDENR Walter Kelly

4. **DATE OF INSPECTION:** 19 September 2002

5. **PURPOSE OF INSPECTION:** Audit to determine compliance with regulations described at 40 CFR 261, 262, 264, 265, 268, 270, 279 and the facility's permit.

6. **FACILITY DESCRIPTION:**
Oak Americas is located on approximately 2200 acres and is bounded by the Cape Fear River on the north and east, SR 1426 on the west, and heavily wooded land on the south. The plant manufactures Terephthalic Acid (TPA) and Dacron polyester fiber.

7. **HAZARDOUS WASTE STREAMS INCLUDE:**
Used Hydrolizer Resin D018
Xylene Petroleum Distillates F002, F005
Paint Related Waste F003, F005
Waste Xylenes U239, D001

EPA I.D. # NCD 047 369 046

8. **AREAS OF REVIEW AND INSPECTION :**

- ✓ Emergency Preparedness — Contingency Plan ✓
- ✓ Inspection Records — Manifests / LDR ✓
- ✓ Training Records — Biennial Report ✓
- ✓ Operating Log
- ✓ CLOSURE COST ESTIMATE: $85,000 Expires: 31 December 2002
- ✓ FINANCIAL LIABILITY: Corporate Guarantee
- **Transporters:**

Robbie Woods NCD 067138891
Safety Kleen SCR 000075150

- **TSD's:**

Safety Kleen Systems	Southeastern Chem.
3700 LaGrange Rd	Sumpter, SC
Lexington, KY 40068 KYD053348108	SCD 036 275 626

- **Accumulation Areas:**

Monomers Lab - Two 55 gallon drums - Not at or near point of generation.
Staple Warehouse - Aerosol can waste - labeled + closed.

- **Storage Areas:**

- 90 day storage pad - One drum of universal waste
- Permitted pad - No waste

- **External Condition of Facility:** No adverse conditions noted.

9. **WASTE MINIMIZATION:** Source Reduction

10. **SITE DEFICIENCIES:**

-262.34 (c)(1) Failure to maintain accumulation areas of three (3) fifty five (55) gallon drums of hazardous waste at or near the point of generation.

11. **COMMENTS and/or RECOMMENDATIONS:**

- The operations log for the permitted pad had not been maintained for several years. Due to the pending closure of the pad no further action is warranted.
- Penny Mahoney must document training.

Robert K. Nelms DATE: 9/19/02
Robert Nelms
Waste Management Specialist, NCDENR

Penny Mahoney DATE: 9/19/02
Facility Representative

Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: DAK Americas LLC
3500 Daniels Rd.
Leland, NC 28451

Docket # 2002-206
Inspection Date: 19 September 2002
Facility Type: LQG / TSDF

EPA ID# NCD 047 369 046

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

On 19 September, 2002, Robert K. Nelms, representing the N.C. Hazardous Waste Section, inspected your facility for compliance with North Carolina Hazardous Waste Management Rules. During that inspection, the following violations were noted:

Citation	Specifics
40 CFR 262.34(c)(1)	Failure to maintain accumulation areas of three (3) fifty five (55) gallon drums of hazardous waste at or near the point of generation and under the control of the operator.

(over)

You are hereby required to comply with the noted violation(s) by 19 October, 2002, at which time a reinspection will be performed. If compliance with the violation(s) noted above are not met, pursuant to N.C.G.S. 130A-22(a) and 15A NCAC 13B .0701 - .0707, an administrative penalty of up to $25,000.00 per day may be assessed for violation of the hazardous waste law or regulations.

19 September 2002
(Date)

Robert K. Nelms
Waste Management Specialist
Hazardous Waste Section, NCDENR

I, Robert K. Nelms, hereby certify that I have personally served a copy of this Notice on:

OAK Americas at 3500 Daniels Rd. Leland, NC
(Name) (Location)

on 20 September, 2002.

(Recipient's Signature)

copies to: Bobby Nelms
Larry Perry - Eastern Supervisor, Compliance Branch
Central Files

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

RCRA REPORT
TREATMENT, STORAGE, AND DISPOSAL FACILITY

1. **FACILITY INFORMATION:**
   Facility Name: DAK Americas LLC
   EPA ID Number: NCD 047 3C9 04C
   Facility Location: 3500 Daniels Rd Leland, NC 28451
   Telephone Number: (910) 371-4673

2. **PURPOSE OF VISIT:** CEI (CSE) CAV

3. **FACILITY CONTACT:** Penny Mahoney

4. **SURVEY PARTICIPANTS:** Penny Mahoney, Walter Kelly, Winston Price
   Robert Nelms - NCDENR

5. **DATE OF VISIT:** 18 October 2002 **PREVIOUS VISIT:** 19 September 2002

6. **FACILITY DESCRIPTION:**
   See 19 September Inspection

7. **HAZARDOUS WASTE STREAMS INCLUDE:**
   Hydrolizer Resin D018 Paint Related Waste F003, F005
   Xylene, Petroleum Distillates F002 F005 Waste Xylenes U239, D001

8. **AREAS OF REVIEW, INSPECTION, and/or DEFICIENCY:**

PERMIT CONDITIONS - Documents to be Maintained at the Facility

N/A Waste Analysis Plan in accordance with 40 CFR 264.13

N/A Inspection Schedules developed in accordance with 264.15(b)

N/A Personnel Training Documents and Records in accordance with 40 CFR 264.16(d)

N/A Contingency Plan in accordance with 40 CFR 264.50 through 264.56

N/A Operating Record required by 40 CFR 264.73

N/A Closure Plan submitted in accordance with 40 CFR 264.112(a)

N/A Cost Estimate for Facility Closure in accordance with 40 CFR 264.142(d)

OTHER RULES:

Emergency Preparedness (Subpart C, 264.30 - 264.37)

Biennial Report (264.75) must be submitted by March 1 of each even numbered year, reporting activities of the previous year

Survey Plat in accordance with 264.116

Post-closure care - Cost Estimate & Financial Assurance in acc. with 264.144 & .145 (SMUs)

Use & Management of Containers (Subpart I, 264.170 - 264.179)

SPECIAL CONDITIONS:

Use & Management of Tanks (Subpart J, 264.190 - 264.200)

Incinerators (Subpart O, 264.340)

Corrective Action for Solid Waste Management Units (Subpart S, 264.552)

Drip Pads (Subpart W, 264.570)

9. **WASTE MINIMIZATION PLAN:** (management support, periodic assessment, cost allocation)
N/A

10. **SUMMARY OF DEFICIENCIES (cited by Rule):**
40 CFR 262.34 (c)(1)

DAK Americas is in compliance with the requirements of NOV docket number 2002-206 dated 19 September 2002.

Robert K. Nelms DATE: 10/18/02
Robert Nelms
Waste Management Specialist, NCDENR

Facility Representative DATE: 10/18/02

NCD 067046

Facility Name: DAK Americas LLC City: Leland

EVALUATION DATA New: ✓ Change: ___ Delete: ___

	Mo.	Day	Yr.	Type:
Date:	9	17	03	C E I
Date:	__	__	__	___

Inspector ID #: 036 Reason: ___

Evaluation Comments: 1st inspection since storage pad closure

No Violations

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one)

- a SNC (SNY evaluation) _____ Docket # _____

or

- no longer a SNC (SNN eval.) _____

YES / NO CSE ONLY

Waste Involved	Volume	Exposure Media (a, gw, sw, s)	Distance to Residences	Number of People involved	Distance to On-site wells	Distance to Off-site wells

#____ Type:___ ___ ___ Date Determined ___ ___/___ ___/___ ___ Class: __

Priority: ___ Branch:___ ___ Person: ___ ___

Return to Compliance ___ ___/___ ___/___ ___ (*Scheduled*) ___ ___/___ ___/___ ___ (*Actual*)

Reg. Type: ___ ___ Reg. Description:_____

Comment: _____

#____ Type:___ ___ ___ Date Determined:___ ___/___ ___/___ ___ Class: ___

Priority:___ Branch:___ ___ Person:___ ___

Return to Compliance: ___ ___/___ ___/___ ___ (*Scheduled*) ___ ___/___ ___/___ ___ (*Actual*)

Reg. Type: ___ ___ Reg. Description:_____

Comment:_____

State of North Carolina
Department of Environment & Natural Resources
Division of Waste Management
Hazardous Waste Section
Comprehensive Evaluation Inspection (CEI) Report

1. **FACILITY INFORMATION**
Name: DAK Americas LLC
EPA ID Number NCD 047 369 046
Type of Facility Large Quantity Generator
Facility Location 3500 Daniels Rd.
Leland, NC 28451
Telephone Number: (910) 371-4673
OWNERSHIP: DAK America

2. **FACILITY CONTACT**: Penny Maloney

3. **SURVEY PARTICIPANTS**: Winston Price, Walter Kelly
Robert K. Nelms NCDENR

4. **DATE OF INSPECTION**: 17 September 2003

5. **PURPOSE OF INSPECTION**: **Unannounced audit to determine compliance with regulations described at 40 CFR 261,262,265,268 and 279.**

6. **FACILITY DESCRIPTION**:

DAK Americas is located on approx. 2200 acres and is bounded by the Cape Fear River on the north and east, SR 1420 on the west, and heavily wooded land on the south. The plant manufactures Terephthalic Acid (TPA) and Dacron polyester fiber.

7. **HAZARDOUS WASTE STREAMS INCLUDE**:
Used Hydrolizer Resin D018 - Hazardous for Benzene - Cleanup every 364 days
~~Xylene Petroleum Distillates F002, F005~~ RKN
Paint Related Waste. F003, F005
~~Waste Xylenes D039, D001~~ RKN
Solids Containing Toluene & MEK F003, F005 - Paint Related

8. AREAS OF REVIEW AND INSPECTION :

- ✓ Emergency Preparedness
- ✓ Inspection Records (storage)
- ✓ Training Records
- Transporters:
  Safety Kleen TXR 000 050 930
  Robbins D Wast. ALD 067 138 891
- TSD's:
  Safety Kleen KYD 053 348 108
  Giant Cement Co SCD 003 351 699
- Accumulation Areas:
  See attached list
- Storage Areas:
  Hazardous Waste Storage Pad All drums labeled, dated, and closed.
- External Condition of Facility: No Adverse Conditions

✓ Contingency Plan
✓ Manifests / LDR
Biennial Report

9. WASTE MINIMIZATION: Best Mgmt Practices

10. SITE DEFICIENCIES:
No violations noted during inspection.

11. RECOMMENDATIONS:
Consolidate all items needed for contingency plan into one binder.

Robert K. Nelms DATE: 9/17/03
Robert K. Nelms
Waste Management Specialist, NCDENR

Winston Price DATE: 9-17-03
Facility Representative

HAZARDOUS WASTE SATELLITE STORAGE LOCATIONS

1. **H & V SHOP – SOUTH END OF YARN BLDG. (lube oil w/freon)**
2. **CONSTRUCTION TRUCK SHOP – (aerosol can)**
3. **STAPLE WAREHOUSE – INSIDE ON WEST WALL (aerosol can)**
4. **CENTRAL POWER HOUSE – INSIDE SHOP, EAST SIDE (aerosol can)**
5. **COAL FIRED POWER HOUSE – OUTSIDE NORTH END (aerosol can)**
6. **MONOMERS LAB – OUTSIDE ON EAST WALL (lab chemicals)**
7. **MONOMERS MAINT. SHOP – INSIDE BY TOOL ROOM (aerosol can)**

UNIVERSAL WASTE SATELLITE STORAGE AREAS

1. **STAPLE WAREHOUSE – OUTSIDE OF EAST WALL (fluorescent bulbs)**
2. **STAPLE WAREHOUSE – OUTSIDE OF EAST WALL**
   (mercury vapor, metal halide, sodium vapor, etc. bulbs)

LIGHT BALLEST AND CAPACITORS (PCB) ACUMMULATION IN ROOM NORTH OF MONOMERS MAINT. SHOP AND IN STAPLE WAREHOUSE.

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Director

August 6, 2003

Mr. Stephen H. Shoemaker
Corporate Remediation Group
DuPont Engineering
6324 Fairview Road
Charlotte, NC 28210

Re: Letter titled "Response to Comments on Phase III RFI Interim Report"
DAK Americas/DuPont Cape Fear Site
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Shoemaker:

In "Response to Comments on Phase III RFI Interim Report" (dated July 2, 2003), DuPont's Corporate Remediation Group (CRG) addressed both comments prepared by the Hazardous Waste Section (HWS) on the Phase III interim report and concerns raised during subsequent discussions. Some of these later concerns were expressed during a meeting held on April 16 while others were raised during a follow-up telephone conversation on May 8. Many of the tasks undertaken as part of supplemental Phase III investigations and the ongoing groundwater monitoring program were developed in response to the HWS's comments and concerns. Consequently, the HWS accepts the CRG's "response to comments" without recommending revisions to the Phase III interim report. Details of all Phase III investigations, the results of the current groundwater monitoring program, and any unresolved issues can be presented in the final Phase III RFI report.

If your office has questions concerning this correspondence, please call me at (919) 733-2178 extension 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
Hazardous Waste Section

cc: Narindar Kumar, US EPA, Region 4
Bobby Nelms
Penny Mahoney, DAK Americas
Larry Stanley

rc: Bud McCarty
Bob Glaser
Karim Pathan
Larry Stanley

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North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr. , Secretary
William L. Meyer, Director

June 13, 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Richard T. Love
Environmental Leader
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402

Re: Revised Phase II RCRA Facility Investigation Report (revised 5/14/01)
DuPont-Cape Fear Plant
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Love:

The North Carolina Hazardous Waste Section (HWS) has reviewed Revised Phase II RCRA Facility Investigation Report, the revisions to this report, and the "Responses to Comments" submitted by DuPont-Cape Fear. As a result of this review, the HWS has determined that the revised Phase II report constitutes an acceptable RFI report.

Within 90 (ninety) days of the receipt of this letter, DuPont-Cape Fear should submit a Phase III RFI work plan to the HWS. If your office has any questions concerning this correspondence, please give me a call at (919) 733-2178, ext. 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
Hazardous Waste Section

cc: Narindar Kumar, US EPA, Region IV
Flint Worrell
Larry Stanley

rc: Pete Doorn
Bob Glaser
Kathy Lawson
Karim Pathan
Larry Stanley

d:\wpfiles\melodi\lgs\dw061301.ltr.wpd

cc: LARRY STANLEY
FLINT

DuPont Cape Fear Plant
P.O. Box 2042
Wilmington, NC 28402

DuPont Cape Fear Plant

May 10, 2001

Mr. Bill Meyer, Director
Division of Solid Waste Management
North Carolina Department of Environment,
Health & Natural Resources
401 Oberlin Road
Raleigh, NC 27602

Dear Mr. Meyer:

In accordance with DuPont procedures, and pursuant to 40CFR 270.11 (a)(1)(ii), and (b) and 40CFR 122.22 (a)(1)(ii) and (b), and all applicable State Regulations, I, Leroy N. Butler, Manager of the DuPont Cape Fear Site in Brunswick County, North Carolina, delegate my authority to sign all routine reports required by permits, and provide other information requested by the State and/or Federal Regulatory Agencies to our Site SHEA/Responsible Care Leader.

My delegation of this authority is consistent with the normal responsibility of these positions within DuPont.

Sincerely,

Leroy N. Butler
Site Manager

North Carolina
Department of Environment and Natural

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr. , Secretary
Dexter R. Matthews, Interim Director

September 5, 2001

Mr. Stephen H. Shoemaker
Senior Consultant
DuPont Engineering
6324 Fairview Road
Charlotte, NC 28210

Re: Thirty-Day Extension for Submittal of Phase III RFI Work Plan
DuPont-Cape Fear Plant
Wilmington, NC
EPA ID # NCD 047 369 046

Dear Mr. Shoemaker:

The Hazardous Waste Section grants Dupont-Cape Fear a thirty-day time extension for the submittal of their Phase III RFI work plan. With the granting of the requested thirty-day extension, the RFI work plan will be due on October 12, 2001.

If your office has questions concerning this correspondence, please contact me by e-mail at Larry.Stanley@ncmail.net or by telephone at (919) 733-2178, ext. 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
Hazardous Waste Section

cc: Narindar Kumar, EPA Region IV
Flint Worrell
Larry Stanley

rc: Pete Doorn
Bob Glaser
Kathy Lawson
Larry Stanley

c:\wpfiles\melodi\lgs\dc090501.ext.wpd

Cape Fear Site
P.O. Box 2042
Wilmington, N.C. 28402

DAK Americas
FIBERS, MONOMERS & RESINS

September 13, 2001

To: Flint Worrell
Waste Management Specialist
225 Green Street, Suite 601
Fayetteville, NC 28301

From: Winston Price
Facility Contact
DAK Monomers, LLC
P.O. Box 2042
Wilmington, NC 28402
Date: 9/13/01
EPA I.D.# NCD047369046

Pursuant with 40 CFR 270.42 this DAK Monomers, LLC facility is hereby submitting this copy of the Change of Facility Owner and Operator that was processed by NCDENR as a class one(1) modification under 40 CFR 270.42. This cover sheet also is being used to emphasize that EPA form # 8700-12 was received by NCDENR to change this facility's name so that it reflects the facilities co/ownership status with DuPont and to change this facility's status to a small quantity hazardous waste generator.

If you have any questions concerning this information please call Winston Price at (910)371-4830

Sincerely,

Winston Price

Winston Price, Environmental Leader
DAK Monomers

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OY

For EPA Regional Use Only		
Date Received Month Day Year		

United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. Facility's EPA ID Number *(Mark 'X' in the appropriate box)*

A. First Part A Submission	B. Revised Part A Submission (Amendment #_____)
	X

C. Facility's EPA ID Number

N C D 0 4 7 3 6 9 0 4 6

D. Secondary ID Number *(If applicable)*

II. Name of Facility

D A K M O N O M E R S, L L C

III. Facility Location *(Physical address not P.O. Box or Route Number)*

A. Street

S T A T E R O A D 1 4 2 6

Street *(Continued)*

City or Town

L E L A N D

State N C **Zip Code** 2 8 4 5 1 –

County Code *(If known)*

County Name

B R U N S W I C K

B. Land Type (Enter code) P

C. Geographic Location *LATITUDE (Degrees, minutes, & seconds)* 3 4 1 9 0 0 N *LONGITUDE (Degrees, minutes & seconds)* 0 7 8 0 2 3 0 N

D. Facility Existence Date Month 0 7 Day 1 9 Year 1 9 6 8

IV. Facility Mailing Address

Street or P.O. Box

P . O . B O X 2 0 4 2

City or Town

W I L M I N G T O N

State N C **Zip Code** 2 8 4 0 2 –

V. Facility Contact *(Person to be contacted regarding waste activities at facility)*

Name *(Last)*

P R I C E

(First)

W I N S T O N

Job Title

E N V I R O N . L E A D E R

Phone Number *(Area Code and Number)*

9 1 0 – 3 7 1 – 4 8 3 (

VI. Facility Contact Address *(See instructions)*

A. Contact Address Location Mailing Other: X

B. Street or P.O. Box

City or Town

State **Zip Code** –

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
NCD047369046	

VII. Operator Information *(See instructions)*

A. Name of Operator

DAK MONOMERS, LLC

Street or P.O. Box

P.O. BOX 2042

City or Town	State	ZIP Code
WILMINGTON	NC	28402-

Phone Number *(Area Code and Number)*	B. Operator Type	C. Change of Operator Indicator	Date Changed Month	Day	Year
910-371-4000	P	Yes X No	07	31	2001

VIII. Facility Owner *(See instructions)*

A. Name of Facility's Legal Owner

DAK MONOMERS, LLC

Street or P.O. Box

P.O. BOX 2042

City or Town	State	ZIP Code
WILMINGTON	NC	28402-

Phone Number *(Area Code and Number)*	B. Owner Type	C. Change of Owner Indicator	Date Changed Month	Day	Year
910-371-4000	P	Yes X No	07	31	2001

IX. NAICS Codes *(in order of significance; start in left box)*

First	2824	Third	2821
(Description)		*(Description)*	
Second	2865	Fourth	
(Description)		*(Description)*	

X. Other Environmental Permits *(See instructions)*

A. Permit Type *(Enter code)*	B. Permit Number	C. Description
N	NC0000063	Wastewater Treatment
P	03033R25	Air
E	WQ0012759	Land Application Residual Solids
R	NCD047369046	RCRA / HSWA

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*: NCD047369046

Secondary ID Number *(Enter from page 1)*:

VII. Operator Information *(See instructions)*

A. Name of Operator: E. I. Dupont de Nemours & Co.

Street or P.O. Box: 6324 Fairview Rd

City or Town: Charlotte

State: NC

ZIP Code: 28210 —

Phone Number *(Area Code and Number)*: 704 — 362 — 6636

B. Operator Type: P

C. Change of Operator Indicator: Yes X No

Date Changed Month Day Year: 07 31 2001

VIII. Facility Owner *(See instructions)*

A. Name of Facility's Legal Owner: E. I. Dupont de Nemours & Co.

Street or P.O. Box: 6324 Fairview Rd

City or Town: Charlottee

State: NC

ZIP Code: 28210 —

Phone Number *(Area Code and Number)*: 704 — 362 — 6636

B. Owner Type: P

C. Change of Owner Indicator: Yes X No

Date Changed Month Day Year: 07 31 2001

IX. NAICS Codes *(in order of significance; start in left box)*

First	Third
(Description)	*(Description)*
Second	**Fourth**
(Description)	*(Description)*

X. Other Environmental Permits *(See instructions)*

A. Permit Type *(Enter code)*	B. Permit Number	C. Description
E	10-06	Industrial Landfill

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
N C D 0 4 7 3 6 9 0 4 6	

XI. Nature of Business *(Provide a brief description)*

Manufacture of Terephthalic Acid, Dacron(R)
Polyester Resin, and Dacron(R) Polyester Fiber

XII. Process Codes and Design Capacities

A. **PROCESS CODE** - *Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in item XIII.*

B. **PROCESS DESIGN CAPACITY** - *For each code entered in column A, enter the capacity of the process.*
1. **AMOUNT** - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.*
2. **UNIT OF MEASURE** - *For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.*

C. **PROCESS TOTAL NUMBER OF UNITS** - *Enter the total number of units used with the corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectare-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Acres; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T02	Surface Impoundment Treatment	Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Day; Liters Per Hour; or Million Btu Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; Btu Per Hour; or Million Btu Per Hour
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Liters Per Hour; Kilograms Per Hour; or Million Btu Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Hour; Liters Per Hour; or Million Btu Per Hour
T88	Titanium Dioxide Chloride Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed in 40 CFR §260.10	
T94	Containment Building - Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; or Million Btu Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Million Btu Per Hour	X
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu Per Hour	I

EPA ID Number *(Enter from page 1)*: N C D 0 4 7 3 6 9 0 4 6

Secondary ID Number *(Enter from page 1)*:

XII. Process Codes and Design Capabilities *(Continued)*

EXAMPLE FOR COMPLETING ITEM XII (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. PROCESS DESIGN CAPACITY 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	For Official Use Only
X 1	S 0 2	5 3 3 . 7 8 8	G	0 0 1	
1	S 0 1	7 3 2 4 . 0 0 0	G	0 0 1	
2	S 0 1	1 0 5 6 0 . 0 0 0	G	0 0 1	
3		.			
4		.			
5		.			
6		.			
7		.			
8		.			
9		.			
10		.			
11		.			
12		.			
13		.			

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in item XIII.

XIII. Other Processes *(Follow instructions from item XII for D99, S99, T04 and X99 process codes)*

Line Number (Enter #s in seq w/XII)	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. PROCESS DESIGN CAPACITY 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	D. Description Of Process
X 1	T 0 4	.			In-situ Vitrification
1		.			
2		.			
3		.			
4		.			

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
N C D 0 4 7 3 6 9 0 4 6	

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

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

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

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

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

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/ or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of item XIV-D(1).*
3. *Use additional sheet, enter line number from previous sheet, and enter additional code(s) in item XIV-E.*

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

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

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

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

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	p	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

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Form Approved, OMB No. 2050-0034 Expires 10/31/02
GSA No. 0248-EPA-OT

EPA ID Number *(Enter from page 1)*: N C D 0 4 7 3 6 9 0 4 6

Secondary ID Number *(Enter from page 1)*:

XIV. Description of Hazardous Wastes *(Continued; use additional sheets as necessary)*

Line Number	A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Quantity of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D001	40,000	P	S01	
2	F002				Included with above
3	D002				Included with above
4	D007	500	P	S01	
5	F002	500	P	S01	
6	D006				Included with above
7	D007				Included with above
8	D008				Included with above
9	D004	20,000	P	S01	
10	F001	1,000	P	S01	
11	D009	4,000	P	S01	
12	D018	30,000	P	S01	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

EPA ID Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
N C D 0 4 7 3 6 9 0 4 6	

XV. Map

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

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (See instructions for more detail).

XVII. Photographs

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

XVIII. Certification(s)

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

Owner Signature			Date Signed 6/21/01
Name and Official Title (Type or print)	Oscar J. Montemayor	Vice President	
Owner Signature			Date Signed 6/13/01
Name and Official Title (Type or print)	Willie C. Martin	Vice President	
Operator Signature			Date Signed 6/21/01
Name and Official Title (Type or print)	Oscar J. Montemayor	Vice President	
Operator Signature			Date Signed 6/13/01
Name and Official Title (Type or print)	Willie C. Martin	Vice President	

XIX. Comments

DAK Monomers, LLC and E. I. DuPont will be co-permittees. DAK Monomers, LLC will be the major operator and generator at the site. E. I. DuPont will be the main contact for HSWA issues as the previous owner and operator.

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)

North Carolina
Department of Environment and Natural Resources

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr. , Secretary
William L. Meyer, Director

March 14, 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Richard T. Love
Environmental Leader
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402

Re: Responses to Comments and Revisions to Phase II RCRA Facility Investigation Report (2/1/01)
DuPont-Cape Fear Plant
Leland, NC
EPA ID # NCD 047 369 046

Dear Mr. Love:

The North Carolina Hazardous Waste Section (HWS) has reviewed the "Responses to Comments" and revisions to the Phase II RFI report submitted by DuPont-Cape Fear. This review has raised some points that require additional discussion and clarification. The section numbers cited below refer to sections in Revised Phase II RCRA Facility Investigation Report.

Item 1
Table 11 - Background Soil Sampling Detects

Some of the screening values listed in Table 11 (Background Soil Sampling Detects) are not consistent with the revised values listed in Tables 12, 13, 14 and 15. Table 11 should also be revised to show the correct screening values.

Item 2
Section 4.1.4 - AOC A: Paraxylene AST

Three soil samples collected at AOC A and analyzed for xylene showed concentrations that exceed EPA Region IX Preliminary Remediation Goals for Industrial Soils. The Region IX standard is 210 ppm. The concentrations of xylene in the three soil samples were 240 ppm, 700 ppm, and 1600 ppm. The soil sample with the highest concentration of xylene was collected at a depth of 2 to 4 feet below the ground surface. The other two samples were collected at a depth of 3 to 4 feet. DuPont-Cape Fear must either demonstrate that the xylene impacted soils that exceeded Region IX standards do not pose a threat to human health and the environment or develop a remediation plan for these soils.

Item 3
Section 4.2 - Characterization Wells/SWMU 55 Wells

In DuPont-Cape Fear's "Responses to Comments," the Peedee confining unit was reported to have a thickness of up to 32-feet at MW-35. Figure 8a (Structure Contour Map on Top of the Peedee Confining Unit) shows the Peedee confining unit dipping to the north. DuPont-Cape Fear believes that there is an unconformity on top of this unit. Consequently, most of the unit's northward dip can be interpreted to be caused by a decrease in the thickness of the confining unit. (Cretaceous formations generally dip at a low angle to the east-southeast and strike northeast-southwest.) If the Peedee confining unit is at an elevation of +7 feet MSL at MW-35, then the unit would be approximately 8 feet thick in the vicinity of SWMU 55 (Past Landfill #1).

There are two areas of the site where deep tests into the Peedee aquifer may be warranted. One is at SWMU 55--Past Landfill #1. Chlorinated solvents were disposed of in this landfill, and the Peedee confining unit can be projected to be relatively thin here. Previous investigations conducted during Phase I of the RFI show that the surficial aquifer has been impacted by a release from this unit. Chloroform, carbon tetrachloride, trichloroethene, and tetrachloroethene were all detected at significant concentrations in groundwater samples collected from monitoring well MW-13. Monitoring well MW-13 has since been abandoned.

The second possible location for a test of the Peedee aquifer would be downgradient of the source for the chlorinated compounds detected at MW-14. While the concentrations of these

compounds in the groundwater of the surficial aquifer appear to be relatively low, the source has not been identified.

Item 4
Section 5.3.2 - Groundwater

The HWS generally agrees with the argument detailed in Comment 13 of DuPont-Cape Fear's "Responses to Comments." However, analytical results for lead and chromium have, during either the 1999 or 2000 sampling event, exceeded background and 2L Standards at MW-4, MW-11, and MW-25. The HWS recommends that DuPont-Cape Fear continue to monitor these wells and develop a historical data base containing each constituent's concentrations through time. Reports submitted to the HWS should show trends in chromium and lead concentrations at each well.

Item 5
Section 5.3.2 - Groundwater (Thallium)

In their "Responses to Comments," DuPont-Cape Fear indicated that concentrations of thallium in groundwater have historically exceeded Federal MCL's. The standard was exceeded in groundwater samples collected from wells located adjacent to landfills permitted by the NC Solid Waste Section. The Federal MCL (2.0 ppb) is greater than the Federal MCLG (0.5 ppb) which is the standard for thallium recognized by the HWS. Because of the historical occurrence of thallium and its low groundwater standard, the Hazardous Waste Section believes that thallium should be added to the facility's list of constituents of concern (COC's).

Item 6
Additional Comment

SWMU's 37-North Incinerator, 38-South Incinerator, 48-Drum Storage, 63-Hazardous Waste Storage Tank, 65-Incinerator Building Trash Pile, 68-Cooling Tower Basins, 69-Incinerator Building Waste Sump, and 70-Incinerator Ash Dumpster are located in one area of the facility. Most of these units are no longer operational. All eight have been designated low priority. However, little data has been collected in the area of these SWMU's, and the low priority designations may not be justified. The Hazardous Waste Section believes that investigations will be needed to properly rank these units.

DuPont-Cape Fear should respond to this letter within 60 (sixty) days of its receipt. If your office has any questions concerning this correspondence, please give me a call at (919) 733-2178, ext. 236.

Sincerely,

Larry Stanley

Larry Stanley
Hydrogeologist
Hazardous Waste Section

cc: Narindar Kumar, US EPA, Region IV
Flint Worrell
Larry Stanley

rc: Pete Doorn
Bob Glaser
Kathy Lawson
Karim Pathan
Larry Stanley

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NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

November 23, 1999

DUPONT EI DE NEMOURS & CO CAPE FEAR
PO BOX 2042
WILMINGTON, NC 28402-

RE EPA ID NO.: **NCD047369046**

Dear Sir/Madam:

Based on information received by this office for the site identified with the EPA ID number, the state has accepted and processed the change in RCRA classification or information for the above site.

Please verify the computer generated information on the attached report and notify us of any corrections. We are advising EPA of the changes.

If you have any questions or if I can be of any further assistance, please call me at (919)733-2178 ext.209.

Sincerely,

R. J. Edwards, Administrative Assistant
Division of Waste Management

cc: FLINT WORRELL

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

State of North Carolina
Department of Environment and Natural Resources

Division of Waste Management

P. O. Box 29603
Raleigh, North Carolina 27611-9603
Voice 919-733-2178

November 23, 1999

Notification of Hazardous Waste Report
Current Computer Record
'X' indicates operation status of your facility.

EPA ID#:	NCD047369046
Company name:	DUPONT EI DE NEMOURS & CO CAPE FEAR
Owner:	
Contact:	RICK LOVE, ENV LEADER
Phone number:	910/371-5230
Location address:	SR 1426
City, St & ZIP:	LELAND, NC 28451-

Generator

X LARGE GENERATOR
__ SMALL QNTY GENERATOR
__ EXEMPT SMALL QNTY
__ LG QNTY. UNIVERSAL

Transporter

__ For own waste only
__ For commercial purposes

Transportation

__ Air
__ Rail
__ Highway
__ Water
__ Other

TSD

__ STORES
__ TREATER
__ DISPOSER

Hazardous Waste Fuel

__ Gentr marketing to burner
__ Other marketers
__ Burner
__ 1. Smelter deferral
__ 2. Small qunt. exempt

Combustion Devices

__ Utility boiler
__ Industrial boiler
__ Industrial furnace

Used Oil Fuel Marketer

__ Marketer directs shipment of used oil to off-specification burner
__ Marketer who first claims the used oil meets specifications

Used Oil Burner-Combustion Devices

__ Utility Boiler
__ Industrial Boiler
__ Industrial Furnace

Used Oil Transporter Activities

__ Transporter
__ Transfer facility

Used Oil Processor/Re-refiner Activities

__ Process
__ Re-refine

Please notify us if there is any further change in your operation which would affect your status specifically Company's Name, Ownership, Address, Contact or Telephone Number.

Your EPA ID number is currently active.

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

November 23, 1999

HANSON-GARDNER
PO BOX 848
CHERAW, SC 29520-

RE EPA ID NO.: **NCD982130643**

Dear Sir/Madam:

Based on information received by this office for the site identified with the EPA ID number, the state has accepted and processed the change in RCRA classification or information for the above site.

Please verify the computer generated information on the attached report and notify us of any corrections. We are advising EPA of the changes.

If you have any questions or if I can be of any further assistance, please call me at (919)733-2178 ext.209.

Sincerely,

R. J. Edwards, Administrative Assistant
Division of Waste Management

cc: FLINT WORRELL

1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

State of North Carolina
Department of Environment and Natural Resources

Division of Waste Management

P. O. Box 29603
Raleigh, North Carolina 27611-9603
Voice 919-733-2178

November 23, 1999

Notification of Hazardous Waste Report
Current Computer Record
'X' indicates operation status of your facility.

EPA ID#:	NCD982130643
Company name:	HANSON-GARDNER
Owner:	
Contact:	N F WILLS, ENV DIRECTOR
Phone number:	843/537-7883
Location address:	3155 NC 210 SOUTH
City, St & ZIP:	BUNNLEVEL, NC 28323-

Generator

__ LARGE GENERATOR
X SMALL QNTY GENERATOR
__ EXEMPT SMALL QNTY
__ LG QNTY. UNIVERSAL

Transporter

__ For own waste only
__ For commercial purposes

Transportation

__ Air
__ Rail
__ Highway
__ Water
__ Other

TSD

__ STORES
__ TREATER
__ DISPOSER

Hazardous Waste Fuel

__ Gentr marketing to burner
__ Other marketers
__ Burner
__ 1. Smelter deferral
__ 2. Small qunt. exempt

Combustion Devices

__ Utility boiler
__ Industrial boiler
__ Industrial furnace

Used Oil Fuel Marketer

__ Marketer directs shipment of used oil to off-specification burner
__ Marketer who first claims the used oil meets specifications

Used Oil Burner-Combustion Devices

__ Utility Boiler
__ Industrial Boiler
__ Industrial Furnace

Used Oil Transporter Activities

__ Transporter
__ Transfer facility

Used Oil Processor/Re-refiner Activities

__ Process
__ Re-refine

Please notify us if there is any further change in your operation which would affect your status specifically Company's Name, Ownership, Address, Contact or Telephone Number.

Your EPA ID number is currently active.

CSE 99-228

Region 4 Compliance Data Entry Form - Side A (Rev.8/97)

	Submittal Information	Initial By- Date -	Corrected By- Date -
RCRA Comp. Section:			
Received:			
Entered/ Returned:			

FACILITY INFORMATION:

EPA ID Number: NCD 980 618 702 9

Facility Name: DuPont - Cape Fear Plant City: Leland NC

EVALUATION DATA: New: __ Change: __ Delete: __ (═══ : Required)

Agency: S Date: Mo. 10 / Day 05 / Year 99 Type: CSE

Control Number Data Entry Personnel

Person: 009 Reason: 01

Evaluation Comments:
(74) 1 : Docket # 99-128 In Compliance with NOV
2 :

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one)
- a SNC (SNY evaluation) ___
or-
- no longer a SNC (SNN eval.) ___

Date of determination:
Same as above eval.: ___ - or - __ / __ / __

VIOLATION DATA: New: __ Change: __ Delete: __

#1 Agency: S Type: 124 Date (mdy) Determined: 08 / 04 / 99 Class: 2

Priority: 2 Branch: HW Person: 009 Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- 10 / 04 / 99 --- Actual --- 09 / 23 / 99

Reg. Type: SR Reg. Description (30):

Comment (72):

#__ Agency: ___ Type: ___ Date (mdy) Determined: __ / __ / __ Class: ___

Priority: ___ Branch: ___ Person: ___ Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- __ / __ / __ --- Actual --- __ / __ / __

Reg. Type: ___ Reg. Description (30):

Comment (72):

#__ Agency: ___ Type: ___ Date (mdy) Determined: __ / __ / __ Class: ___

Priority: ___ Branch: ___ Person: ___ Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- __ / __ / __ --- Actual --- __ / __ / __

Reg. Type: ___ Reg. Description (30):

Comment (72):

Continue violation date on Side B if necessary -

*** EPA Region 4 Compliance Data Entry Form -Side B *** (8/97)

Fill out facility information on Side A, then come back to this side.

ENFORCEMENT DATA: New: __ Change: __ Delete: __ (▬▬: Required)

Agency: Type: Date: Month / Day / Year Seq.# (Data Entry)

Person: Branch: Poll. Prev. Measures:

Penalty Data

Proposed: $

Settled/Final: $

1) Payments: $ Date Paid: / /

2) $ / /

Enforcement Comments: (74) 1: ____

2: ____

Cite violations addressed by this action below -

VIOLATION DATA: New: ___ Change: ___ Delete: ___

#_ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ____

Comment (72): ____

#_ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ____

Comment (72): ____

#_ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ____

Comment (72): ____

#_ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ____

Comment (72): ____

More violations for this enforcement action on other side ? Yes ☐ No ☐

Solid Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: JEFF RICHARDSON – DUPONT - CAPE FEAR
Address: SR 1426 P.O. Box 2042
LELAND N.C 28451
EPA ID# NCD 986 187 029

Docket # 99-228
Inspection Date 08-04-99
Facility Type TSD LQG

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

On 08-04, 1999, FLINT WORRELL representing the N.C. Hazardous Waste Section, inspected your facility for compliance with North Carolina Hazardous Waste Management Rules. During that inspection, the following violations were noted:

Citation	Specifics
40 CFR §	265.16 (C) FACILITY PERSONNEL MUST TAKE PART IN AN ANNUAL REVIEW OF THE INITIAL TRAINING REQUIRED IN PARAGRAPH (A) OF THIS SECTION.
	MR. JOHN WHITE'S TRAINING HAD EXPIRED.
	Received cert. 10/05/99 in compliance with NOV F. Worrell

You are hereby required to comply with the noted violation(s) by 10-04, 1999, at which time a reinspection will be performed. If compliance with the violation(s) noted above are not met, pursuant to N.C.G.S. 130A-22(a) and 15A NCAC 13B .0701 - .0707, an administrative penalty of up to $25,000.00 per day may be assessed for violation of the hazardous waste law or regulations.

08-06-99
(Date)

L.F. WORRELL
N.C. Hazardous Waste Section

I, L.F. Worrell LF WORRELL, hereby certify that I have personally served a copy of this Notice on:

DUPONT - CAPE FEAR
(Name)

at SR 1426, P.O. Box 2042 LELAND NC 28451
(Location)

on _____, 19___.

_____
(Recipient Signature)

copies to: field files
central files
Regional Manager

DuPont Cape Fear Plant
P.O. Box 2042
Wilmington, North Carolina 28402

DuPont Cape Fear Plant

0CTOBER 4, 1999

Mr. Flint Worrell
Waste Management Specialist
Hazardous Waste Section
North Carolina Department of Environment,
Health, and Natural Resources
225 Green Street, Suite 601
Fayetteville, North Carolina 28301

Dear Mr. Worrell,

Attached are copies of training certificates for Annual Hazardous Waste Training for this year 1999.

If you have any questions, please contact me at (910) 371-4409

Sincerely,

J. H. White

J. H. White
DACRON Fibers Environmental Technician

ONYX ENVIRONMENTAL SERVICES, L.L.C.

awards this certificate to:

John White

In Recognition for: *8-Hour Hazardous Waste Management Training Program*

Dated: *September 23, 1999*

ONYX

Director of Organizational Training & Development

Region 4 Compliance Data Entry Form - Side A (Rev.8/97)

Submittal Information	Initial By-	Initial Date -	Corrected By-	Corrected Date -
RCRA Comp. Section:		__/__/__		__/__/__
Received:		__/__/__		__/__/__
Entered/ Returned:		__/__/__		__/__/__

FACILITY INFORMATION:

EPA ID Number: NCD047369046

Facility Name: DUPONT - CAPE FEAR City: LELAND, N.C.

EVALUATION DATA: New: __ Change: __ Delete: __ (═══ : Required)

Agency: S Date: Mo. 08 / Day 04 / Year 99 Type: CEI

Control Number Data Entry Personnel

Person: 0019 Reason:

Evaluation Comments:
(74) 1 : TSD - LQG NOV # 99-228

2 :

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one) - a SNC (SNY evaluation) ___ or - no longer a SNC (SNN eval.) ___

Date of determination: Same as above eval.: ___ - or - __/__/__

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: Type: Date (mdy) Determined: Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- --- Actual ----
Reg. Type: Reg. Description (30):
Comment (72):

#__ Agency: Type: Date (mdy) Determined: Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- --- Actual ----
Reg. Type: Reg. Description (30):
Comment (72):

#__ Agency: Type: Date (mdy) Determined: Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- --- Actual ----
Reg. Type: Reg. Description (30):
Comment (72):

Continue violation date on Side B if necessary -

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPLIANCE INSPECTION

08-04-99
BRUNSWICK Co.
NOV-ISSUED

Facility Name: DUPONT EI DE NEMOURS & CO CAPE FEAR

EPA ID: NCD 047 369 046

Contact: JEFF RICHARDSON / ULYSSES SLADE 910/3714000

Address: SR 1426 PO BOX 2042

LELAND, N.C. 28451

Status: TSD - LQG

Ownership: DUPONT, INC.

Facility Description: DUPONT CAPEFEAR located along THE CAPE FEAR RIVER in PHOENIX NC. THE COMPANY MANUFACT. TEREPHTHALIC ACID, DIMETHYLTEREPHTHALATE DMT, POLYESTER RESIN AND DACRON POLYSTER FIBER. LARGEST WASTE STREAM IS THE PRECIPITATED ASH.

Waste Generation Processes: WASTE SOLVENTS (METHANOL mixture) (ACETIC ACID & Xylene) TETRACHLOROETHYLENE - AERSOL CANS - AGITENE - FIBERS CHEM LAB WASTE glycol (arsenic) - PAINT WASTE - PRECIPITATION ASH (CHROMIUM) CONSTRUCTION GARBAGE - Xylene & DMT or TPA - WASTE Glycol & PHOSPHRIC Acid - Waste Dowtherm (Benzene) Fluorescent BULBS, Hydrolyzed Resin Videojet WASTE.

Waste Types: D001, D002, D003, D005, D006.

D007, F001, F005, D010, D018.

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPLIANCE INSPECTION

08-04-99
BRUNSWICK Co.
NOV-ISSUED

Facility Name: DUPONT EI DE NEMOURS & CO CAPE FEAR

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Waste Generation Processes: WASTE SOLVENTS (METHANOL MIXTURE) (ACETIC ACID & XYLENE) TETRACHLOROETHYLENE - AERSOL CANS - AGITENE - FIBERS CHEM LAB WASTE glycol (arsenic) - PAINT WASTE - PRECIPITATION ASH (CHROMIUM) CONSTRUCTION GARBAGE - XYLENE & DMT or TPA - WASTE GLYCOL & PHOSPHRIC ACID - WASTE DOWTHERM (BENZENE) FLUORESCENT BULBS, HYDROLIZED RESIN VIDEOJET WASTE.

Waste Types: D001, D002, D003, D005, D006.

D007, F001, F005, D010, D018.

08-04
CEI
BRUNSWICK
CAPE FEAR PL

Facility Name: DUPONT CAPE FEAR ID# NCD 986 187 029 Pg. 2

Transporters: TRI STATE TRANSP MOD 095 038 978

TSDF: CHEM WASTE MGMT ALD 000 622 464
ADVANCED ENVIRONMENTAL

Accumulation Areas: ① H & V SHOP (FREON OIL, INK) ④ CONSTRUCTION COMP AREA (PAINT WASTE)
② FLUOR LIGHTS STORAGE BLD (AER) ⑤ INCINER. BLDG (AEROSOL CANS)
③ DI MAINTENANCE (AERO)

Storage Areas: PERMIT STORAGE PAD

Waste Minimization: YES 94 PLAN
NEED ANNUAL REVIEW OF PROCESS ENGINEERS

Deficiencies: ANNUAL TRAINING 265.16(C) JOHN WHITE
SEE NOV 99-

Recommendations:

Waste Management Specialist: R. T. Warner

Facility Contact: JEFF RICHARDSON

Date: 08-04-99

Solid Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: JEFF RICHARDSON – DUPONT - CAPE FEAR
Address: SR 1426 P.O. Box 2042
LELAND N.C 28451
EPA ID# NCD 986 187 029

Docket # 99- 228
Inspection Date 08-04-99
Facility Type TSD LQG

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

On 08-04, 1999, FLINT WORRELL representing the N.C. Hazardous Waste Section, inspected your facility for compliance with North Carolina Hazardous Waste Management Rules. During that inspection, the following violations were noted:

Citation	Specifics
40 CFR §	265.16 (C) FACILITY PERSONNEL MUST TAKE PART IN AN annual review of THE INITIAL TRAINING required in PARAGRAPH
	(A) of THIS SECTION.
	MR. JOHN WHITE'S TRAINING HAD EXPIRED.

You are hereby required to comply with the noted violation(s) by 10-04, 1999, at which time a reinspection will be performed. If compliance with the violation(s) noted above are not met, pursuant to N.C.G.S. 130A-22(a) and 15A NCAC 13B .0701 - .0707, an administrative penalty of up to $25,000.00 per day may be assessed for violation of the hazardous waste law or regulations.

08-06-99
(Date)

L.F. WORRELL
N.C. Hazardous Waste Section

I, L.F. Worrell LF WORRELL, hereby certify that I have personally served a copy of this Notice on:

DUPONT - CAPE FEAR
(Name)

at SR 1426, P.O. Box 2042 LELAND NC 28451
(Location)

on _____, 19__.

_____
(Recipient Signature)

copies to: field files
central files
Regional Manager

Solid Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: JEFF RICHARDSON – DUPONT - CAPE FEAR
Address: SR 1426 P.O. Box 2042
LELAND N.C 28451
EPA ID# NCD 986 187 029

Docket # 99-228
Inspection Date 08-04-99
Facility Type TSD LQG

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

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08-06-99
(Date)

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N.C. Hazardous Waste Section

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DUPONT - CAPE FEAR
(Name)

at SR 1426, P.O. Box 2042 LELAND NC 28451
(Location)

on _____, 19___.

_____
(Recipient Signature)

copies to: field files
central files
Regional Manager

Region 4 Compliance Data Entry Form - Side A (Rev.8/97)

Submittal Information	Initial By-	Initial Date -	Corrected By-	Corrected Date -
RCRA Comp. Section:	____	__/__/__	____	__/__/__
Received:	____	__/__/__	____	__/__/__
Entered/ Returned:	____	__/__/__	____	__/__/__

FACILITY INFORMATION:

EPA ID Number: NCD047369046

Facility Name: DUPONT - CAPE FEAR City: LELAND, N.C.

EVALUATION DATA: New: __ Change: __ Delete: __ (═══ : Required)

Agency: S Date: Mo. 08 / Day 04 / Year 99 Type: CEI

Control Number Data Entry Personnel

Person: 009 Reason: ____

Evaluation Comments: (74) 1 : TSD-LQG

2 : ______

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one) - a SNC (SNY evaluation) ☐

or- - no longer a SNC (SNN eval.) ☐

Date of determination: Same as above eval.: ☐ - or - __ / __ / __

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: ☐ Type: ____ Date (mdy) Determined: __/__/__ Class: ☐
Priority: ☐ Branch: ___ Person: ___ Seq. Number (Data Entry) ______
Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__
Reg. Type: ___ Reg. Description (30): ______
Comment (72): ______

#__ Agency: ☐ Type: ____ Date (mdy) Determined: __/__/__ Class: ☐
Priority: ☐ Branch: ___ Person: ___ Seq. Number (Data Entry) ______
Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__
Reg. Type: ___ Reg. Description (30): ______
Comment (72): ______

#__ Agency: ☐ Type: ____ Date (mdy) Determined: __/__/__ Class: ☐
Priority: ☐ Branch: ___ Person: ___ Seq. Number (Data Entry) ______
Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__
Reg. Type: ___ Reg. Description (30): ______
Comment (72): ______

Continue violation date on Side B if necessary -

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

COMPLIANCE INSPECTION

08-04-99
BRUNSWICK Co.
NOV-ISSUED

Facility Name: DUPONT EI DE NEMOURS & CO CAPE FEAR

EPA ID: NCD 047 369 046

Contact: JEFF RICHARDSON / ULYSSES SLADE 910/3714000

Address: SR 1426 PO BOX 2042

LELAND, N.C. 28451

Status: TSD - LQG

Ownership: DUPONT, INC.

Facility Description: DUPONT CAPEFEAR located along THE CAPE FEAR RIVER in PHOENIX NC. THE COMPANY MANUFACT. TEREPHTHALIC ACID, DIMETHYLTEREPHTHALATE DMT, POLYESTER RESIN AND DACRON POLYSTER FIBER. LARGEST WASTE STREAM IS THE PRECIPITATED ASH.

Waste Generation Processes: WASTE SOLVENTS (METHANOL mixture) (ACETIC ACID & Xylene) TETRACHLOROETHYLENE - AERSOL CANS - AGITENE - FIBERS CHEM LAB WASTE glycol (arsenic) - PAINT WASTE - PRECIPITATOR ASH (CHROMIUM) CONSTRUCTION GARBAGE - Xylene & DMT or TPA - WASTE Glycol & Phosphric Acid - Waste Dowtherm (Benzene) Fluorescent BULBS, Hydrolyzed Resin Videojet WASTE.

Waste Types: D001, D002, D003, D005, D006.

D007, F001, F005, D010, D018.

08-04-99
Brunswick Co.
In Compliance

TSDF INSPECTION FORM - PART 264
SUPPLEMENTAL CHECKLIST FOR FACILITY - SPECIFIC CONDITION

E.I. duPONT de NEMOURS & COMPANY — NCD047369046
Cape Fear Plant — Brunswick County

1. Authorized waste allowed to store (Permit Condition II A.)

✓ Storage in 55-gallon containers and 30-gallon containers:

D001	D005	D008	F002
D002	D006	D009	F003
D004	D007	F001	F005

2. Waste Analysis (Permit Condition II D.)

✓ Documentation that the waste analysis plan is followed as outlined in permit.

3. Inspection Requirement (Permit Condition II F.)

✓ Documentation that the container storage area is inspected per Exhibit F-IV of the permit application.

4. Storage In Container (Permit Condition III)

✓ No more than 136, fifty-five (55) gallon drums and no more than thirty-two (32), thirty (30) gallon drums are allowed in the liquid storage area at any given time.

✓ No container stacking is allowed.

5. ✓ Aisle Space (Permit Condition III E.)

6. ✓ Beyond Compliance

7. ✓ Coating/Sealant

8. ✓ Storage Dates less than one year

EMERGENCY CONTACTS

EMERGENCY	ORGANIZATION/AGENCY	EMERGENCY #
Injury	*First Aid Squad	4079 or 4421
	Plant Doctor - Allen White, PA	395-5413
	New Hanover Regional Medical Center	343-7000
	Columbia Cape Fear Memorial Hospital	395-8100
	Dosher Memorial Hospital	(910) 457-5271
	Leland Rescue Squad	911
	Acme/Delco Riegelwood Rescue Squad	655-2542
Fire/Explosion	**Fire Brigade	Fire Alarm Box
	or, if inoperable,	4421
	Leland Volunteer Fire Department	911
	Navassa Volunteer Fire Department	911
	Acme/Delco Riegelwood Fire Department	655-2542
	Wilmington Fire Department	762-5228
Hazardous Material Release	**Fire Brigade	Fire Alarm Box; Spill or if inoperable, 4079 or 4421
	***Emergency Coordinator	4274
If release exceeds the Reportable Quantity	Bruns. Co. Emergency Mngmt.	(910) 253-4376
	N. C. Div. of Emergency Mngmt.	1-800-858-0368 1-800-662-7956
	National Response Center	1-800-424-8802
	Dept. of Envir. Health & Natural Resources	(910) 395-3900
If spill reaches or is likely to reach navigable waters	U. S. Coast Guard	(910) 343-4895 (910) 256-3469 (910) 256-2615

The U. S. Coast Guard will also notify appropriate agencies as required:
Federal Water Quality Office
U. S. Army Corps of Engineers

Solid Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: JEFF RICHARDSON – DUPONT - CAPE FEAR
Address: SR 1426 P.O. Box 2042
LELAND N.C 28451
EPA ID# NCD 986 187 029

Docket # 99-228
Inspection Date 08-04-99
Facility Type TSD LQG

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

On 08-04, 1999, FLINT WORRELL representing the N.C. Hazardous Waste Section, inspected your facility for compliance with North Carolina Hazardous Waste Management Rules. During that inspection, the following violations were noted:

Citation	Specifics
40 CFR §	265.16 (C) FACILITY PERSONNEL MUST TAKE PART IN AN annual review of THE INITIAL TRAINING required in PARAGRAPH
	(A) of THIS SECTION.
	MR. JOHN WHITE'S TRAINING HAD EXPIRED.

You are hereby required to comply with the noted violation(s) by 10-04, 1999, at which time a reinspection will be performed. If compliance with the violation(s) noted above are not met, pursuant to N.C.G.S. 130A-22(a) and 15A NCAC 13B .0701 - .0707, an administrative penalty of up to $25,000.00 per day may be assessed for violation of the hazardous waste law or regulations.

08-06-99
(Date)

L.F. WORRELL
N.C. Hazardous Waste Section

I, L.F. Worrell LF WORRELL, hereby certify that I have personally served a copy of this Notice on:

DUPONT - CAPE FEAR
(Name)

at SR 1426, P.O. Box 2042 LELAND NC 28451
(Location)

on _____, 19___.

_____
(Recipient Signature)

copies to: field files
central files
Regional Manager

DuPont, Cape Fear Site
D.I. Staff Fax - (910) 371-4755
Voice Contact - (910) 371-4835

Dacron® Intermediates

Fax

To: FLINT WORRELL From: JEFF RICHARDSON

Fax: Phone: 910/371-5082

Phone: Date: 8/16/99

Re: No. of Pages (including cover sheet):

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments:

FLINT –

I'LL HAVE JOHN WHITE FAX YOU A COPY OF HIS TRAINING CERT. ONCE COMPLETES THE CLASS.

THANKS JEFF

Solid Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: JEFF RICHARDSON – DUPONT - CAPE FEAR
Address: SR 1426 P.O. Box 2042
LELAND N.C 28451
EPA ID# NCD 986 187 029

Docket # 99-228
Inspection Date 08-04-99
Facility Type TSD LQG

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

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Citation	Specifics
40 CFR §	265.16 (c) FACILITY PERSONNEL MUST TAKE PART IN AN annual REVIEW OF THE INITIAL TRAINING REQUIRED IN PARAGRAPH
	(A) OF THIS SECTION.
	MR. JOHN WHITE'S TRAINING HAD EXPIRED.

You are hereby required to comply with the noted violation(s) by 10-04, 1999, at which time a reinspection will be performed. If compliance with the violation(s) noted above are not met, pursuant to N.C.G.S. 130A-22(a) and 15A NCAC 13B .0701 - .0707, an administrative penalty of up to $25,000.00 per day may be assessed for violation of the hazardous waste law or regulations.

08-06-99
(Date)

L.F. WORRELL
N.C. Hazardous Waste Section

I, L.F. Worrell LF WORRELL, hereby certify that I have personally served a copy of this Notice on:

DUPONT - CAPE FEAR
(Name)

at SR 1426, P.O. Box 2042 LELAND NC 28451
(Location)

on 8/16, 1999.

C. Richard
(Recipient Signature)

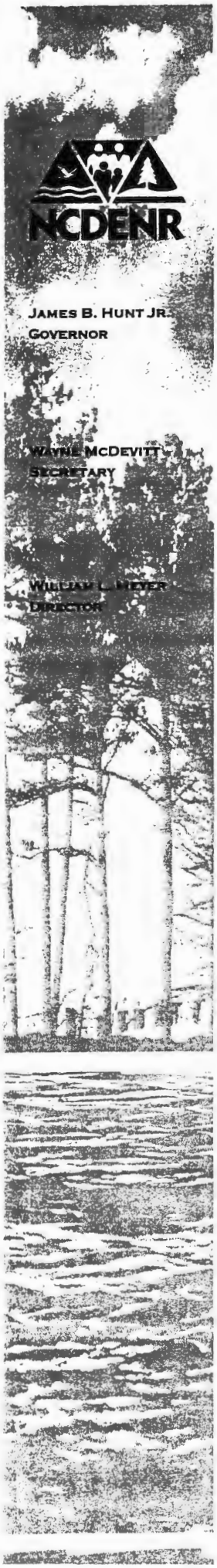
copies to: field files
central files
Regional Manager

II. Wastes Generated On-Site

Waste No.(s)	Waste Name**	Hazard(s)	EPA Code(s)	Basis for Designation
3	Methanol Mixture	Ignitable Listed Toxic (TCLP)	D001 F002 D018	 Benzene
5	Acetic Acid & Xylene	Ignitable Corrosive	D001 D002	Flash Point <140 F pH <2
6	Agitene	Ignitable	D001	Flash Point <140 F
12	Precipitator Ash	Toxic (TCLP)	D007	Chromium
15	Tetrachloroethylene Mixture	Listed	F002	
18	Paint Related Materials	Ignitable	D001	Flash Point <140 F
19	Fibers Chem Lab	Ignitable	D001	Flash Point <140 F
21	Methanol	Ignitable	D001	Flash Point <140 F
24	Waste Glycol	Toxic (TCLP)	D004	Arsenic
30	Construction Garage	Ignitable	D001	Flash Point <140 F
34/35H	Fly Ash-ECP Incinerators	Toxic (TCLP)	D004 D006 D008	Arsenic Cadmium Lead
37	Xylene and DMT or TPA	Ignitable	D001	Flash Point <140 F
56	Waste Glycol & Phosphoric Acid	Corrosive	D002	pH <2

Waste No.(s)	Waste Name**	Hazard(s)	EPA Code(s)	Basis for Designation
57	Freon 12, 22, & or 113 Lube Oil Mixture	Listed	F001	
64 H	Waste Dowtherm	Toxic (TCLP)	D018	Benzene
91H	Used Aerosol Cans	Reactive	D003	Explosive reaction if heated
91L	Liquid, Punctured Aerosol Cans	Ignitable	D001	Flash Point < 140° F
92	Fluorescent Bulbs	Toxic (TCLP)	D009	Mercury
101	Hydrolyzer Resin	Toxic (TCLP)	D018	Benzene
103	Videojet Waste	Ignitable	D001	Flash Point < 140° F

** Name used for internal identification purposes only; all drums have weatherproof labels and are identified in accordance with RCRA and DOT requirements - see sample label at end of this Section.



NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

April 23, 1999

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Jeffrey Richardson
Environmental Specialist
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402-2042

Re: Revised Phase II RCRA Facility Investigation Work Plan
DuPont-Cape Fear Plant
Wilmington, NC
EPA ID # NCD 047 369 046

Dear Mr. Richardson:

The North Carolina Hazardous Waste Section has reviewed Revised Phase II RCRA Facility Investigation Work Plan (revisions submitted December 2, 1998). As a result of this review, the Section has determined that the current version of the plan constitutes an adequate RFI work plan.

DuPont-Cape Fear should begin implementation of the work plan as soon as possible. The facility should also, to the extent practicable, follow the schedule presented in Figure 34 of the plan. If your office has any questions concerning this correspondence, please contact Larry Stanley at (919) 733-2178, ext. 294.

Sincerely,

Peter L. Doorn
Unit Supervisor
Facility Management Branch

cc: Narindar Kumar, US EPA, Region IV
Flint Worrell
Larry Stanley

rc: Jill Burton
Pete Doorn
Kathy Lawson
Chris Olds
Surabhi Shah
Larry Stanley

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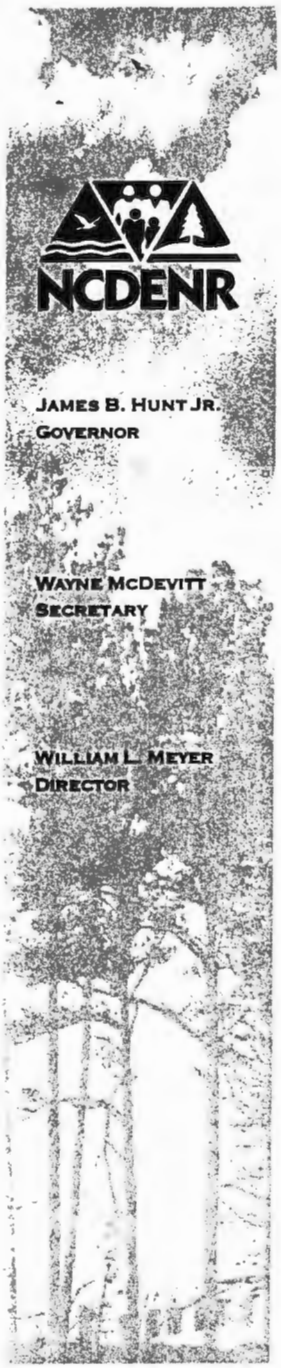
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605



FLINT WELLS

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

June 3, 1999

Mr. Jeff Richardson
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402-2042

RE: RCRA Cleanup Reforms Initiative

Dear Mr. Richardson:

Your facility is listed as a high priority for cleanup on the Resource Conservation and Recovery Act (RCRA) Corrective Action Baseline list of facilities. The United States Environmental Protection Agency (EPA), with input from many States, has developed this Baseline list in response to the Government Performance Results Act (GPRA) which requires federal agencies to develop measures for tracking environmental results. This Baseline list will be used to track progress of EPA, the states, and the listed facilities in achieving corrective action at the 1700+ sites.

The purpose of this correspondence is to make you aware that a trade press briefing will take place in mid June, 1999, to announce a non-regulatory set of reforms to the RCRA Corrective Action program, referred to as the RCRA Cleanup Reforms. The announcement will be made in Washington, D.C., by the Acting Assistant Administrator of EPA's Office of Solid Waste & Emergency Response, Mr. Timothy Fields, Jr. The list of facilities on the Baseline may be released during the press announcement.

The RCRA Cleanup Reforms will focus on increasing the pace of cleanup at the 1700+ high priority facilities. The Reforms are EPA's comprehensive effort to address the key impediments to cleanups, maximize program flexibility, and spur progress with a set of ambitious national cleanup goals. The national cleanup goals apply to 1700+ RCRA sites identified by EPA and the States as high priority for cleanup over the next several years. The goals, set by EPA under the GPRA, are that by 2005, the States and EPA verify and document that 95 percent of the 1700+ high priority RCRA facilities have "current human exposures under control," and 70 percent of these facilities have "migration of contaminated groundwater under control." To ensure that these ambitious goals are achieved, the RCRA Cleanup Reforms establish aggressive national cleanup targets for each of the next several years.

401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

We are giving you this advanced notice of the trade press announcement so that you have the opportunity to prepare for any questions that may arise because your facility is included as one of the facilities in the Baseline.

If you have questions regarding this letter, please feel free to contact me at (919) 733-2178, ext. 294 or Mr. Peter L. Doorn at ext. 218.

Sincerely,

Larry G. Stanley
Facility Management Branch
Hazardous Waste Section

rc: Pete Doorn
Bob Glaser
Karim Pathan

cc: Narindar Kumar, EPA
Flint Worrell
Kevin Garon, CRG

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NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

WILLIAM L. MEYER
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

July 22, 1999

Mr. Jeff Richardson
Environmental Specialist
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402-2042

Re: Modification to Phase II RFI Work Plan Schedule (Letter Dated 7/7/99)
DuPont-Cape Fear Plant
Wilmington, NC
EPA ID # NCD 047 369 046

Dear Mr. Richardson:

The North Carolina Hazardous Waste Section (HWS) grants Dupont-Cape Fear a thirty-day time extension for the commencement of Phase II RFI activities. With the granting of the requested thirty-day extension, the HWS understands that RFI activities will begin on or about September 13, 1999. DuPont's request indicated there should be no impact to the overall project schedule. Consequently, the HWS anticipates that the submittal of the RFI report will not be delayed.

If your office has any questions concerning this correspondence, please contact me at (919) 733-2178, ext. 294.

Sincerely,

Larry G. Stanley
Hydrogeologist
Hazardous Waste Section

cc: Narindar Kumar, US EPA, Region IV
Flint Worrell
Larry Stanley

rc: Pete Doorn
Bob Glaser
Kathy Lawson
Surabhi Shah
Larry Stanley

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401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

NCDENR

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

WILLIAM L. MEYER
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

May 24, 20000

Mr. Rick Love
Environmental Specialist
DuPont Cape Fear Plant
P.O. Box 2042
Wilmington, North Carolina 28402

Re: Time Extension Request
Notice of Deficiency Response
EPA ID # NCD 047 369 046

Dear Mr. Love:

This acknowledges the receipt of the May 9, 2000 letter requesting an extension on the Notice of Deficiency response deadline. We agree to extend the deadline. Please submit the Notice of Deficiency response addendum by August 3, 2000.

If you have any questions, please contact Karim Pathan at (919) 733-2178 extension 228.

Sincerely,

Robert L. Glaser
Unit Supervisor
Facility Management Branch
Hazardous Waste Section

cc: Narindar Kumar, US EPA, Region IV
Flint Worrell

rc: Peter L. Doorn
Robert L. Glaser
A. Karim Pathan
Larry Stanley

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1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

D-1a(1) Description of Containers

Steel 55-gallon and 30-gallon drums are used to store most wastes noted in D-1a above. All steel drums destined for storage are purchased new, pre-numbered and labeled and are used only once to contain a hazardous waste. These drums are triple rinsed with diesel fuel and are then utilized in non-hazardous waste management activities for their remaining useful life and are eventually emptied, cleaned and sold to others. These steel drums are constructed of low carbon steel and meet United Nations specifications. All drums are identified with UN markings to provide identification ease and ensure that each is managed properly. The drums are not lined or otherwise protected against corrosion since they are not used to store corrosive wastes. Corrosive materials are stored in High Density Polyethylene (HDPE) drums that meet UN specifications. These drums are identified with UN markings to provide identification ease and ensure that each is managed properly.

One (1) listed waste one -- Waste No. 3, one (1) ignitable and corrosive waste -- Waste No. 5 and one (1) corrosive waste -- Waste No. 56 are contained in 30 or 55-gallon, United Nation specifications, high density polyethylene drum. All drums are identified with UN markings. The UN plastic drum is a UN approved, reusable container and is used for the corrosive wastes as long as it meets all UN Specifications.

Equivalent or improved UN approved containers will be selected and used, at DuPont's option, whenever appropriate.

D-la(2) Container Management Practices

All liquid hazardous wastes are accumulated by manufacturing and other operating areas in proper, UN specification containers. These containers are labeled in accordance with DOT regulations for hazardous materials; dated when the drums are full; and kept sealed except when wastes are added, removed or during sampling. A minimum, four-inch freeboard is required for all drums to provide for liquid and vapor expansion during subsequent outside exposure. When the drums are filled to that level, those that are accessible from outside are transported to the hazardous waste storage area by a front-end loader. Drums in central manufacturing areas are transported to an outside, paved, drum staging area with a manual, two-wheel drum truck, and then taken to their proper destination with a front-end loader. Hazardous waste drums are secured with a chain during all front-end loader operations. An equivalent or improved drum loading, transporting and unloading system will be selected and used, at DuPont's option, if appropriate.

All liquid wastes (characteristic and listed) are stored on the liquid hazardous waste storage pad. Solid, hazardous wastes are in the Solid Hazardous Waste Storage Area -- see Section D-lb.

All drums are properly labeled and have plant-assigned numbers; if drum leaks or pad spills are observed, all defective drums will be identified, and pad samples will be analyzed for those parameters specified in Section C for the waste(s) in question. Then laboratory analyses indicate the accumulated water is contaminated, smaller quantities of material will be removed from the pad, transferred to proper UN specification containers, labeled and stored in the appropriate pad location. Should the spill quantity exceed the pad's 168-drum storage capability, the contaminated water will be removed from the pad to a bulk tank-truck and shipped to an EPA/State Approved T/S/D facility -- see Section F.

D-1b Containers With No Free Liquids

The maximum inventory of drums containing wastes with no free liquids is not expected to exceed 200 55-gallon UN specification, open top drums with standard drum lids. These drums with tightly secured lids are stored in a 40 ft. by 36.67 ft. area immediately south of the Liquid Hazardous Waste Storage Pad; its relative Site location is shown in Exhibit B-I and its precise location, dimensions, aisle-space requirements, etc. are shown on Exhibit D-II.

Precipitator Ash, Waste No. 12, is the predominantly produced solid hazardous waste that is generated at this Site. This stream is primarily generated during routine clean-out of a process burning facility for maintenance. Waste No. 12 contains no free water and its only RCRA hazard is TCLP-Toxic, Chromium, D007; it is not ignitable, corrosive, or reactive and is compatible with all other waste streams generated at this Site. Since this stream is not corrosive, the drums are not lined or otherwise protected against corrosion during storage. On occasion other drummed, solid hazardous wastes may be generated on site, and are stored in this area prior to shipment at an approved T/S/D facility.

D-lb(1) Description of Containers

UN specification steel, 55-gallon drums are used to store the waste noted above, and all drums are purchased new and ultimately shipped off-Site to an EPA-Approved T/S/D facility. All drums are identified and otherwise managed the same as liquid streams discussed in Section D-la, excluding the four-inch drum freeboard requirement for liquids. Other improved UN specification containers will be selected and used, at DuPont's option, whenever appropriate.

D-lb(2) Container Management Practices

The solid hazardous waste is accumulated in UN specification open top 55-gallon drums with standard drum lids. These containers are dated when the drums are full; kept sealed except when wastes are added, removed or during sampling; and labeled in accordance with DOT Regulations for hazardous materials. When the drums are filled, they are carefully loaded onto a stake-body truck equipped with an electric lift and transported to the Solid Hazardous Waste Storage Area---an equivalent or improved drum loading transporting and unloading system will be selected and used, at DuPont's option, if appropriate. When the truck driver arrives at the hazardous waste storage area and unlocks the gate, the truck is backed adjacent to the Solid Hazardous Waste Storage Area and the drums are carefully unloaded and transferred to a 4-foot by 4-foot 5.125 inch high pallet, via a manual two (2) wheel drum truck, for storage.

The Solid Hazardous Waste Storage Area details are shown in Exhibit D-II. This Area is 40 feet by 36 feet-8 inches, contains up to five (5) rows with a maximum of ten (10) pallets per row, and no more than 4 drums are stored on each pallet---drum stacking is not allowed. Thus, each row contains no more than 40 drums, and the maximum number of stored solid waste containers is 200 drums at any time.

DuPont Cape Fear Plant
P.O. Box 2042
Wilmington, NC 28402

DuPont Cape Fear Plant

Flint Worrel
DENR
225 Green Street
Suite 601
Fayetteville, NC 28301

Dear Mr. Worrel:

In October, 1998, the DuPont Cape Fear Site will be celebrating its 30 year anniversary in the Southeastern North Carolina community! We are proud to be part of a progressive and growing region.

As part of our anniversary celebration, we will be holding a site Open House, complete with tours and refreshments for our families and friends. We would like for you to participate in this event with us. The Open House will be:

Tuesday, October 6, 1998
from 5:00 until 8:00 P.M.

Please RSVP by Thursday, October 1, to Cathy Rawa, at 910-371-4853, if you will be able to attend this event. Please let us share with you how DuPont Dacron* has had such a long standing impact in the community.

Sincerely,

Thomas H. Harris
Dacron* Operations Manager
and Site Manager

Jennifer H. Adams
Site 30 Year Team Leader

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

WILLIAM L. MEYER
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

August 26, 1998

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Jeffrey Richardson
Environmental Specialist
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402-2042

Re: NOD for Revised Phase II RCRA Facility Investigation Work Plan (Dated March 1998)
DuPont-Cape Fear Plant
Wilmington, NC
EPA ID # NCD 047 369 046

Dear Mr. Richardson:

The North Carolina Hazardous Waste Section (HWS) has completed a review of the Revised Phase II RCRA Facility Investigation Work Plan submitted by DuPont-Cape Fear. Due to several technical questions raised by the review process, the HWS cannot accept the current version of the work plan and has issued this Notice of Deficiency (NOD). Comments intended to offer guidance and to aid in the revision of the plan are attached to this NOD.

Three copies of the revised work plan should be sent to the following address within ninety (90) days of the receipt of this letter.

Attn: Ms. Jill E. Burton
NC Hazardous Waste Section
Division of Waste Management
P. O. Box 29603
Raleigh, NC 27611-9603

401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

If your office has any questions concerning this letter or the attached comments, please call me at (919) 733-2178, ext. 294.

Sincerely,

Larry G. Stanley

Larry G. Stanley
Hydrogeologist
Facility Management Branch

enc/comments

cc: Narindar Kumar, US EPA, Region IV
Flint Worrell
Larry Stanley

rc: Pete Doorn
Kathy Lawson
Larry Stanley
Chris Olds
Surabhi Shah

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DuPont - Cape Fear Plant
Leland, North Carolina
EPA ID # NCD 047 369 046

Hazardous Waste Section Comments on
Revised Phase II RCRA Facility Investigation Work Plan

Executive Summary
Page x

1) Should remediation be required at the site; DuPont-Cape Fear must, as required by the current RCRA permit, prepare a "Corrective Action Study/Plan."

Section 1.1
Corrective Action Strategy

2) The Hazardous Waste Section realizes that a conceptual site model (CSM) is not a final product, but rather, is a representation of site conditions that will require revision and refinement. In order to effectively use the conceptual site model as a guide for future investigations, DuPont-Cape Fear should develop and present a CSM as early in the RFI process as possible.

Section 2.1.2.3
Site Hydrogeology

3) Data gathered during the RFI's proposed Phase II will aid in establishing the lateral continuity and lithology of the "Peedee confining unit." The thickness, vertical hydraulic conductivity, and the change in head across this unit should also prove to be important components of the conceptual site model. DuPont-Cape Fear should, at the appropriate point in the site investigation, develop a plan to measure these parameters.

Section 3.2.1.1
Previous Investigation

4) Vinyl chloride has been detected at a significant concentration in monitoring well MW-14. As shown in Table 10, the North Carolina ground-water quality standard (the 2L Standard) for vinyl chloride is 0.015 ppb. The published method detection limits (MDL's) for vinyl chloride determinations by EPA Method 8260B are 0.04 and 0.17 ppb. (These are equipment dependent limits). Consequently, practical quantitation limits (PQL's) of 0.4 and 1.7 ppb should

be achievable by this method. Low PQL's could greatly aid in estimating the distribution of vinyl chloride in the ground water.

Section 3.2.2
SWMU 36--Sludge Field Runoff Overflow Basin

5) SWMU 36-Sludge Field Runoff Overflow Basin is used during periods of excessive rainfall. There is obviously a limit to the capacity designed into the overflow basin and associated system. If the system capacity has been exceeded (during hurricanes, etc.), DuPont-Cape Fear should indicate when the incidents occurred and comment on the likely composition and fate of the released water.

Section 4.2.2.1
Monitoring Well Installation Locations

6) The monitoring wells installed as part of the Phase II investigations will be screened either across the water table or immediately above the "Peedee confining unit." However, the presence of ground-water contamination has been established at some areas of the facility. If significant variations in hydraulic conductivity are identified in the shallow aquifer, then some monitoring wells should be screened across the zone(s) of highest hydraulic conductivity. Wells completed in this manner are necessary to show the extent of ground-water contamination and to document pathways of contaminant migration.

Section 4.2.3.1
Background Metals Soil Analyses

7) Background soil borings should be located in areas likely to be unaffected by past or present facility activities. Some of the locations depicted on Figure 29 are within manufacturing areas. DuPont-Cape Fear should explain the criteria used for the selection of the proposed background locations.

Section 4.3.2
Soil Sampling

8) According to Table 19, soil samples will be analyzed by EPA Method 8270C for selected semivolatile organic compounds. The degradation products of these compounds, if any, are not addressed. In addition, reports of analytical results such as those generated for EPA Methods

8260B or 8270C should include a list of the twenty TIC's (tentatively identified compounds) exhibiting the highest concentrations.

9) Apparently, *Dowtherm* is or has been composed of organic compounds besides diphenyl and diphenyl oxide. For example, a major component of *Dowtherm* E is 1,2-dichlorobenzene (Groundwater Chemicals Desk Reference, 1996). All the Appendix VIII and Appendix IX constituents contained in the *Dowtherm* used at the site should be included in the appropriate lists of target analytes.

Section 4.3.2.4
AOC A--Soil Assessment

10) Depending upon subsurface conditions, the xylenes (*o-*, *m-*, and *p-*) may degrade into several different organic compounds. DuPont-Cape Fear should attempt to identify the degradation products of xylene present at AOC A. If the degradation products are listed in Appendix VIII of Part 261 or Appendix IX of Part 264 (NC Hazardous Waste Management Rules), then DuPont-Cape Fear must investigate these hazardous constituents under the RFI.

Section 5.3.2
Collection of Groundwater Samples

11) According to the EPA's Environmental Investigations and Standard Operating Procedures and Quality Assurance Manual (May 1996), turbidity measurements should be taken to help ensure that a monitoring well has been properly purged. Since DuPont-Cape Fear plans to use low-flow purging techniques, these measurements should be reported along with the other field parameters (i.e., pH, specific conductance, and temperature). Turbidity values of ten NTU's or less are desirable.

Section 7.3
Statistical Evaluation

12) In a memo issued in June 1996, the RCRA staff at EPA's Region IV offices recommended that the background concentration of a naturally-occurring hazardous constituent be determined by calculating the numerical average of the constituent's geochemical analyses. These geochemical analyses should be from biased samples collected at locations unaffected by facility activities or releases. The calculated background concentration includes non-detects evaluated at half the detection limit. Non-detects are defined as constituent concentrations at values less than the practical quantitation limit.

Section 7.4
Determination of Release

13) The Hazardous Waste Section usually considers a release to have occurred when a naturally-occurring hazardous constituent's concentration exceeds two times its background concentration. The two times rule may not apply if two times the calculated background concentration is greater than an appropriate standard (MCL, 2L, soil screening level, etc.). In those cases, the standard should be used when deciding whether or not a release to the environment has occurred.

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF POLLUTION PREVENTION AND ENVIRONMENTAL ASSISTANCE

July 7, 1998

Have Bob d
Flint Review d
return to me
7-9-98
SDP

MEMORANDUM

TO: Larry Perry
Eastern Regional Hazardous Waste Supervisor

FROM: Sharron Rogers
NC Division of Pollution Prevention
and Environmental Assistance

SUBJECT: Compliance Review for Governor's Award Applicants

The Division of Pollution Prevention and Environmental Assistance (DPPEA) is administering the 1997 Governor's Award for Excellence in Waste Reduction. This year's short list of potential winner's includes large and small businesses, as well as state and federal government facilities.

Enclosed for your review are copies of the applications for *Moen, Inc, DuPont Cape Fear Plant, and Dr. Darryl Diefes, DDS* located in New Bern, Wilmington, and Whiteville, respectively. These applicants are semi-finalists and may receive recognition at any of several award levels.

Please review these entries for their technical applicability and compliance history and complete the enclosed Compliance Review Form. We do *not* want site visits or inspections as a result of this request. We would appreciate any comments you have to assist us in the judging process. If there are any pending or recently completed regulatory investigations, please indicate and explain on the form. Please complete the form and return to me by August 4, 1998. Fax copies are welcome, (919) 715-6794. If you prefer to do this electronically, please send me an email note at sharron_rogers@p2pays.org and I will send back a Word 7.0 version of the form for your use.

Thank you for your assistance. Please call me at (919) 715-6526 if you have any questions or comments.

Enclosure

P.O. Box 29569, Raleigh, NC 27626-0569
PHONE 919-715-6500 FAX 919-715-6794 NCWASTE@P2PAYS.ORG

ENVIRONMENTAL COMPLIANCE REVIEW FORM

1997 GOVERNOR'S AWARD FOR EXCELLENCE IN WASTE REDUCTION

Semi Finalist: **DuPont Cape Fear Plant** City: **Wilmington**

1. Waste Reduction Technology (we are interested in your comments)
__✓__Outstanding _____Standard _____Below Standard (please check one)

Comments
had program in place long before Required
Written Plan with annual updates - management committed to
P2 and waste min.

2. Environmental Compliance History
a. Pending non-compliance
____Outstanding __✓__ Standard _____Below Standard (please check one)

Comments

b. Historical non compliance (1991-1997)
____Outstanding __✓__ Standard _____Below Standard (please check one)

Comments
2-16-98 NOV open containers
3-7-95 NOV 4 WO violations, training - Container(hole)

3. Please indicate in the space below any other information not included in this enclosure which would be helpful in evaluating this semi finalist.

4. Do you feel this semi-finalist could be recognized as an award winner?
__✓__Yes ___ No

Comments:

5. Reviewers Name: _____ Date: _____

Fax to: Sharron Rogers, Division of Pollution Prevention and Environmental Assistance
(919) 715-6794 by August 4, 1998

Region 4 Compliance Data Entry Form - Side A

(Rev.8/97) FRO

Submittal Information	Initial By-	Initial Date -	Corrected By-	Corrected Date -
RCRA Comp. Section:	___	__/__/__	___	__/__/__
Received:	___	__/__/__	___	__/__/__
Entered/ Returned:	___	__/__/__	___	__/__/__

FACILITY INFORMATION:

EPA ID Number: NCD047369046

Facility Name: DuPont Cape Fear Works City: Wilmington N.C.

EVALUATION DATA: New: __ Change: __ Delete: __ (___ : Required)

Agency: S Date: Mo. 02 / Day 20 / Year 98 Type: CEI

Control Number Data Entry Personnel

Person: 009 Reason:

Evaluation Comments: (74) 1 : ______

2 : ______

SNC DETERMINATION: If this evaluation resulted in a SNC determination, fill in this block. (NOTE: SNC determinations are SNY/SNN evaluations. The SNY/SNN evaluation can also be submitted later on a separate form.)

Facility is (Check one)
- a SNC (SNY evaluation) __

or-
- no longer a SNC (SNN eval.) __

Date of determination:
Same as above eval.: __ - or - __/__/__

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: __ Type: __ Date (mdy) Determined: __/__/__ Class: __
Priority: __ Branch: __ Person: __ Seq. Number (Data Entry) __
Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__
Reg. Type: __ Reg. Description (30): ______
Comment (72): ______

#__ Agency: __ Type: __ Date (mdy) Determined: __/__/__ Class: __
Priority: __ Branch: __ Person: __ Seq. Number (Data Entry) __
Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__
Reg. Type: __ Reg. Description (30): ______
Comment (72): ______

#__ Agency: __ Type: __ Date (mdy) Determined: __/__/__ Class: __
Priority: __ Branch: __ Person: __ Seq. Number (Data Entry) __
Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__
Reg. Type: __ Reg. Description (30): ______
Comment (72): ______

Continue violation date on Side B if necessary -

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

2-16-98

COMPLIANCE INSPECTION

Facility Name: DuPont Cape Fear

EPA ID: NCD 047 369 046

Contact: Jeffrey C. Richardson - Environmental Leader

Address: State Road 1426

Leland, N.C. 28451

Status: TSDF LQG

Ownership: DuPont

Facility Description: TPA - pellet - Dacron polyester yarn and fibre-thread This Site manufactures terephthalic acid, dimethylterephthalate and DACRON polyester resin and fiber. This site acreage is extensive, approximately 2200 acres and is located next to the Cape Fear River.

Waste Generation Processes: Precipitator ash - Lab Waste - process waste from Continuous Polomerization - Contractor planting - Construction garbage - Fly ash from incinerators - Xylene and DMTore TPA dacron intermediates - Waste Glycol & Phosphonic Acid Fibers Building Spin off of product. Waste Dowtherm when changing filters used aerosol cans. Hydrolyzer Resin from drawoffs.

Waste Types: D001, D002, F003, F002, D018, D007, D004, D006, D008, D003, D009, D018

Facility Name: DuPont Cape Fear Plant ID# NCD047369 040 Pg. 2

Transporters: Tri State Motor Transit
Sentinel Transportation DER 000 000 497

TSDF: Chemical Waste Management Emelle Facility
DuPont Sabine River Works TXD008 029 642

Accumulation Areas: DI Lab, DI Maintenance
Plant Contractor Storage
HMV Shop, Yarn Handling Shop.

Storage Areas: Permit Storage

Waste Minimization:

Deficiencies: Open Containers at two accumulation sites.

Recommendations:
RCRA training – put on one sheet locations & outline where training is located.

Waste Management Specialist: R. F. Warner

Facility Contact: Jeffery Richardson

Date: 2-16-98

Solid Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

ATT. JEFF RICHARDSON

To: DUPONT EI DE NEMOURS & CO CAPE FEAR
Address: SR 1426 PO BOX 2042
WILMINGTON NC 28402
EPA ID# NCD 047 369 046

Docket # 98-083
Inspection Date 2-16-98
Facility Type TSDF LQG

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

On 2-16, 1998, L.F. WORRELL representing the N.C. Hazardous Waste Section, inspected your facility for compliance with North Carolina Hazardous Waste Management Rules. During that inspection, the following violations were noted:

Citation	Specifics
262.34(c) (1)(i)	– A generator may accumulate as much a 55 gallons of hazardous waste or one quart of acutely hazardous waste
	listed in 261.33(e) in containers at or near any point of
	generation where waste initially accumulate, which is
	under the control of the operator of the process generating
	the waste, without a permit or interim status and
	without complying with paragraph (a) of this section provided
	he:
	Complies with Section 265.171, 265.172, and 265.173(a)
	of this chapter,
	265.173 (a) A container holding hazardous waste must always
	be closed during storage, except when it is necessary to add
	or remove waste.

* CORRECTED DURING INSPECTION – (2) OPEN CONTAINERS

You are hereby required to comply with the noted violation(s) by IMMEDIATELY, 19___, at which time a reinspection will be performed. If compliance with the violation(s) noted above are not met, pursuant to N.C.G.S. 130A-22(a) and 15A NCAC 13B .0701 - .0707, an administrative penalty of up to $25,000.00 per day may be assessed for violation of the hazardous waste law or regulations.

2-17-98
(Date)

L.F. Worrell L.F. WORRELL
N.C. Hazardous Waste Section

I, L.F. Worrell, hereby certify that I have personally served a copy of this Notice on:

DUPONT EI DE NEMOURS & CO. at SR 1426, WILMINGTON, N.C. 28402
(Name) (Location)

on _____, 19___.

_____
(Recipient Signature)

copies to: field files
central files
Regional Manager

State of North Carolina
Department of Environment, Health and Natural Resources
Division of Waste Management
Hazardous Waste Section

2-16-98 Update Same as Before

SITE SAFETY PLAN
(HWS-SSP)

Facility Name: Dupont Cape Fear Site
Address: State Road 1426 Leland N.C.
EPA#: NCD 047 369 046
Phone# 910/371-4000
Client Name:
Facility Contact:
Phone#
Health/Safety Contact: Paul Rady
Phone# 910/371-4000
SSP Prepared/Reviewed By: F. Wonnie
Date(s):

B. PROJECT DESCRIPTION

X	TYPE	DATE	X	ACTIVITY	DATE
	CME			INSPECTION	
X	CEI			DRUM/SLUDGE SAMPLING	
	CDI			SOIL/SEDIMENT SAMPLING	
	RFI			GROUNDWATER SAMPLING	
	RFA			SURFACE WATER SAMPLING	
	O&M			AIR SAMPLING	
	SITE INVESTIGATION/ VISIT			OTHER:	
	TECHNICAL ASSISTANCE				

Project Activity Summary: Record Review
Site inspection

(C) EMERGENCY INFORMATION

Ambulance: On Site DuPont Ambulance — Telephone# Great Gate 371-4000
Hospital: New Hanover Regional Medical Center — Telephone#
Police: Brunswick Co. Sheriff — Telephone#
Fire Department: on site / Acme / Delco — Telephone#
Fire and Emergency Signals reviewed:
Site Evacuation plan reviewed:

HAS Emergency Response Spill TERP

(D) FACILITY DESCRIPTION

Manufacturing Process Description: Chemical Plant

Site Topography:
Mountains___ Rivers___ Valley___ Level___ Slopes___ Urban___ Facility___ Other___
Special Access Requirements:

COMPLIANCE Y/(N)
Date: 02-20-98

Inspector# 009

GENERATOR SURVEY

Name: DuPont Cape Fear Works
Address: State Road 1426
Leland N.C. 28451
EPA ID# NCD 047 369 046

Type: (LQG)/SQG
Sector: TSDF
New-Notifer Y/(N)
SIC

Inspected Before? (Y)/N

Received Compliance Assistance? (Y)/N

Compliance Assistance in the form of? HWS Course ✓ When 96 How many 2
or, Contractor, On-site, Phone, Other

How was information /assistance used:

Notification: Y/N (i.e., did they notify as result of this CA?)
Regulatory: Y/N (i.e., waste management changes due to CA?)
Emissions/Discharges: Y/N (i.e., actual reduction, elimination or proper management of waste as the result of CA?)
If yes, list type of waste and volume(s) _____/_____
_____/_____
_____/_____

Have you ever requested Compliance Assistance from this agency under the "Policy on Compliance Assistance for Small Business? Y/(N)

If not in Compliance, why? see NOV

Top management commitment to compliance/waste minimization? (Y)/N

Any community based outreach efforts conducted? (Y)/N If yes,
what? Assists Community education projects and Tech. Assistance

State of North Carolina
Department of Environment
and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary
William L. Meyer, Director

November 26, 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Jeffrey Richardson
Environmental Specialist
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402

Re: Proposed Phase II RFI Work Plan
DuPont-Cape Fear Plant
Wilmington, NC
EPA ID # NCD 047 369 046

Dear Mr. Richardson:

The North Carolina Hazardous Waste Section has reviewed the letter DuPont-Cape Fear submitted on October 13, 1997. In this correspondence, the facility outlined substantive changes to the scope of work presented in the current Phase II RFI work plan submittal. While this revised scope of work appears to be consistent with the objectives of RCRA facility investigations, several of the points presented by DuPont require additional discussion.

The Hazardous Waste Section (Section) encourages the use of site conceptual models. Conceptual models should be an important tool for the efficient assessment, characterization, and remediation of a site. One essential component of the conceptual model is an understanding of the distribution of hazardous constituents in the environment. Section policy emphasizes the full delineation, both vertically and horizontally, of contaminated soil and ground water. A request to deviate from this policy based upon a site conceptual model implies an advanced model which merits a high degree of confidence. Confidence in the predictive aspects of the model is gained during the confirmation process, and confirmation proceeds concurrently with data collection. Therefore, regular updates and refinements of the conceptual model become imperative. Similarly, the communication of this information to the Hazardous Waste Section is important.

The Hazardous Waste Section maintains that the investigation of potential off-site contamination is an important issue at the DuPont-Cape Fear facility. Ground-water samples collected and analyzed in 1991 documented the presence of ground-water contamination at the apparent downgradient boundary of the DuPont facility. While a 1993 sampling event did not produce similar results, samples of saturated soil collected at SWMU 36 (Sludge Field Runoff Overflow Basin) and at SWMU 58 (Past Landfill # 4) contained hazardous constituents at noteworthy concentrations. As originally proposed in the Phase II RFI work plan submittal, future RCRA facility investigations should address possible off-site ground-water and/or surface water contamination.

DuPont-Cape Fear should submit a revised Phase II RFI work plan within ninety (90) days of the receipt of this letter. According to the operating permit in effect at this time, DuPont-Cape Fear must submit a draft RFI report no later than ninety (90) days after the completion of each phase of investigation. If your office has any questions concerning this correspondence, please contact me at (919) 733-2178, ext. 294.

Sincerely,

Larry G. Stanley

Larry G. Stanley
Hydrogeologist
Facility Management Branch

cc: Narindar Kumar, US EPA, Region IV
Flint Worrell
Larry Stanley

rc: Jill Burton
Pete Doorn
Kathy Lawson
Chris Olds
Surabhi Shah
Larry Stanley

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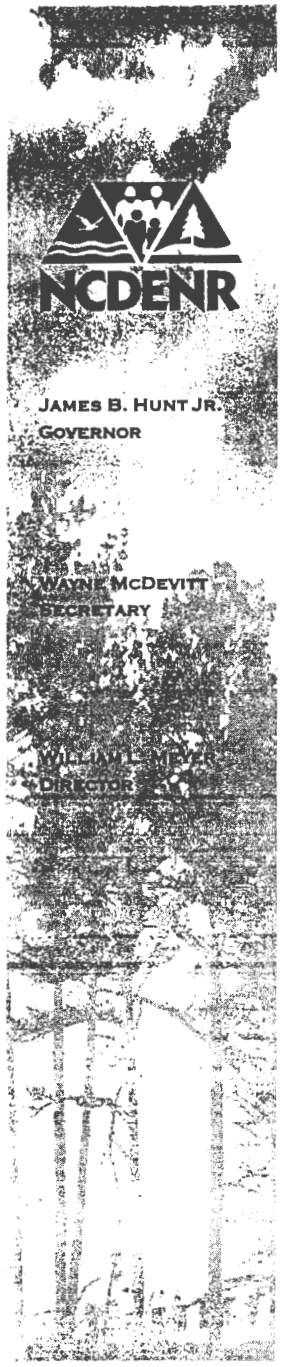


NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

December 31, 1997

Mr. Jeff Richardson
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402

Re: Class 1 RCRA Permit Modification
DuPont-Cape Fear Facility
EPA ID# NCD 047 369 046

Dear Mr. Richardson,

Your request for a permit modification to update personnel changes at the DuPont-Cape Fear plant has been processed as a class one (1) permit modification under 40 CFR 270.42 as referenced in 15A NCAC 13A .0113. To comply with 40 CFR 270.42, you must notify all persons on the enclosed mailing list with the exception of the State and EPA, who have already been notified. Please replace the corresponding pages of the RCRA Part B Application with those enclosed.

Approval of this modification is therefore granted and has been incorporated into your permit. If you have any questions, please contact Mr. Larry Stanley at (919) 733-2178 extension 294.

Sincerely,

James A. Carter, Chief
Hazardous Waste Section

Enclosures

cc: Narindar Kumar, Chief, RCRA Branch, US EPA, Region IV w/enclosures
A. Preston Howard, Jr., Director, Division of Water Quality w/enclosures
Jimmy Varner, Brunswick County Manager w/enclosures
Flint Worrell, Inspector w/enclosures
Larry Stanley

rc: Jill Burton
Pete Doorn
Larry Stanley
Kathy Lawson
Chris Olds

C:\WPFILES\RUTH\LGS\DU123097.ONE

401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605
PHONE 919-733-4996 FAX 919-715-3605

E.I. DUPONT DE NUMEOURS & COMPANY
CAPE FEAR
NCD 047 369 046
MAILING LIST

Mr. Narindar Kumar, Chief
RCRA Branch
Waste Management Divison
US EPA, Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303

Mr. James A. Carter, Chief
Hazardous Waste Section
Division of Solid Waste Management
Post Office Box 29603
Raleigh, North Carolina 27611-9603

Mr. A. Preston Howard, Jr., Director
Division of Water Quality
Department of Environment, and Natural Resources
Post Office Box 29535
Raleigh, NC 27626-0535

Mr. Wade Burgess, Director
Brunswick County Health Services
Government Center
Box 9
Bolivia, North Carolina 28422

Mr. Jimmy Varner
Brunswick County Manager
Government Center
Box 249
Bolivia, North Carolina 28422

Mr. Flint Worrell
Waste Management Specialist
225 Green Street, Suite 601
Fayetteville, North Carolina 28301

DuPont Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402

DuPont Cape Fear Plant

RETURN RECEIPT REQUESTED

Mr. James A. Carter
Section Chief
Hazardous Waste Branch
401 Oberlin Road
Raleigh, NC 27605

SUBJECT
Class I Hazardous Waste Permit Modification
E.I. DuPont de Nemours & Co., Inc. - Cape Fear Site
NCD 047 369 046

Dear Mr. Carter:

The Cape Fear Site of E.I. DuPont de Nemours & Co., Inc. is submitting the following request for a permit modification in accordance with the regulations set forth in 40 CFR 270.42, as adopted in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law (15A NCAC 13A, Rule .0013).

The following Class 1 Permit Modifications are being put into effect per Appendix I of 15A NCAC 13A, Rule .0013 - Classification of Permit Modification as defined in:

A. General Permit Provisions
1. Administrative and informational changes
1. Updating of Roles and Responsibilities listed in the Disaster Control Plan (Section G)

We have enclosed eight (8) copies of this update.

Thank you for your consideration in this matter. If there are any questions, please contact Kristin Beck at (910) 371-5156.

Sincerely,

Richard D. Ferguson
Plant Manager - Cape Fear Site

G-1 General Information

This Contingency Plan is for the DuPont, Cape Fear Site, located near Phoenix, North Carolina. The Cape Fear Site manufactures DACRON(R) Polyester Fiber, Terephthalic Acid and Dimethylterephthalate.

Mr. Jeff Richardson is the primary Emergency Coordinator for the Hazardous Waste Facilities and may be reached at (910) 371-5082 from 8:00 a.m. to 4:30 p.m. on weekdays or at (1 800) 999-6710, access code 992-6599 (by pager) at any time.

Cape Fear stores hazardous wastes in one permitted location which consists of:

1) A Liquid Hazardous Waste Storage Area -- Maximum storage capacity of 168 drums with free liquids, and

2) A Solid Hazardous Waste Storage Area -- Maximum storage capacity of 200 drums with no free liquids.

A general site plan and a full description of these facilities are contained in Section B and a description of the wastes are contained in Section C.

G-2 Emergency Coordinators

If an emergency situation develops at any of the site hazardous waste facilities, the Site Fire Brigades and First Aid Squads will be activated. To assist these personnel, emergency coordinators, in the order listed below, will be called. They will work in conjunction with the Site Disaster Control Organization and have the authority to commit all necessary resources in event of an emergency.

EMERGENCY COORDINATORS

NAME	TITLE	HOME ADDRESS	WORK PHONE NO.	HOME PHONE NO
Jeff Richardson	Environmental Leader	1416 Elgin Street Wilmington, NC	371-5082 800-999-6710 (pager) Access Code 992-6599	799-6908
Kristin M. Beck	Environmental Leader	3901 Cherry Ave. Wilmington, NC	371-5156 910-313-7618 (pager)	791-4456
Jennifer Adams	Environmental Leader	6211-164 Wrightsville Wilmington, NC	371-4853 910-313-7771 (pager)	256-5729
Penny Mahoney	SHEA Leader	1300 Woodfield Ct. Wilmington, NC	371-5232 910-395-9607 (pager)	452-1543

G-3 Implementation of the Contingency Plan

The decision to implement the Contingency Plan depends upon whether or not an imminent or actual incident could threaten human health or the environment. The purpose of this section is to provide guidance in making this decision by providing decision-making criteria.

The Contingency Plan will be implemented whenever there is a fire, explosion, or release of hazardous waste (at any storage location) which could threaten human health or the environment. Emergency contacts will be made in accordance with Exhibit G-1.

The Cape Fear Plant, since the 1968 plant startup, has had an action plan (referred to as the Disaster Control Plan) designed to guide activities following a major emergency to contain or control the emergency and to protect personnel and the environment. The Contingency Plan for the Cape Fear Site is based on the Disaster Control Plan, amended to comply with RCRA regulations.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

May 29, 1997

Ms. Penny C. Mahoney
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402

RE: Class 1 RCRA Permit Modification
DuPont-Cape Fear Facility
EPA ID# NCD 047 369 046

Dear Ms. Mahoney:

Your request for a permit modification to amend the types of waste stored, changes to the contingency plan and updates of personnel for your facility has been processed as a class one (1) permit modification under 40 CFR 270.42 as referenced in 15A NCAC 13A .0113. To comply with 40 CFR 270.42 you must notify all persons on the enclosed mailing list with the exception of the State and EPA, who have already been notified. Please replace the corresponding pages of the RCRA Part B Application with those enclosed.

Approval of this modification is therefore granted and has been incorporated into your permit. If you have any questions, please contact Mr. Christopher Olds at (919) 733-2178 Extension 297.

Sincerely,

James A. Carter, Chief
Hazardous Waste Section

Enclosures

cc: Narindar Kumar, Chief, RCRA Branch, US EPA Region IV
A. Preston Howard, Jr., Director, Division of Water Quality
Flint Worrell, Fayetteville Regional Office
Jimmy Varner, Brunswick County Manager
Christopher M. Olds

rc: Jill E. Burton
Bob Glaser
Larry Stanley

JAC\cmo\13.wp7

Section C

Waste Characteristics

This Section describes the chemical and physical nature of all hazardous wastes generated and managed at this Site, the Waste Analysis Plan philosophy, and waste sampling and analyzing requirements for all waste streams. The Plan objective is to routinely audit all hazardous and non-hazardous wastes to ensure they are segregated and handled in accordance with established procedures. This is to insure wastes are not commingled and unknowingly create waste identification and safety concerns and/or an additional hazardous waste which must be managed in accordance with RCRA.

C-1 Chemical and Physical Analyses (40 CFR 270.14(b)(2)) as adopted in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law (15A NCAC 13A)

All hazardous wastes destined for storage are initially collected at the point of generation in pre-identified, 30 and 55 gal. drums. The containers to be used will be in accordance with United Nations Packaging Standards. The drums will be UN 1A1, UN 1A2, UN 1H1, and UN 1H2 drums. Equivalent or improved UN approved containers will be selected and used, at DuPont's option whenever appropriate. This system is the key to our waste management and characterization programs where all wastes are kept "Virgin" and their hazards are known to insure that they are handled safely. Details regarding storage area, drum handling procedures, etc., are discussed in subsequent Sections of this Application.

The site, on occasion generates new wastes which are characterized to determine whether they are hazardous or non-hazardous. Waste Characterization Forms are developed for all hazardous wastes that are generated on site. The Plant Identification Numbers, Waste Name, Hazards, EPA Hazard Code(s), and Basis for Hazard. The site handles all new wastes in accordance with the regulations and permit as applicable for listed or characteristic wastes. Designations of hazardous wastes that are currently generated on site are:

EXHIBIT F-V

Hazardous Waste Storage Area
Inspection Record Log *

Date	Time	Container & Lid Condition				Salvage Drums? (Yes/No)	Hazardous Waste In Proper Row (Yes/No)	Equipment Available						Facility Condition			Storage Pad Dike OK? (Yes/No)	Ditch Drain Dam Valve closed? (Yes/No)	Corrective Action Req'd.?** (Yes/No or N/A)	Inspector's Name
		Label Present (Yes/No)	Closed (Yes/No)	Leaking (Yes/No)	Corroded (Yes/No)			Drums on Pallets (Yes/No)	Fire Extinguisher (Yes/No)	Telephone (Yes/No)	Eye Wash (Yes/No)	Safety Shower (Yes/No)	Absorbent Yes/No)	Drain Valve Closed (Yes/No)	Fence & Gate Locks (Yes/No)	Warning Sign Up (Yes/No)				

* This inspection is required weekly

** Corrective action required if:

Container Closed is No, or if **Container Leaking is Yes** or if **Container Corroded is Yes.** **COMPLETE EXHIBIT F-VI IF CORRECTIVE ACTION IS REQUIRED.**

If a defect is discovered, first repair efforts must begin within 24 hours, and repairs completed within 5 days. If repairs cannot be completed within 5 days, the waste must be removed from the container. (Record information on copy of EXHIBIT F-VI)

HAZARDOUS WASTE SHIPPING RECORD

EXHIBIT F-VIII

WASTE # _______

WASTE NAME ______________________________

Date Received	Drum No.	EPA Haz. ID No(s).	Generating Area	Generator's Name	Start Date	Drum Size (G)	Date Sampled	Waste Handler	Date Shipped	Loader's Name	Transporter's		Manifest No.	Physical State S or L
											Name	EPA No.		

SECTION G

CONTINGENCY PLAN

The information contained herein is submitted in accordance with the requirements for a Contingency Plan, as contained in 40 CFR 270.14 (b)(7) and 264 Subpart D as adopted in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law (15A NCAC 13A).

Contingency Plan

The intent of Part 264, Subpart D (Contingency Plan and Emergency Procedures), of RCRA is to ensure that facilities that treat, store, or dispose of hazardous wastes have established the necessary planned procedures to follow in the event an emergency situation should arise.

The intent of the requirements under Part 264, Subpart C (Preparedness and Prevention), which was described in Section F is to ensure that the facility is properly designed and equipped to minimize the possibility of accidents and prevent the occurrence of emergency situations. The requirements under Part 264 Subpart D address the actions that are to be taken if an accident should occur.

G-1 General Information

This Contingency Plan is for the DuPont, Cape Fear Site, located near Phoenix, North Carolina. The Cape Fear Site manufactures DACRON ® Polyester Fiber, Terephthalic Acid and Dimethylterephthalate.

Mr. Ulysses M. Slade, Site RHYTHM ® Coordinator is the primary Emergency Coordinator for the Hazardous Waste Facilities and may be reached at (910) 371-4274 from 7:45 a.m. to 4:15 p.m. on weekdays or at (800) 999 6710, Pin Number 995-3324 (by pager) at any time.

Cape Fear stores hazardous wastes in one permitted location which consists of:

1) A Liquid Hazardous Waste Storage Area -- Maximum storage capacity of 168 drums with free liquids, and

2) A Solid Hazardous Waste Storage Area -- Maximum storage capacity of 200 drums with no free liquids.

A general site plan and a full description of these facilities are contained in Section B and a description of the wastes is contained in Section C.

G-2 Emergency Coordinators

If an emergency situation develops at any of the site hazardous waste facilities, the Site Fire Brigades and First Aid Squads will be activated. To assist these personnel, emergency coordinators, in the order listed below, will be called. They will work in conjunction with the Site Disaster Control Organization and have the authority to commit all necessary resources in event of an emergency.

EMERGENCY COORDINATORS

NAME	TITLE	HOME ADDRESS	WORK PHONE NO.	HOME PHONE NO.
Ulysses M. Slade	Site RHYTHM® Coordinator	4201 Fairlawn Dr. Wilmington, NC	371-4274 800-999-6710 (Pager) Pin Number 995-3324	763-2646
Kristin M. Beck	Environmental Leader	3901 Cherry Ave. Wilmington, NC	371-5156 910-313-7618 (Pager)	791-4456

*See Section H-la for Requisite Training.

G-3 Implementation of the Contingency Plan

The decision to implement the contingency plan depends upon whether or not an imminent or actual incident could threaten human health or the environment. The purpose of this section is to provide guidance in making this decision by providing decision-making criteria.

The Contingency Plan will be implemented whenever there is a fire, explosion, or release of hazardous waste (at any storage location) which could threaten human health or the environment. Emergency contacts will be made in accordance with Exhibit G-I.

The Cape Fear Plant, since the 1968 plant startup, has had an action plan (referred to as the Disaster Control Plan) designed to guide activities following a major emergency to contain or control the emergency and to protect personnel and the environment. The Contingency Plan for the Cape Fear Site is based on the Disaster Control Plan, amended to comply with RCRA regulations.

If an emergency situation develops at our Hazardous Waste area (or any other area in which hazardous wastes are accumulated) that justifies implementation of the Contingency Plan, it would be activated by the Disaster Control Plan Procedure. The person discovering the situation would turn in an alarm at the nearest plant fire alarm box and remain at the box to direct the plant Fire Brigade and First Aid Squad to the emergency. The decision that an emergency exists beyond the capability of the Fire Brigade will be made by the Fire Brigade Captain or the ranking supervisor on duty in the affected area. This decision will be transmitted by radio, telephone, or messenger to the Main Gate along with a description of the nature and location of the emergency. The guard on duty will sound the Second Fire Alarm signal over the site fire alarm system.

The original alarm is given by three signals on the plant alarm system indicating the fire alarm box number from which the alarm was turned in, and one (1) of two (2) plant Fire Brigades and the First Aid Squad assemble at this box. The second sounding of the same alarm box number notifies the Emergency and Disaster Team (Exhibit G-II) that an emergency exists and they will proceed to their respective assignments (Exhibits G-III to G-XV). Control Headquarters is established at the Guard House and Field Headquarters is set up at or near the fire alarm box location to direct the overall field efforts. If the situation warrants, affected area is evacuated as signaled by the sounding of the area siren. If other areas might be affected, the Field Headquarters Chief will notify Control Headquarters to sound the Disaster Alert Signal which is nine (9) double taps on the alarm system. When the disaster alarm sounds, a state of emergency exists and the Disaster Control Plan, which is designed to accomplish the same objective of the Contingency Plan is activated.

At the sounding of the disaster signal, personnel accountability procedures come into effect. All welding, burning, or smoking is discontinued in the whole site. Each Area Warden will keep the Disaster Chief informed of any decision to evacuate his/her area. Only phone calls of emergency nature are allowed to be made to the Guardhouse and all road vehicle traffic will stop except for emergency vehicles. Evacuation for each area is signaled by area sirens. Site evacuation is signaled by twenty (20) single taps on the Site Alarm System.

Emergency & Disaster (E&D) Staff Job Descriptions, see Exhibit G-II, refer to job responsibility by job titles rather than individual names since the plant operates on a four (4) shift, 365 day schedule, and consequently different people will be involved, depending on the shift scheduled.

If an emergency involves the Hazardous Waste Storage Area, or any of the hazardous waste accumulation sites, the Emergency Coordinator should be contacted. The other emergency coordinator listed on Page G-3 should be called if the primary cannot be contacted. The Emergency Coordinator, or other members of the Site Environmental Group will assist the Disaster Chief in decisions that may involve notification of Environmental Agencies of a situation that could threaten human health or the environment. Appropriate Federal, State and local agencies, fire, police and emergency departments are listed in the Exhibits for use in notification as necessary.

2. Area wardens will report the results of area accounting to their Rally Spot Warden by phone or the plant radio system. Results are tabulated on a Rally Spot Accountability Form (Exhibit G-XVI).

3. The rally Spot Warden will report results of the rally spot accounting to Central Headquarters by phone or the plant radio system. Results are tabulated on Control Headquarters Accountability Form (Exhibit G-XVI) and reported to the Disaster Chief.

G-4d(2c) Site-Wide Disaster Evacuation Personnel Accounting

This procedure will begin at the sound of the site Disaster Evacuation Signal (20 taps):

1. Employees of all areas will evacuate to that area specified as their rally spot and report their presence to their Area Warden. Area visitors will evacuate with the area they are visiting and stay at that rally point until the "All Clear" is sounded.

2. Area Wardens will report the results of area accounting to Control Headquarters by phone or by the plant radio system.

3. The Rally Spot Wardens will report the results of the Rally Spot accounting to Control Headquarters by phone or by the plant radio system.

4. Plant liaison representative for regular contractor employees and other visitors (such as contract janitorial services, telephone company, Xerox copying machines, etc.) must assure that these individuals are thoroughly briefed and kept up to date on what is expected of them during an area evacuation or any other Plant E&D situation. The vendors/contractors in the Site can vary from time to time with changing Site needs.

EMERGENCY CONTACTS

EMERGENCY	ORGANIZATION/AGENCY	EMERGENCY #
Injury	*First Aid Squad	4079 or 4421
	Plant Doctor - Allen White, PA	395-5413
	New Hanover Regional Medical Center	343-7000
	Columbia Cape Fear Memorial Hospital	395-8100
	Dosher Memorial Hospital	(910) 457-5271
	Leland Rescue Squad	911
	Acme/Delco Riegelwood Rescue Squad	655-2542
Fire/Explosion	**Fire Brigade	Fire Alarm Box
	or, if inoperable,	4421
	Leland Volunteer Fire Department	911
	Navassa Volunteer Fire Department	911
	Acme/Delco Riegelwood Fire Department	655-2542
	Wilmington Fire Department	762-5228
Hazardous Material Release	**Fire Brigade	Fire Alarm Box; Spill or if inoperable, 4079 or 4421
	***Emergency Coordinator	4274
If release exceeds the Reportable Quantity	Bruns. Co. Emergency Mngmt.	(910) 253-4376
	N. C. Div. of Emergency Mngmt.	1-800-858-0368 1-800-662-7956
	National Response Center	1-800-424-8802
	Dept. of Envir. Health & Natural Resources	(910) 395-3900
If spill reaches or is likely to reach navigable waters	U. S. Coast Guard	(910) 343-4895 (910) 256-3469 (910) 256-2615

The U. S. Coast Guard will also notify appropriate agencies as required:
Federal Water Quality Office
U. S. Army Corps of Engineers

*The Cape Fear Plant maintains a well-equipped Medical Section staffed by one (1) full time physician's assistant(PA), and two(2) full-time registered nurses (RN). The PA and nurses are on duty 7:45 - 4:15 Monday through Friday plus being "on call" in the event of an emergency. There is a First Aid Squad on each shift, and the Squad includes EMT personnel and other employees who are familiar with Plant equipment.

**The Cape Fear Plant maintains two (2) Fire Brigades per shift. Members of each Brigade are completely trained in methods used to fight all types of fire and manage spills. Drills are held at regular intervals to maintain a high degree of proficiency. Members of the First Aid Squad respond to all fire alarms.

***Emergency Coordinator is responsible for notification of proper authorities (Coast Guard, Local Authorities, National Response Center, State and Region IV EPA Offices) if the Contingency Plan for the HWM is activated.

DISASTER CONTROL PLAN

DISASTER PLAN ORGANIZATION - E & D STAFF

Disaster Chief - Fibers - N/E on Shifts
Alternate Chief - Fibers - N/E on Shifts

Field Headquarters Chief* - Fibers - N/E; DI - Team Leader

3 Messengers - Fibers - KSI Employees

Fire Alarm Brigade Captain - Fibers - Any Roll
DI - Any Roll

Fire Brigade Members

First Aid Squad Leader - Fibers: Fire Brigade Captain/First Aid Lt.
- DI: Supervisor Manufacturing/First Aid Lt.

First Aid Squad Members

Security and Communications Chief - Yarn Spinning

4 Messengers - Fibers - KSI 3; DI - 1

Transportation Chief - Yarn Product Handling

2 Drivers - Yarn PMOs

Chemical Hazards Checker - Fire Brigade Members

Rally Spot Wardens - Fibers - KSI; DI N/E

Area Wardens - Shifts - designated by each area
Days - designated by each area

Traffic Control Chief - 1 Yarn Lab; 1 Staple Lab

* If Disaster is at Textile Fibers, the Staple Supervisor will be Field Headquarters Chief and the DI Supervisor will assist him. If Disaster is at Dacron ® Intermediates, the roles will be reversed.

Note: Contractors will follow their own E&D procedure.

DISASTER CHIEF - Fibers N/E

1. General - Will be in charge of site emergency operations. He/she will direct operations from Control Headquarters located at the Guard House and will account for all site personnel.

2. Responsibilities

   a. Ascertain the safety of personnel, extent of injuries seriousness of the emergency and, if needed, initiate site evacuation.

   b. Request guard to clear guard house of non-essential people during the emergency.

   c. Evaluate the need for additional assistance from community forces. If such assistance is necessary, the Disaster Chief will fully brief the emergency response personnel on the nature and magnitude of the disaster upon their arrival at Control Headquarters.

   d. Establish Communications with the Site Manager. Describe emergency and steps being taken to regain control.

   e. Audit progress of the control measures taken.

   f. Assess the need for additional curtailment of production with supervision at the scene of the emergency.

   g. Decide when the emergency is over, based on information from supervision in charge of affected area, Fire Brigade Captain, and the Field Headquarters Chief.

   h. Hold a meeting at least quarterly with shift E&D staff to assure each member knows his responsibilities.

   i. Report to the Site E&D Committee as requested on the state of readiness of shifts E&D staff.

FIELD HEADQUARTERS CHIEF - Staple N/E; DI - Shift Leader

1. General - Assistant to the Disaster Chief. Will report directly to the Disaster Chief and will Control operations at the scene of the disaster.

2. Responsibilities

   a. Determine nature and magnitude of the emergency.

   b. Will advise and consult with personnel in the affected area as well as with other E & D Staff members at the disaster scene.

   c. Provide overall coordination of activities at the disaster scene.

   d. Direct the efforts of the Chemical Hazards Checker as indicated by the emergency to determine water, air or chemical hazards.

   e. Request Disaster Chief to call in appropriate emergency response agency to cope with any form of emergency or disaster.

   f. Assist Emergency Response Chief(s) from community forces, if necessary, by serving in an advisory capacity offering information and assistance where needed.

ASSISTANT FIELD HEADQUARTERS CHIEF - Staple N/E; DI Area Leader

1. General - Will assist the Field Headquarters Chief by taking over assignments located in areas too distant for Field Headquarters Chief to control.

2. Responsibilities

   a. Coordinate activities at locations distant from Field Headquarters such as other fires and/or rescue operations.

   b. Coordinate with Disaster Chief and other E & D Staff members as needed.

   c. Account for all personnel assigned to Field Headquarters. (Includes employees and others called in to assist with emergency situation.)

FIRE BRIGADE CAPTAIN - Fibers - Any Roll
DI - Any Roll

1. General - Will be in charge of the Fire Brigade and First Aid Squad. Responsible for directing fire fighting and first aid activities in the general area of alarm box sounded. Fibers (6 Fibers Fire Brigade and 3 Fibers First Aid with Captain or Alternate Captain) will respond to first alarm on all DI alarm boxes. DI brigade captain will direct fire fighting activities.

2. Responsibilities

   a. Coordinate with Field Headquarters Chief.

   b. Control emergency conditions that may arise.

   c. Protect company property, safeguard site personnel and insure continuity of operation.

   d. Advise to what extent buildings should be evacuated, equipment shutdown and power cut off after consulting with personnel of the affected area.

FIRE BRIGADE MEMBERS

Proceed immediately to fire alarm box. Await instructions from your Fire Brigade Captain, Alternate Captain or Fire Lt.

FIRST AID SQUAD LEADER - Fibers: Fire Brigade Captain/First Aid Lt.
- DI: Fire Brigade Captain/First Aid Lt.

1. General - Will direct the First Aid Squad in rescuing and giving first aid. Will be at Field Headquarters with first aid members unless directed elsewhere by the Disaster Chief.

2. Responsibilities

   a. Establish plan for action by consulting with supervision of the effected area and the Field Headquarters Chief.

   b. Rescue efforts will be undertaken only after full analysis of hazards involved to prevent further injuries.

   c. Rescue the injured.

FIRST AID SQUAD MEMBERS

Proceed immediately to the fire alarm box. Await instructions from the First Aid Squad Leader.

SECURITY AND COMMUNICATIONS CHIEF - Yarn Spinning N/E

1. General - Secures site entrances, limits entry to authorized persons, registers all people who enter of leave the site, maintains communication by telephone, PA systems, two-way radios and messengers.

2. Responsibilities

   a. Maintain contact with disaster scene via telephone, radio or messenger.

   b. Provide emergency communications (two-way radio) systems for use both within and outside the site. Insure system is in state of readiness at all times. Verify that all E&D two-way radios are tested monthly.

   c. Coordinate roadblock at site entrance roads. Equipment will be provided by Guard Force.

   d. Allow authorized personnel to cross roadblock.

   e. If required by Disaster Chief, make contacts to secure additional fire fighting and rescue assistance from community emergency response agencies.

   f. Will direct Guard to open Stores building to issue needed materials.

   g. Direct messengers to call only those members of management associated with the disaster. Calls can be made from direct lines in Employment Offices.

   h. Will not make any public statements but will communicate accurate information to the Manager, Administrative and External Affairs.

   i. Direct news media personnel to Training Facility to await press release by Manager, Administrative and External Affairs. Send messenger to wait with press. (Messenger should not make any cements of public statements to the press.)

TRANSPORTATION CHIEF - Yarn N/E

1. General - Coordinates and controls all transportation on site using his drivers as needed.

2. Responsibilities

   a. Identify two drivers and provide necessary training for drivers.

   b. Will coordinate all site vehicles and provide transportation for moving injured or disabled persons, transporting first aid and fire fighting personnel.

   c. Making special vehicles such as trucks and trackmobile available. (Solution Prep or DMT area can provide drivers for trackmobile -site waste handlers can provide larger trucks.

   d. Will call in cranes and bulldozers as needed.

CHEMICAL HAZARDS CHECKER - Qualified Fibers ERT Member

1. Responsibilities

   a. Procure required air sampling equipment (i.e. explosimeter, O2 meter, CO detector, etc.) and transport it to disaster area.

AREA WARDENS

1. General - Will direct area operations, shutting down equipment evacuating and accounting for area personnel. Area warden will wear orange hard hat identified as area Wardens.

2. Responsibilities

   a. Obtain two-way radio when alert signal sounds and keep informed on conditions as they develop.

   b. Sound area evacuation alarm when necessary.

   c. Maintain order in work area at all times.

   d. Prior to reporting to Rally Spot will make sure all personnel have left area.

   e. Initiate search teams for unaccounted personnel

ROLL CALL WARDENS

1. General - Will assist Area Warden in accounting for area personnel.

2. Responsibilities

   a. Obtain Section/Area Roster and Odd-Hour/Visitor Log when Disaster Alert or Evacuation signals are sounded.

   b. Ensure that all area personnel are properly accounted for. Write down names of any person not accounted for and names of those from any other area.

   c. Report results to Rally Spot warden, Or in case of area Evacuation prior to the Disaster Alert, report results to Area Warden or Rally Spot Warden as directed by Area Warden.

RALLY SPOT WARDENS - Fibers KSI Employees; DI N/E

1. General - Will account for all personnel assigned to their Rally Spot location and report results to Control Headquarters. Rally Spot Warden will wear orange hard hat identified as Rally Spot Wardens.

2. Responsibilities

   a. Obtain E&D Personnel Accountability Form (306-14) for his/her designated Rally Spot Location when Disaster Alert or Evacuation signals are sounded.

   b. Account for personnel as reported by Roll Call Wardens of Area Wardens.

   c. Report results to Control Headquarters by plant radio system, by messenger, or by phone.

   d. Remain at Rally Spot until All Clear sounds or otherwise instructed by the Disaster Chief.

MESSENGERS - Fibers KSI Employees; DI N/E

1. General - Provide communications if telephones and radios fail.

2. Responsibilities

   a. Messengers from Staple P&S, S-1 and S-2 Spinning and Staple Finishing will report to the Field Headquarters Chief at the scene of the disaster.

   b. Messengers from Yarn Inspection, DI* and Yarn Spinning will report to the Security and Communications Chief at Control Headquarters. The two messengers from Yarn Spinning will use call-in lists to notify members of management as directed.

   c. Messengers will stand by until released by the Field Headquarters Chief of Security and Communications Chief in the event circumstances indicate they will not be needed.

   * Messenger from DI will drive pick-up from PD to Control Headquarters.

TRAFFIC CONTROL CHIEF - N/E Yarn Staple Labs

1. General - secure the Site entrance roads during E&D situations, both to the plant and construction area.

2. Responsibilities

   a. Report to the Security/Communications Chief at Control Headquarters on the 2nd fire alarm, and wait further instructions. (Need 2 radios)

   b. When instructed, obtain the key from the guard to the storage room at the CERA Building, to get the necessary equipment needed to block the entrance roads. (Orange Hats (2), Orange Safety Vests (2), Road Signs (2), and Orange cone type flashlights for night use (2).)

      - A driver will be dispatched to transport the road guards to their stations.

   c. Go to the Plant Entrance Road 1st and block it, leaving one traffic controller wearing proper safety equipment with a radio to man at that station. All communications will be coordinated with the Security/Communications Chief at Headquarters.

   d. Proceed to the DuPont Construction Entrance Road, and travel approx. (2) tenths of a mile, before setting up the road block. Leave the 2nd road guard wearing the proper safety equipment with a radio to man that station.

      - The driver will continue on through the Construction gate, and return to Headquarters to await further instructions.

   e. The Traffic Control Chief will allow "no one" to leave or enter the site without authorization from the Security/Communications Chief.

      - (Except emergency vehicle from the community who may be assisting with the E&D.)

   f. Security/Communications Chief will inform the Traffic Control Chief when the all clear has sounded, and will dispatch a driver to retrieve the road guards and equipment.

      NOTE: The road blocks will be setup in a manner that allows incoming traffic that will assist with the E&D to enter "SAFELY", and all other traffic to stop "SAFELY".

EMERGENCY & DISASTER PERSONNEL ACCOUNTABILITY

RALLY SPOT NO.__

GROUP	PERSONNEL ACCOUNTED FOR		UNACCOUNTED NAME	EXTRA (NAME)
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		
	___YES	___NO		

EMERGENCY AND DISASTER PERSONNEL ACCOUNTABILITY

CONTROL HEADQUARTERS

RALLY SPOT NO.	PERSONNEL ACCOUNTED FOR	UNACCOUNTED NAME	EXTRA (NAME)
1	____YES ____NO	_____	_____
		_____	_____
		_____	_____
2	____YES ____NO	_____	_____
		_____	_____
		_____	_____
3	____YES ____NO	_____	_____
		_____	_____
		_____	_____
4	____YES ____NO	_____	_____
		_____	_____
		_____	_____
5	____YES ____NO	_____	_____
		_____	_____
		_____	_____
7	____YES ____NO	_____	_____
		_____	_____
		_____	_____

REPORTING FORM FOR EMERGENCY EVENTS

Name / Address / Phone Number of Owner or Operator

Name / Address / Phone Number of Facility

Date / Time / Type of Incident (e.g.: Fire, Explosion, etc.)

Name / Quantity of Material(s) Involved

Extent of Injuries (if any)

Assessment of actual or potential hazards to human health or the environment (if applicable)

Estimated Quantity and Disposition of Material Recovered from the Incident

Send To:

(Name)
Division Director, Division of Waste Management
N. C. Department of Environment, Health & Natural Resources
P. O. Box 27687
Raleigh, NC 27687-7687

(Name)
U. S. EPA, Region IV
Regional Administrator (EPA)
345 Courtland Street, N.E.
Atlanta, GA 30365

RCRA CONTINGENCY PLAN RESPONSE ORGANIZATIONS

MRS. JUDY RICE, Safety Director
Columbia Cape Fear Memorial Hospital
5301 Wrightsville Avenue
Wilmington, N C 28403

MR. EDGAR HAYWOOD,
Administrator
Dosher Memorial Hospital
924 Howe Street
Southport, N C 28461

MR. ART LONG, Chief
Leland Volunteer Fire Department
P. O. Box 176
Leland, N C 28451

MR. DEXTER MATTHEWS, Chief
Solid Waste Section
N.C. Department of Environment,
Health & Natural Resources
P. O. Box 27687
Raleigh, N C 27611-7687

MR. SAM HILL Sr., Chief
Wilmington Fire Department
20 South 4th Street
Wilmington, N C 28401

MR. DAN E. SUMMER
Emergency Management Coordinator
New Hanover County
P. O. Box 1525
Wilmington, N C 28402-1525

MR. S. W. CAMLIN, Fire Chief
Acme/Delco/Riegelwood Fire
Department
P. O. Box 187
Riegelwood, NC 28456

MR. JIM HOBBS, Director
New Hanover Regional Medical Hospital
2131 South 17th Street
Wilmington, N C 28402

MR. JOHN GRIMES, Chief
Leland Rescue Squad
P. O. Box 234
Leland, N C 28451

MR. RONALD HEWETT, Sheriff
Brunswick County
P. O. Box 09
Bolivia, N C 28422

MR. CECIL H. LOGAN
Emergency Management Coordinator
Brunswick County
P O. Box 09 Bolivia, N C 28422

MR. CLARENCE BROWN , Chief
Navassa Fire Department
General Delivery
Navassa, N C 28404

MR. JOHN MOORE
Emergency Management Coordinator
Columbus County
Room 27, 111 Washington Street
Whiteville, N C 28472

SECTION H
PERSONNEL TRAINING

The information contained in this section outlines the personnel training program for DuPont's hazardous waste storage facilities in accordance with the requirements of 40 CFR 270.14 (b) (12) and 264.16 as adopted in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law (15A NCAC 13A).

H-1 Outline of Training Program [40 CFR 270.14 (b) (12), as adopted in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law (15A NCAC 13A).]

H-la Job Titles and Duties

Attached shows the current organization of personnel involved in Hazardous Waste Management (HWM) at Cape Fear. Three DuPont employees coordinate the majority of the HWM Procedures, plans, and programs, and they are: Environmental Leader, Site RHYTHM ® Coordinator (Safety Health and Environmental (SHE) Technician) and Site Waste Resource (SHE Technician). All direct HWM activities are contracted, and the current contract is held by Kinston Service and Inspection Incorporated, Kinston North Carolina; their personnel are directly involved with HWM. Area representatives work with members of the Site Environmental Group for implementation of changes as applicable in their areas.

DuPont management line organization responsibilities involving compliance with RCRA regulations are vested in the Site Responsible Care Leader and Plant Manager. Varied maintenance personnel (i.e. Mechanics, Electricians) work as needed in the waste handling areas, but they are not directly involved in handling waste.

The duties, responsibilities, and requisite training of each position that is directly involved with Hazardous Waste Management are:

Position Title: Environmental Leader

Name: Kristin M. Beck

Hazardous Waste Related Responsibilities and Duties:

- Review and implement all appropriate RCRA regulations.
- Develop Programs to ensure continuous improvement of all waste programs.
- Consult and advise operating areas to insure procedures and programs are in compliance with RCRA.
- Provides engineering liaison and support on liquid and solid waste handling needs.
- Serves as liaison between Site and Site Environmental personnel.
- Provide site specific RCRA training to contract personnel involved in HWM.
- Ensure that Cape Fear Plant wastes are sent to approved treatment, storage, and disposal facilities.
- Reports to Site Responsible Care Leader.

Position Title: Environmental Leader

Requisite Training:

- Annual RCRA Regulations Training
  This training may be offered on-site, by State or Federal Regulatory Agencies or by company(ies) that offer RCRA specific training.

- 40 hour Hazardous Materials First Responder Training or Hazardous Materials Technician Level Training.

- Refresher Hazardous Materials Training.
  This refresher training is to be completed in years subsequent to completion of the 40 hour course. At DuPont's discretion, the refresher course may be either the 8 hour, 16 hour or 24 hour refresher training, or a repeat of the 40 hour course.

- Additional hazardous waste seminars are optional.

- Required DOT training for Hazardous Materials transportation in all modes applicable at the site, on frequency specified in the regulations.

Position Title: Site RHYTHM ® Coordinator

Name: Ulysses M. Slade

Position Responsibilities and Duties:

- Ensure plant compliance with applicable DOT regulations; communicate changes to the site.
- Coordinate, to ensure compliance with RCRA and DOT regulations for off-plant processing of all new waste streams.
- Assign disposal priorities for wastes. Schedule disposal of wastes.
- Provide guidance to the Plant in segregating wastes to minimize disposal costs.
- Keep the Plant appraised of all disposal rules.
- Become familiar with and remain current on all hazardous waste and other applicable waste management regulations.
- Ensure that contractor personnel involved in HWM stay current in Training Program specified in this section.
- Audit container management, hazardous waste storage area and incinerator operations.
- Maintain records and files (or have access) as follows:
  (1) Personnel training;
  (2) Shipment manifests;
  (3) Facility inspection;
  (4) Waste storage; and
  (5) Hazardous waste management facility operating records
- Minimize Du Pont's risk/exposure by:
  (l) Clearing and overseeing all plant contact with disposal contractors;
  (2) Assuring all waste sent off-plant is covered by valid contract and TSD facility has valid RCRA Permit;
  (3) Assuring waste manifest information agrees with information in corresponding disposal contracts; and
  (4) Assuring waste hauler has necessary permits in states requiring them.
- Reports to the Site Responsible Care Leader.

Position Title: Site RHYTHM ® Coordinator

Requisite Training:

- Annual RCRA Regulations Training
  This training may be offered on-site, by State or Federal Regulatory Agencies or by company(ies) that offer RCRA specific training.

- 40 hour Hazardous Materials First Responder Training.

- Refresher Hazardous Materials Training.
  This refresher training is to be completed in years subsequent to completion of the 40 hour course. At DuPont's discretion, the refresher course may be either the 8 hour, 16 hour or 24 hour refresher training, or a repeat of the 40 hour course.

- Additional hazardous waste seminars are optional.

- Required DOT training for Hazardous Materials transportation in all modes applicable at the site, on frequency specified in the regulations.

Position Title: Site Waste Resource

Name: John H. White

- Become familiar with and stay current on all hazardous waste and other waste management regulations.
- Assure the completeness and technical accuracy of Waste Characterization information.
- Forecast waste stream volumes with aid from area representatives.
- Keep Plant Leadership informed of status of waste generation and disposal.
- Maintain records and files associated with waste sampling.
- Prepare biennial report and submit to Department of Environment, Health, and Natural Resources.
- Audits and container storage areas across the site; ensures regulatory compliance at these areas.
- Reports to the Site Responsible Care Leader.

Position Title: Site Waste Resource

Requisite Training:

- Annual RCRA Regulations Training
  This training may be offered on-site, by State or Federal Regulatory Agencies or by company(ies) that offer RCRA specific training.

- 40 hour Hazardous Materials First Responder Training.

- Refresher Hazardous Materials Training.
  This refresher training is to be completed in years subsequent to completion of the 40 hour course. At DuPont's discretion, the refresher course may be either the 8 hour, 16 hour or 24 hour refresher training, or a repeat of the 40 hour course.

- Additional hazardous waste seminars are optional.

Position Title: Contract Waste Handling Supervisor

Position Responsibilities and Duties:

- o Overall operation and maintenance of the hazardous waste facility in a manner prescribed by Du Pont which will be in compliance with all RCRA regulations to insure no adverse environmental impact.
- o Maintains facility operations in compliance with all other permits.
- o Oversees operators and reviews their performance.
- o Ensures that operators are trained to:
  - Operate Hazardous Waste Storage Area, Container and other material handling equipment per DuPont standards, established operating procedures and area requirements;
  - Handle leaks, spills, and emergency situations;
  - Keep records and logs making routine inspections and audits per Standard Operating Procedures; and
  - Maintain Operating Log, Monitoring Records, and Inspection Records.
- o Maintains maintenance records, personnel training records, and all other required records.
- o Notifies Site RHYTHM ® Coordinator in emergency situations.
- o Schedules all maintenance and repairs to structures and equipment for HWM facility.
- o Oversees or ensures oversight of mechanic/electrician doing both scheduled and unscheduled maintenance and repair work to insure no hazardous wastes are released to the environment or expose himself and/or others.
- o Reports administratively to Site Contract Coordinator, receives functional direction from the Environmental Leader.

Requisite Training

- 40 hour Hazardous Materials First Responder Training.
- Refresher Hazardous Materials Training.
  This refresher training is to be completed in years subsequent to completion of the 40 hour course. At DuPont's discretion, the refresher course may be either the 8 hour, 16 hour or 24 hour refresher training, or a repeat of the 40 hour course.
- Annual site-specific RCRA Training offered by the Site Environmental Group.

Position Title: Hazardous Waste Handler

Position Responsibilities and Duties:

The Utility Operator job assignment covers varied activities in Waste Drum Management, Waste Storage Facilities, and on-site HW Transportation designed to provide broad base support to the total Waste Handling Operation.

- Pick up drums of hazardous wastes and deliver them to the Hazardous Waste Storage Area. Understand container identification and handling procedures so that proper disposition of waste will be made. Maintain necessary records of all waste streams by their source and waste name.
- Deliver and properly identify, (using prescribed, pre-printed ID) on request, empty drums to operating areas. Obtain necessary administrative receipts and maintain delivery log of drum deliveries.
- Inspect and log required data on safety equipment in incinerator and drum storage areas.
- Inspect and log required data on waste drum physical conditions in hazardous waste storage area, dike and pad conditions, safety equipment, etc.
- Sample and identify all wastes when required.
- Perform miscellaneous tasks such as:
  - Number waste drums
  - Inventory waste drums
  - Routine housekeeping
- Have knowledge of proper spill containment procedures and clean up chemical leaks/spills using prescribed procedures and/or following special instructions. Report spills/leaks immediately.
- Operate the following equipment as necessary:
  - 2 ton flat dump truck with hydraulic loader
  - Drum tow truck equipped with hook
  - White and Mack trucks hydraulically equipped to handle dinosaur and skid tank containers.
  - Fork lift truck
- Take emergency action on own initiative in accordance with established procedures.
- Notify Waste Handling Supervisor or other Plant authorities as necessary in emergency situations.
- Reports to Waste Handling Supervisor.

o Reports to Waste Handling Supervisor.

Position Title: Hazardous Waste Handler

Requisite Training:

- 40 hour Hazardous Materials First Responder Training.

- Refresher Hazardous Materials Training.
  This refresher training is to be completed in years subsequent to completion of the 40 hour course. At DuPont's discretion, the refresher course may be either the 8 hour, 16 hour or 24 hour refresher training, or a repeat of the 40 hour course.

- Annual site-specific RCRA Training offered by the Site Environmental Group.

H-1b Training Content, Frequency and Technique

The Cape Fear Hazardous Waste management Training Program uses this Part B Hazardous Waste Permit Application as its training guide. Since the direct functions involving Waste Handling are currently under contract, on-the job operator training is conducted by the Waste Handling Contract Supervisor (or his designee). The interface between DuPont and the contractor are the Environmental Leader and Site RHYTHM ® Coordinator who offer guidance and direction to the Waste Handling Contract Supervisor using background information and this Part B Hazardous Waste Permit Application. Using this Permit Application as a guide, the Waste Handling Supervisor is responsible for training his employee in his varied job duties so that he can perform in a manner which will meet both DuPont standards and State RCRA regulations/requirements. Most training and most information is imparted through hands-on job training. However, the Environmental Leader (or designee) is also required to provide annual training specific to wastes being handled on-site, as well as information contained in the Contingency Plan.

H-1c Training Director

The Environmental Leader (or designee) serves as the instructor for the Waste Handling Contract Supervisor and Waste Handlers using the Site Part B Hazardous Waste Application. Training history for each employee is recorded on "Waste Handling Training History Record," Exhibit M-II. The Waste Handling Contract Supervisor and current Waste Handling Personnel have been fully trained at the time of this submittal. In the future, all new personnel will complete this training program before performing their job assignment at the Hazardous Waste Management Facilities. All employees will meet annually for review and update of the training program, and no employee hired to work at this facility will work unsupervised prior to completing this program.

Training records will be kept until closure of the facility for current employees and for three (3) years from the date of an employee's termination.

Emergency Response Training

This training program is designed to ensure that personnel not only handle hazardous wastes in a safe manner but also properly respond to emergency situations. The program trains hazardous waste handling personnel to maintain compliance under both normal operating conditions and emergency conditions.

In addition to the hazardous waste management personnel, a company fire brigade is on standby for response to all fires and other general plant emergencies. This fire brigade is trained both with classroom training methods and fire drills. The classroom training is required for introductory training and as an annual review for each member assigned to the fire brigade. The fire brigade training is not addressed in this Hazardous Waste Training Section.

ORGANIZATION CHART FOR DUPONT (CAPE FEAR) HWM FACILITIES

SITE MANAGER
R. D. Ferguson

SITE RESPONSIBLE CARE LEADER
P. C. Mahoney

ENVIRONMENTAL LEADER
K. M. Beck*

SITE CONTRACT COORDINATOR
M. A. May

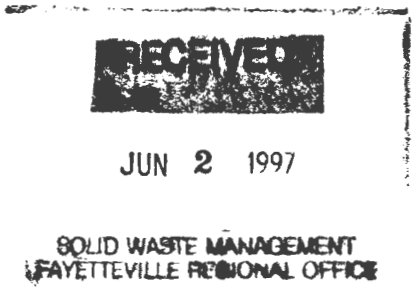
SITE RHYTHM ® COORDINATOR
U. M. Slade*

WASTE HANDLING SUPERVISOR
W. T. Phillips*

SITE WASTE RESOURCE
J. H. White*

WASTE HANDLERS*

* Indicates personnel directly involved with Hazardous Waste Activities.


RECEIVED
JUN 2 1997
SOLID WASTE MANAGEMENT
FAYETTEVILLE REGIONAL OFFICE

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

F. WORRELL

May 5, 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Althea T. Haylett
Dacron Environmental Leader
DuPont-Cape Fear Plant
P. O. Box 2042
Wilmington, NC 28402

Re: NOD for Revised Phase II RFI Work Plan (Dated January 1996)
DuPont-Cape Fear Plant
Wilmington, NC
EPA ID # NCD 047 369 046

Dear Ms. Haylett:

The Hazardous Waste Section (HWS) of the North Carolina Department of Environment, Health, and Natural Resources has completed a review of the Revised Phase II RFI Work Plan submitted by DuPont-Cape Fear. Due to several technical questions raised by the review process, the Section cannot accept the current version of the work plan and has issued this Notice of Deficiency (NOD). Comments intended to offer guidance and to aid in the revision of the plan are attached to the NOD.

The Hazardous Waste Section is aware that DuPont Environmental Remediation Services, as the technical consultant for all DuPont facilities in North Carolina, is attempting to institute a SWMU prioritization project based upon the application of risk management. The Revised Phase II RFI Work Plan does not reflect this use of risk management. The HWS reviewed the work plan as it was submitted and did not take into account the SWMU prioritization project.

P.O. Box 27687,
Raleigh, North Carolina 27611-7687
Voice 919-733-4996

FAX 919-715-3605

Three copies of the amended work plan should be sent to the following address within 90 days of the receipt of this letter.

Attn: Ms. Sharron E. Rogers
Hazardous Waste Section
Division of Waste Management
P. O. Box 29603
Raleigh, NC 27611-9603

If your office has any questions concerning this letter or the attached comments, please contact Larry G. Stanley at (919) 733-2178, Ext. 294.

Sincerely,

Sharron E. Rogers
Remediation Branch Head
Hazardous Waste Section

cc: Narindar Kumar, US EPA, Region IV
Larry Stanley
Flint Worrell

rc: Sharron Rogers
Jill Burton
Bob Glaser
Chris Olds
Larry Stanley

c:\wpfiles\ruth\lgs\dc050597.ltr

DuPont Cape Fear Plant
Leland, North Carolina
EPA ID # NCD 047 369 046

Hazardous Waste Section's Comments on
Revised Phase II RFI Work Plan

Section 2.1.1.1
Regional Climate

1) The Wilmington area was hit by two hurricanes in 1996. Please indicate if these two storms caused or contributed to a release of hazardous chemical constituents from the SWMU's designated as requiring investigation under the RFI (RCRA Facility Investigation). Please document any hurricane-related conditions (i.e., flooding, overflow, wind, etc.) that may have contributed to the release and/or distribution of hazardous constituents at the facility.

Section 2.1.2.1
Site Soils

2) The Site Soil Map (Figure 9) is a poor quality reproduction and is difficult to read. Please supply a map that is legible and on which the soils can be identified. The map should also have a scale that accurately shows horizontal (map) distance.

Section 2.1.2.3
Site Hydrogeology

3) Table 4--Well Construction Details--should be expanded to include the monitoring wells and production wells that existed prior to Phase I of the RFI. The monitoring well system prior to the initial phase of the RCRA facility investigation consisted of nine monitoring wells.

Section 2.1.2.4
Surface Water

4) When the Revised Phase II RFI Work Plan was submitted, the National Wetlands Inventory cited in this plan was considered a preliminary report. The areas north and east of the facility are classified as wetlands. Please note whether the report is currently a preliminary or finalized document.

5) Soil samples were collected during the investigation of two releases at SWMU 1b. The sample locations, the sample depths, the methods of analysis, and the geochemical results should be summarized in the revised RFI work plan. If this information exists in other documents, then these sources may be referenced in the work plan.

Section 3.3
SWMU 12--*Dacron* Intermediates North Polishing Pond

6) Please indicate in the text of Section 3.3 that the location of SWMU 12 is shown on Figure 3.

Section 4.4.3.2
SWMU 1b--Soil Assessment
Vertical Extent of Contamination

7) The Hazardous Waste Section recommends that DuPont-Cape Fear analyze the soil samples collected during the advancement of at least one of the CPT borings (or hand auger borings) scheduled for SWMU 1b. The samples should be analyzed for the chemical constituents listed in Table 20. The facility should collect samples at the planned two-foot intervals and in any obviously contaminated zones. Samples should be collected from the ground surface to the water table.

Section 4.4.3.3
SWMU 2--Soil Assessment
Vertical Extent

8) The Hazardous Waste Section recommends that DuPont-Cape Fear geochemically analyze the soil samples collected during the advancement of the "release location" boring scheduled for SWMU 2 (Figure 28). The facility should collect samples at regular intervals from the ground surface to the water table.

Section 4.4.3.4
SWMU 12--Soil Assessment
Vertical Extent

9) The Hazardous Waste Section recommends that DuPont-Cape Fear analyze the soil samples collected during the advancement of the "release location" boring scheduled for SWMU 12 (Figure 29). The facility plans to collect samples at two-foot intervals from the ground surface to the water table.

Section 4.4.4
Plume Delineation

10) Upgradient and side-gradient monitoring locations are necessary to assess the horizontal extent of a ground-water plume. The facility must identify the hazardous constituents present in the ground water and, when practical, fully delineate the vertical and horizontal extent of each hazardous constituent's plume. Until the hazardous constituents present in the ground water are confidently identified, the facility should analyze ground-water samples for a wide range of volatile organic compounds, semivolatile organic compounds, and inorganic constituents. DuPont Cape Fear attempts to logically focus the target analyte list at each successive phase or stage of the investigation; however, Table 20 apparently implies that VOC's are the only hazardous constituents present in the ground water at the facility.

Section 4.4.4.3--SWMU 1b
Section 4.4.4.4--SWMU 2
Section 4.4.4.5--SWMU 12

11) CPT boreholes designed to investigate hydrogeologic conditions and to collect ground-water samples are proposed for SWMU's 1b, 2, and 12. The facility should estimate the number of boreholes to be advanced at each SWMU and distinguish between "surfical aquifer" and "Peedee aquifer" penetrations. The facility should also approximate the number of ground-water samples to be collected at each SWMU and analyzed at either the temporary laboratory established at the facility or at an off-site laboratory.

Section 4.5
Stage III - Plume Confirmation and Risk Assessment

12) One of the requirements of the RFI is to determine the vertical and horizontal extent of contaminated media associated with specified SWMU's. Unless the health-based standard for a contaminant is less than the practical quantitation limit, the extent of contamination will be defined by the presence of a hazardous constituent at concentrations greater than the PQL (for most organic compounds) or greater than the constituent's background concentration (for inorganic and some PAH compounds).

Several future opportunities will exist for DuPont Fibers to employ risk-based concentration levels and the principles of screening risk assessment. After the completion of the RFI, the facility may propose final remediation, "no further action" decisions, and/or conditional remedies as appropriate solutions for remediation problems. Recently, the EPA released final guidance on the implementation of "no further action" decisions and conditional remedies through the application of risk-based corrective action. A risk-based protocol developed by North Carolina has not been finalized. Until this document is finalized, the Hazardous Waste Section will continue to conservatively interpret data collected to delineate likely pathways of migration and to protect potential receptors.

Risk-based screening levels should be proposed after the completion of the RFI and before the initiation of the Corrective Measures Study (CMS). Risk-based corrective action is best viewed as a transitional step between the RFI and the CMS. However, risk-based assessment may be used by project managers to assist in setting priorities for the various tasks associated with corrective action at a facility.

Section 4.5.2
Monitoring Well Installation

13) Water level data and geochemical data must be collected on an established schedule at regular intervals in order to determine the temporal changes in ground-water flow directions and contaminant plume characteristics. The Hazardous Waste Section is concerned that, given the hydrogeologic characteristics of the site, four shallow monitoring wells and one deep monitoring well may not constitute an adequate monitoring system.

Section 5.0
Methods and Procedures

14) An updated version of Environmental Investigations Standard Operating Procedures and Quality Assurance Manual was released by the EPA's Region IV office in May 1996. The North Carolina Hazardous Waste Section recommends that facilities adhere to the guidance offered in this document.

Section 6.4.2
Comparison of Discrete Sample Values to Upper Tolerance Limits

15) The Hazardous Waste Section will accept the concept of the UTL (Upper Tolerance Limit). However, the decision to allow samples with individual constituent concentrations greater than the UTL to be considered statistically insignificant, unless their number equals or exceeds 5 percent of the sample population, will be decided on a case-by-case basis.

Section 7.2
Selection of Exposure Scenarios Consistent With Land Use

16) The North Carolina Hazardous Waste Section does not accept industrial risk-based exposure scenarios. The mechanisms necessary for the execution of risk-based decisions (i.e., institutional controls) under an industrial exposure scenario are not present in North Carolina. The Hazardous Waste Section can accept residential risk-based exposure scenarios that are compatible with site-specific conditions. An epidemiologist must concur with the facility's input data and interpretations.

Section 7.3.2
Groundwater Protection Screening Levels

17) The EPA's Soil Screening Guidance User's Guide (Publication 9355.4-23; April 1996) selected a default dilution attenuation factor (DAF) of 20 for use with contaminated soil sources up to 0.5 acres in area. The Soil Screening Guidance addressed only contaminant dilution in ground water. If values larger than 20 are applied to any area of the facility, the Hazardous Waste Section recommends that DuPont-Cape Fear collect sufficient data to calculate a site-specific DAF.

Additional Comments

Previous Investigations

18) The analytical results from previously collected soil, basin water, and ground-water samples are summarized in tables and text in the Revised Phase II RFI Work Plan. However, the analytical methods used to analyze the samples are not stated. Please indicate on Tables 6, 7, 8, 9, 11, 12, 13, 14, 15, and 16 or in the appropriate text the methods used to analyze the samples.

Horizontal Extent of Soil Contamination

19) Since the soil contamination associated with releases from SWMU's 19, 26, 36, 55, and 58 apparently extends from the base of each unit to the water table, the vertical extent of contamination has, at least to some degree, been defined. However, the facility is also required to define the horizontal extent of contamination. Mechanisms of release that could contribute to the lateral spread of contamination include overflow out of the basins or a loss of structural integrity around the perimeter of the basins. The Hazardous Waste Section normally requires definitive geochemical data that will define the horizontal extent of soil contamination. This information may also prove useful in the application of risk-based exposure scenarios.

Chemical Degradation Products

20) DuPont-Cape Fear has developed a comprehensive target analyte list based on the waste streams managed at each SWMU. The facility should also attempt to identify any degradation products that may be derived from the chemical constituents on the target analyte list.

RCRA INSPECTION REPORT

FACILITY NAME: DUPONT Co Cape Fear Plant

ID Number: NCD047369046

Type of facility: LQG TSDF

Ownership: DuPont Co.

Contact: Althea Hayleff

Phone number: 910/371-4225

Facility location (address): SR 1426 PO Box 2468

City, State, Zip: Wilmington N.C. 28402

SURVEY PARTICIPANTS: Althea Hayleff / Ulysses M. Slade DuPont
LF Worrell STATE

DATE OF INSPECTION: 2/26/97

PURPOSE OF INSPECTION:
CEI

FACILITY DESCRIPTION:
Chemical plant manuf TPA/DMT dacron polyster thread

Processes: Distillation
Heat treating

Type Waste: Spent Solvents Methanol Mixture, Precipitator Ash
Acetic Acid
Lube Oil and Acetone Mixture, Tetrachloroethylene Mixture
Paint Thinner

Transporters:
Dupont Wilmington DE

TSD's:
Dupont W-DE

Facility Name: Dupont Co. Cape Fear Plant
ID#: NCD047 364 046

Accumulation Areas:

12 area

Storage Areas:

Permit Storage

WASTE MINIMIZATION:

Yes

SITE DEFICIENCIES:

None observed

RECOMMENDATIONS:

Continue New initiatives and community based outreach projects

R. J. Ulmer
Inspector/Reviewer

Heather Hayleff
Facility Contact

12-26-97
Date

COMPLIANCE (Y)/N
Date: 2/26/97

Inspector# 009

GENERATOR SURVEY

Name: Dupont Co. Cape Fear Plant
Address: P.O. Box 2042
SR 1426
EPA ID# NCD 047 369 046

Type (LQG)/SQG
Sector: TSDF / Special Generators
New-Notifer Y/(N)
SIC

Inspected Before? (Y)/N

Received Compliance Assistance? (Y)/N

Compliance Assistance in the form of? HWS Course ✓ When 1996 How many 3
or, Contractor, On-site, Phone, Other

How was information /assistance used:

Notification: Y/(N) (i.e., did they notify as result of this CA?)
Regulatory: Y/(N) (i.e., waste management changes due to CA?)
Emissions/Discharges: Y/(N) (i.e., actual reduction, elimination or proper management of waste as the result of CA?)
If yes, list type of waste and volume(s) ____/____
____/____
____/____

Have you ever requested Compliance Assistance from this agency under the "Policy on Compliance Assistance for Small Business? Y/(N)

If not in Compliance, why?

Top management commitment to compliance/waste minimization? (Y)/N

Any community based outreach efforts conducted? (Y)/N If yes,
what? Response Team TCSP Team Highway [illegible] NC SC [illegible] [illegible]
Community [illegible]
CAT - Community Advisory [illegible]
Schools, [illegible]
[illegible]

N.C. Department of Environment, Health, and Natural Resources

CALL-IN SPILL REPORT

Date: 2/21/97 **Sheet 1 of 1**

Time: 9:30 to 9:45 **X am** ☐ **pm** **Call: Placed** ☐ **Received** X **Returned** ☐

PROJECT: Dupont	**COUNTY:** Brunswick
CONVERSATION WITH: Althea Haylett	**TELEPHONE:** (910) 371-4225
AFFILIATION: Dupont Environmental Affairs	

CONTENT OF CONVERSATION: Ms. Haylett called to report a spill which occurred at the Dupont facility at 9:20 pm, Thursday night. At this time it appears that there was a malfunction in the level alarm transmitter in their Recovered Ethylene Glycol aboveground tank number ML-77A in the fibers portion of their facility. The tank was pumped to overfill conditions and a rough estimate of 40,000 gallons was spilled into and over the containment area. A vacuum truck reportedly has removed approximately 35,000 gallons of the material but the rest remains in the soils. A utility contractor is currently on his way to the site to locate underground utilities and then they will begin excavation around 10:00 am today. The contaminated soils will be placed into roll-off containers and ultimate disposal is planned to be at BFI in Sampson County.

cc: WiRO - GWS, Flint Worrell - DSHWM

Filed By: Bruce R. Parris

S:\GWS\PARRIS\NONUST\DUPONTEG.SPL 2/21/97

N.C. Department of Environment, Health, and Natural Resources

SPILL SITE VISIT REPORT

Date: 2/21/97 **Sheet 1 of 2**

Time: ♦ **am** ♦ **pm**

PROJECT: Dupont - Cape Fear Site (2/20/97 Ethylene Glycol Spill)	**COUNTY:** Brunswick
SITE VISIT WITH: Penny Mahoney (phone number attached) and others.	**TELEPHONE: (910) 371-5232**
AFFILIATION: Dupont, Environmental Affairs	

OBSERVATIONS/CONVERSATIONS: Seth Chipman and I went out to Dupont to observe the clean-up activities on-going from an ethylene glycol spill which occurred a 9:20 pm on 2/22/97. The spill occurred at the Recovered Ethylene Glycol Tank (ML-77A) in the Fibers production portion of the plant.

Based on the input rate into the tank, the use of product from the tank, and the time at which the overfill occurred, Dupont calculates the loss at approximately 40,000 gallons. They were able to pump approximately 35,000 gallons from the containment area and the surrounding spill area into tankers. The release moved through the gravel bottom of the containment area and out to the surrounding area. It flowed down to a drainage ditch and out one of the release valves which is normally closed but was open for some reason. The discharge then migrated to another valved area which leads to their wastewater stream to their treatment area and then to the Cape Fear River. That valve was thought to be off but it was actually partially open. When the spill was discovered, all valves were shut off but a quantity of the spill did reach the Cape Fear River. Based on the concentrations of ethylene glycol from samples which they took at the outfall, it is estimated that 3000 pounds of the material discharged to the Cape Fear River. They are currently digging up effected soils in the spill area and will be performing sampling to determine if they have excavated to clean soils. I informed them that we had contacted the Coast Guard and that I would be passing this information on to the Water Quality Section as well. Penny Mahoney said that Dupont had not notified those groups because they did not exceed the Federal Reportable Quantities in their release to the river. I raised some questions over whether that was accurate or not. Their total release was 40,000 gallons. She said that since they had managed to collect 35,000 gallons of the release and since only 3000 pounds of the material had reached the river that it did not exceed the reportable quantity. I stated that the initial release was 40,000 gallons and that it was our policy to share information with other agencies and sections which may have some regulatory interest in any spill. I told them that they would be receiving a Notice of Violation (NOV) for the spill under the Oil Pollution and Hazardous Substances Control Act of 1978 (143-215.75 et seq). This would require them to cease the discharge, which they already have accomplished, and return the area to pre-spill conditions. If they find groundwater contamination during the sampling which they will need to do during their cleanup efforts, then I will be sending them a NOV-2L. The NOV-2L will require them to also assess the vertical and horizontal extent of soil and groundwater contamination as well as prepare a corrective action plan. I discussed the clean-up levels of the soils with them. Basically, I

PROJECT: Dupont - Cape Fear Site DATE: 2/21/97

told them that they should approach their soil clean-up levels based on three things; health based risks, leachate/groundwater impact above 2L standards, and clean-up to background levels. Essentially, if the soils could impact groundwater, then the clean-up level should be to a level that will prevent leaching of that material in soils from causing concentrations of ethylene glycol in groundwater above the 2L standard of 7000 ppb. They could choose to clean-up the soils to background levels which would be below detection limits since it is not a naturally occurring substance. Penny asked about using background samples from parts of the plant that could possibly have ethylene glycol in them from historically small impacts. I told her that this was the result of a pollution incident so those levels could not be considered background. If they wanted background concentrations then they should sample from an area which was probably never impacted, or just use below detection limits as the target since ethylene glycol isn't a naturally occurring compound in North Carolina. I also talked about their using a health based standard for clean-up but told them that since we are not really a health risk agency I would refer to potential impacts to groundwater. Health based risk standards would have to be derived from Epidemiology and Dupont's recommendations. Dupont will keep in close contact with me regarding the clean-up of this release.

I spoke with Flint Worrell over the phone regarding the initial telephone report of this release. He said that it was not a "hazardous waste" by their definitions and that they probably wouldn't have anything to do with this incident. I requested guidance from him regarding clean-up levels of the soils since it is not a strict "petroleum" substance but is a toxic substance according to the EPA register. Flint said he would get back with me after he consulted with his folks in Raleigh. Later, I checked a voice mail message from Flint which indicated that they did not really have a lot of guidance regarding clean-up levels in soils for this substance. They did not have a problem with Dupont's plans for disposal of the soils at the BFI landfill in Sampson County.

The above-ground tank sits in a cinderblock containment area which has a gravel bottom. The above ground tank reportedly has a low level alarm, a high level alarm, and a very high level alarm in the scrubbers located above the tank (redundancy for safety). For reasons unknown at this time, the high alarm failed and when the scrubber alarm went off, personnel did not note any obvious problems so the alarm was apparently ignored. The tank subsequently was overfilled. The tank contained "refined" ethylene glycol which comes from their process. They use virgin product in their process and then refine the ethylene glycol back out for reuse in the process again.

cc: WiRO - GWS, WQS; Flint Worrell - DSHWM Filed By: Bruce R. Parris

N.C. Department of Environment, Health, and Natural Resources

Telephone Log

Date: 2/24/97 **Sheet 1 of 2**

Time: 1:35 to 1:50 ☐ am x pm **Call:** **Placed** ☐ **Received** ☐ **Returned** X

PROJECT: Dupont 2/20/97 Ethylene Glycol Spill	**COUNTY:** Brunswick
CONVERSATION WITH: Penny Mahoney	**TELEPHONE:** (910) 371-5232
AFFILIATION: Dupont Environmental Affairs	

CONTENT OF CONVERSATION: Penny called to express concerns which have come up at Dupont regarding the NOV I stated I would be writing them during my visit to the spill site on 2/21/97. Dupont doesn't understand why they will be receiving an NOV or under what regulations we'll be justifying it. I first pointed out that whether or not they get an NOV depends upon whether or not my supervisors, Charlie and Rick, will sign it. I run the NOVs by them before they get sent out. Secondly, the NOV would be under the Oil Pollution and Hazardous Substances Control Act of 1978 under the North Carolina General Statutes. Those regulations, 143-215.75 et seq, make it illegal to discharge, either willful or unintentionally, "oil" or hazardous substances above the reportable quantity to the lands or waters of the state. She said that Dupont has never received an NOV from our office before and they have dealt with many similar spills where they have reacted quickly and proactively. Dupont thinks it would be inconsistent for us, and non-productive for us, to NOV them now. They also do not consider that this incident was a release above the reportable quantity. I said that they lost control of 40,000 gallons of the substance and that some of it had entered the river. She said that the quantity which left the site, via the river was below the reportable quantity and that the majority of the substance had been contained. I stated that the containment area had not functioned because it has a gravel and soil bottom which was effected by the spill and that even though they had managed to remove 35,000 gallons of the spill, that it was a spill and that the other 5,000 gallons had impacted soils both inside and outside of the containment area. She said Dupont does not consider it a release unless it leaves their property above the reportable quantity. Additionally, the containment area was constructed and in accordance with common procedures thirty years ago so it is a containment area. They are excavating the soils and will bring the containment area up to modern design. Dupont also feels that the NOV would be essentially uncalled for because they had notified us of the spill as a courtesy gesture even though they didn't really have a release according to their definitions. I told them that their definitions were not in accordance with the rules. They were required to notify us of a release. I also stated that I wanted to see all of the sampling results from the excavation results when they have finished because if there is soil contamination near the groundwater or they find groundwater to be contaminated they will be subject to an NOV under 15A NCAC 2L and would be required to assess the horizontal and vertical extent of soil and groundwater contamination as well as prepare a corrective action plan under those rules. She said that although they have not completed the excavations yet, their data indicates that they are close to removing all the effected soils. I told her I need that data for my records so that I can make certain that all of the soils which were effected have been removed. She said that Dupont will be cleaning up all of the effected soils.

PROJECT: Dupont 2/20/97 Ethylene Glycol Spill DATE: 2/24/97

I told her that the 143-215.75 et seq required them to essentially restore the area to pre-spill conditions. Again Dupont does not believe that they had a "release" because; most of it was in the containment area; they pumped out most of it into tankers; the majority of the spill was contained on their property; and the amount which entered the river was below the reportable quantity. I assured her that the Division routinely issues NOVs for similar spills at other sites all the time and that our rules define it as a release. If they haven't received NOVs from our office in the past then perhaps it was due to their proactivity in the clean-up efforts but that the other incidences were releases as well. I told her that since this was a 40,000 gallon release that I thought it was important that they receive an NOV, on paper, notifying them of the violation and their requirements. However, I stated that I routinely discuss these situations with Charlie and Rick before writing an NOV for their signature and that I would bring Dupont's concerns to that conversation when it occurred.

cc: WiRO - GWS, WQS Filed By: Bruce R. Parris

Cape Fear Plant
Wilmington, North Carolina
February 28, 1996

TO: R. J. BURGER
F. W. DAVIS
A. T. HAYLETT
J. G. RICHARDSON
J. H. WHITE

FROM: S. MOORE

1995 ANNUAL HAZARDOUS WASTE REPORT

-12003-CFP REV. 8/89

DUPONT

Cape Fear Plant
P.O. Box 2042
Wilmington, North Carolina 28402

February 28, 1996

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

N.C Department of EHNR
Solid Waste Management Division
Hazardous Waste Section
Attn: Carol Walker
P.O. Box 27687
Raleigh, NC 27611-7687

1995 Annual Hazardous Waste Report
E. I. Dupont De Nemours & Co., Cape Fear Plant
EPA ID No, NCD047369046
Ref: Your 12/4/95 letter to us, same subject

Dear Ms. Walker:

As requested, attached is our 1995 Annual Hazardous Waste Report signed by our Site Safety & Environmental Leader, F. W. Davis. This report includes all "Subpart C" hazardous wastes that were generated and stored on-site for subsequent handling by an off-site EPA approved T/S/D facility.

Also, enclosed in a separate envelope is the revised Closure Cost Estimate for our site.

Should you have any questions please contact Stephanie Moore, Safety, Health & Environmental (SHE) Technician on (910) 371-4227.

Sincerely,

Frank W. Davis

Frank W. Davis
Site Safety & Environmental Leader

FD:sm

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SI NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
EI P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM **IC**

IDENTIFICATION AND CERTIFICATION

INSTRUCTIONS: Read the detailed instructions beginning on page 9 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I Site name and location address. Complete A through H. Check the box ☐ in items A, C, E, F, G, and H if same as label; if different, enter corrections. If label is absent, enter information. Instruction page 10.

A. EPA ID No. Same as label ☐ or → NCD047369046

B. County BRUNSWICK

C. Site/company name Same as label ☑ or →

D. Has the site name associated with this EPA ID changed since 1993? ☐ 1 Yes ☑ 2 No

E. Street name and number. If not applicable, enter industrial park, building name, or other physical location description. Same as label ☐ or → STATE ROAD 1426

F. City, town, village, etc. Same as label ☐ or → 5 MILES NORTH OF LELAND

G. State Same as label NC

H. Zip Code Same as label 28451-

Sec. II Mailing address of site. Instruction page 10.

A. Is the mailing address the same as the location address? ☐ 1 Yes (SKIP TO SEC. III) ☑ 2 No (GO TO BOX B)

B. Number and street name of mailing address P.O. Box 2042

C. City, town, village, etc. WILMINGTON

D. State NC

E. Zip Code 28402-

Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instruction page 10.

A. Please print: Last Name MOORE First name STEPHANIE M.I.

B. Title SAFETY HEALTH & ENVIRONMENTAL (SHE) TECHNICIAN

C. Telephone 910 371-4277 Extension

Sec. IV "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties under Section 3008 of the Resource Conservation and Recovery Act for submitting false information, including the possibility of fine and imprisonment for knowing violations."

A. Please print: Last Name DAVIS First name FRANK M.I. W.

B. Title SITE SAFETY & ENVIRONMENTAL LEADER

C. Signature Frank W. Davis

D. Date of signature 02 28 96 (MO. DAY YR.)

Over

FORM IC

EPA ID NO: NCD 047 369 046

Sec.V - Generator Status. Instruction pages 10, 12.

A. 1995 RCRA generator status (CHECK ONE BOX BELOW)	B. Reason for not generating (CHECK ALL THAT APPLY)	
☑ 1 LQG	☐ 1 Never generated	☐ 5 Periodic or occasional generator
☐ 2 SQG SKIP to SEC. VI	☐ 2 Out of business	☐ 6 Waste minimization activity
☐ 3 CESQG	☐ 3 Only excluded or delisted waste	☐ 7 Other (SPECIFY COMMENTS IN BOX BELOW)
☐ 4 Non generator (Continue to Box B)	☐ 4 Only non-hazardous waste	

Sec.VI - On-Site Waste Management Status. Instruction pages 13, 14.

A. Storage subject to RCRA permitting requirements	B. Treatment, disposal, or recycling subject to RCRA permitting requirements	C. RCRA-exempt treatment, disposal, or recycling
3	1	1

Sec.VII - Waste Minimization Activity during 1994 or 1995. Instruction pages 14, 15.

A. Did this site begin or expand a source reduction activity during 1994 or 1995?	B. Did this site begin or expand a recycling activity during 1994 or 1995?	C. Did this site systematically investigate opportunities for source reduction or recycling during 1994 or 1995?
☑ 1 Yes	☑ 1 Yes	☑ 1 Yes
☐ 2 No	☐ 2 No	☐ 2 No

D. Did any of the factors listed below delay or limit this site's ability to initiate new or additional source reduction activities in 1994 or 1995? (CHECK YES OR NO FOR EACH ITEM)

Yes	No		
☑ 1	☐ 2	a.	Insufficient capital to install new source reduction equipment or implement new source reduction practices
☑ 1	☐ 2	b.	Lack of technical information on source reduction techniques applicable to the specific production processes
☑ 1	☐ 2	c.	Source reduction is not economically feasible: cost savings in waste management or production will not recover the capital investment
☐ 1	☑ 2	d.	Concern that product quality may decline as a result of source reduction
☐ 1	☑ 2	e.	Technical limitations of the production processes
☐ 1	☑ 2	f.	Permitting burdens
☐ 1	☑ 2	g.	Source reduction previously implemented - additional reduction does not appear to be technically feasible
☐ 1	☑ 2	h.	Source reduction previously implemented - additional reduction does not appear to be economically feasible
☐ 1	☑ 2	i.	Source reduction previously implemented - additional reduction does not appear to be feasible due to permitting requirements
☐ 1	☐ 2	j.	Other (SPECIFY COMMENTS IN BOX BELOW)

E. Did any of the factors listed below delay or limit the site's ability to initiate new or additional on-site or off-site recycling activities during 1994 or 1995? (CHECK YES OR NO FOR EACH ITEM)

Yes	No			Yes	No		
☐ 1	☑ 2	a.	Insufficient capital to install new recycling equipment or implement new recycling practice	☐ 1	☑ 2	g.	Technical limitations of production processes inhibit shipments off-site for recycling
☐ 1	☑ 2	b.	Lack of technical information on recycling techniques applicable to this site's specific production process	☑ 1	☐ 2	h.	Technical limitations of production processes inhibit on-site recycling
☐ 1	☑ 2	c.	Recycling is not economically feasible: cost savings in waste management will not recover the capital investment	☐ 1	☑ 2	i.	Permitting burdens inhibit recycling
☐ 1	☑ 2	d.	Concern that product quality may decline as a result of recycling	☐ 1	☑ 2	j.	Lack of permitted off-site recycling facilities
☐ 1	☑ 2	e.	Requirements to manifest wastes inhibit shipments of off-site for recycling	☐ 1	☑ 2	k.	Unable to identify a market for recycled materials
☐ 1	☑ 2	f.	Financial liability provisions inhibit shipments off-site for recycling	☑ 1	☐ 2	l.	Recycling previously implemented - additional recycling does not appear to be technically feasible
				☐ 1	☑ 2	m.	Recycling previously implemented - additional recycling does not appear to be economically feasible
				☐ 1	☑ 2	n.	Recycling previously implemented - additional recycling does not appear to be feasible due to permitting requirements
				☐ 1	☐ 2	o.	Other (SPECIFY COMMENTS IN BOX BELOW)

Comments:

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S NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
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E P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18. PLANT WASTE #3- SPENT HALOGENATED SOLVENT; METHANOL MIXTURE, LABORATORY WASTE

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
F002 D001 D018 NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	M	A 94	2	B 202	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
3610.0	3329.0	☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
M		M	

Sec. III A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1	LAD 001 890 367	M OH1	2	4429.0
Site 2		M		

Sec. IV A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
W W W W	☐ 1 Yes ☐ 2 No			

Comments:

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DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
E P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #5 - IGNITABLE SOLVENT; ACETIC ACID + XYLENE MIXTURE, LABORATORY WASTE

B. EPA hazardous waste code Page 19. D001, D002, NA, NA, NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code Page 19 / System Type	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	1 / M	A 94	1	B 2003	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
0.0	830.0	1 / □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ~~□ 2~~ No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
M		M	

Sec. III

A. Was any of this waste shipped off-site in 1995 Instruction page 22. □ 1 Yes (CONTINUE TO BOX B) ~~□ 2~~ No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1		M		
Site 2		M		

Sec. IV

A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO BOX B) ~~□ 2~~ No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
W W / W W	□ 1 Yes □ 2 No			

Comments:

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DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
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WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18.
PLANT WASTE # 6 - IGNITABLE SOLVENT LUBE OIL AND ACETONE MIXTURE FROM PARTS CLEANING AND DEGREASING OPERATIONS

B. EPA hazardous waste code Page 19.
D001 NA
NA NA NA

C. State hazardous waste code Page 19.

O. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	[M]	[A] 19	1	[B] 2006	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
2045.0	1330.0	1 / . □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]	.

ON-SITE PROCESS SYSTEM 2

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]	.

Sec. III

A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☒ 1 Yes (CONTINUE TO BOX B) □ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1	LAD001890367	[M] 041	2	1620.0
Site 2		[M]		.

Sec. IV

A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
[W] [W] [W] [W]	□ 1 Yes □ 2 No	.	.	.

Comments:

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DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
E P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18.
PLANT WASTE #12 - PRECIPITATOR ASH FROM INCINERATOR OPERATION

B. EPA hazardous waste code Page 19.
D009 NA
NA NA NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	[M]	[A] 74	1	[B] 303	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
4500.0	310.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☑ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]	

ON-SITE PROCESS SYSTEM 2

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]	

Sec. III

A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☑ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1	ALD 000 622 464	[M] 061	1	1400.0
Site 2		[M]		

Sec. IV

A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO BOX B) ☑ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
[W] [W] [W] [W]	☐ 1 Yes ☐ 2 No			

Comments:

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DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
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U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18. PLANT WASTE #15 - SPENT HALOGENATED SOLVENTS; TETRACHLOROETHYLENE MIXTURE, LABORATORY WASTE

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
F002 NA / NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	[1] / [M]	[A] 94	1	[B] 202	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
17687.0	10850.0	1 / . □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]	.	[M]	.

Sec.III A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☒ 1 Yes (CONTINUE TO BOX B) □ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1	LAD 001 890 367	[M] 041	2	17682.0
Site 2		[M]		.

Sec. IV A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
[W] [W] / [W] [W]	□ 1 Yes □ 2 No	.	.	.

Comments:

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U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #18- SPENT NON-HALOGENATED SOLVENT PAINT THINNING LIQUID

B. EPA hazardous waste code Page 19. D001 NA NA NA NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	[M]	[A] 21	1	[B] 21	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
1230.0	2140.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]		[M]	

Sec.III

A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1	LAD 001 890 367	[M] 04 1	2	2152.0
Site 2		[M]		

Sec. IV

A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
[W] [W] [W] [W]	☐ 1 Yes ☐ 2 No			

Comments:

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1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #21- SPENT METHANOL, FLAMMABLE LIQUID

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
D001, NA, NA, NA, NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2821	M	A37	1	B219*	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
827.	0.0	1 ____.____ □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
M	.____	M	.____

Sec.III

A. Was any of this waste shipped off-site in 1995 Instruction page 22. □ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1		M		.____
Site 2		M		.____

Sec. IV

A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
W ____ W ____ W ____ W ____	□ 1 Yes □ 2 No	.____	____.____	.____

Comments:

* I.H. B219 - SPENT ORGANIC LIQUID FROM POLYESTER PRODUCTION

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U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18.
PLANT WASTE #24 - SPENT ETHYLENE GLYCOL

B. EPA hazardous waste code Page 19.
D004 NA
NA NA NA

C. State hazardous waste code Page 19.

D. SIC code Page 19. 2821

E. Origin code Page 19: 1
System Type M

F. Source code Page 20. A 87

G. Point of measurement Page 20. 1

H. Form code Page 20. B 2219*

I. RCRA - radioactive mixed Page 20. 2

Sec. II

A. Quantity generated in 1994 Instruction Page 21. 38561.0

B. Quantity generated in 1995 Page 21. 0.0

C. UOM Page 21. 1
□ 1 lbs/gal □ 2 sg

D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
□ 1 Yes (CONTINUE TO SYSTEM 1)
☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1

On-site process system type Page 22. M

Quantity treated, disposed, or recycled on site in 1995

ON-SITE PROCESS SYSTEM 2

On-site process system type Page 22. M

Quantity treated, disposed, or recycled on site in 1995

Sec.III A. Was any of this waste shipped off-site in 1995 Instruction page 22.
□ 1 Yes (CONTINUE TO BOX B)
☒ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1		M		
Site 2		M		

Sec. IV A. Did new activities in 1995 result in minimization of this waste? Instruction page 24.
□ 1 Yes (CONTINUE TO BOX B)
☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
W W W W	□ 1 Yes □ 2 No			

Comments:
*I.H. B219 - SPENT ORGANIC LIQUID FROM POLYESTER PRODUCTION

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

S NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
E P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18. PLANT WASTE #30 SPENT OIL & GASOLINE MIXTURE

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
D001 NA / NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	[M]	[A] 54	1	[B] 206	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM · Density Page 21.	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
4310.0	2020.0	1 · ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☑ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]	·	[M]	·

Sec. III A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☑ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1	LAD 001 890 367	[M] 041	2	6430.0
Site 2	ALD 000 622 464	[M] 061	1	290.0

Sec. IV A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO BOX B) ☑ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
[W] [W] / [W] [W]	☐ 1 Yes ☐ 2 No	·	·	·

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

S NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
E P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18.
PLANT WASTE #31 - SPENT XYLENE/DMT/TPA MIXTURE

B. EPA hazardous waste code Page 19.
D001 NA
NA NA NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	M	A 31		B 403	3

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
450.0	0.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
M		M	

Sec.III A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1		M		
Site 2		M		

Sec. IV A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
W W / W W	☐ 1 Yes ☐ 2 No			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

S NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
E P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #57- SPENT LUBE OIL + HYDRAULIC FLUID / FREON 12 + 22 MIXTURE

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
F002 NA / NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	1 / [M]	[A] 54	1	[B] 206	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
620.0	1740.0	1 / ____ ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☑ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]		[M]	

Sec. III

A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☑ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1	LAD 001 890 361	[M] 041	2	620.0
Site 2		[M]		

Sec. IV

A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO BOX B) ☑ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
[W] [W] [W] [W]	☐ 1 Yes ☐ 2 No			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

S NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
E P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18.
PLANT WASTE #91L - LIQUID FROM PUNCTURED AEROSOL CANS

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
D001 NA NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	1 / [M]	[A] 99*	1	[B] 219**	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
0.0	490.0	1 ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
[M]		[M]	

Sec. III A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1		[M]		
Site 2		[M]		

Sec. IV A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
[W] [W] [W] [W]	☐ 1 Yes ☐ 2 No			

Comments:
* I.F. A99 - LIQUID FROM PUNCTURED AEROSOL CANS
** I.H. B219 LIQUID FROM PUNCTURED AEROSOL CANS

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

S NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
E P.O. BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1995 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1995 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18. PLANT WASTE #92 - SPENT FLOURESCENT BULBS

B. EPA hazardous waste code Page 19. D009 NA NA NA NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	L	A 99 *	L	B 3 1 9 **	2

Sec. II

A. Quantity generated in 1994 Instruction Page 21.	B. Quantity generated in 1995 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
0.0	4165.0	L / □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
M	

ON-SITE PROCESS SYSTEM 2

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1995
M	

Sec. III A. Was any of this waste shipped off-site in 1995 Instruction page 22. ☒ 1 Yes (CONTINUE TO BOX B) □ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1995 Page 23.
Site 1	ALD 000 622 464	M 061	L	4165.0
Site 2		M		

Sec. IV A. Did new activities in 1995 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 25.	D. Quantity recycled in 1995 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1995 source reduction quantity Page 26.
W W W W	□ 1 Yes □ 2 No			

Comments: * I.F. A 99 - SPENT FLOURESCENT BULBS
** I.H. B319 - SPENT FLOURESCENT BULBS

State of North Carolina
Department of Environment, Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

Waste Min.

Company closed a ... Const

Harding - Lawson Assoc.
Raleigh Company

H13 - 859
More waste

Manuf.
TPH -
DMT - film dissolve Methanol
dacron polyester thread
Spool
Cut up ...

McCoy's Training Course

John White
Ussles
Abney
Ricky Strange Air
Christa Basic - Air WQ

RFA Done

RFI submitted
Awaiting

7-11

Jean Bowen
Alabama

Training
Waste Handler
① Business
② Site Specific

Expire in 99

Flourescent bulbs
40 days
Batteries - Recycle
Pesticides - Collection
Thermo - 7 Recycling
Mercury switch bulbs -

Reduce Paper
(13) Waste Stream

Contingency Plan Stream

Spill

Chlor. Spread

22 Standards
... to ...
1000 tons
10 - 20 cu yd. ...
Roll off box

Fayetteville Regional Office
225 Green Street, Suite 601, Fayetteville, North Carolina 28301 Telephone 910-486-1191 FAX 910-486-1791

Express Oil
Rocky Point

FRO 9:00-9:30

Chemlawn Mgmt Inc ACD 000622969

Pender Co

- TRI Staf - Motor Transm

RCRA INSPECTION REPORT

FACILITY NAME: DuPont EI DE Nemours & Co Cape Fear

ID Number: NCD 047 369 046

Type of facility: LQG/TSDF BBL

Ownership: Dupont

Contact: Richard Ferguson - plant manager

Phone number: 910/371-4545

Facility location (address): SR 1426 Phoenix, 28451 P.O. Box 2042

City, State, Zip: Wilmington N.C. 28402

SURVEY PARTICIPANTS: Althea Hayletf, Dupont env. affairs team leader
Gary Smith, Dupont Waste handler
L.F. Worrell, NC DEHNR/DSW/HWS

DATE OF INSPECTION: 6-6-96

PURPOSE OF INSPECTION:
CEI

FACILITY DESCRIPTION:
Chemical manf plant of: DMT — powder — to polyesteryarn
TPA - powder — stable

Processes:
Chemical

Type Waste:
Numerous Waste Streams see annual Report

Transporters:
Conaco TXD 096 030 697
TRI State

TSD's:
DuPont LAD 001 890 367
Chem Waste Mgmt. of Inc. ALD 000 622 464

Facility Name: DuPont Cape Fear
ID#: NCD 047 369 046

Accumulation Areas:
2 @ fibre lab
1 @ Intermediates lab
1 @ Waste Dock
1 @ S. Waste incineration
1 @ H & V Shop
1 @ Contractor paint shop

Storage Areas:
(1) 90 days Storage H & V Shop
(2) Permit Storage Area

WASTE MINIMIZATION:
Written plan kept current

SITE DEFICIENCIES:
None observed

RECOMMENDATIONS:
Documentation – outline of RCRA training

K. L. Wade
Inspector/Reviewer

Althea Haylett
Facility Contact

6-6-96
Date

Dupont: Waste profile

Ricky –

A. Hyatt

↑ As

↑ Pb

↑ Cr

flourescent lights (LCM) –
universal waste –

ID # 34H → North Incinerator Ash

(35H) → South Unit

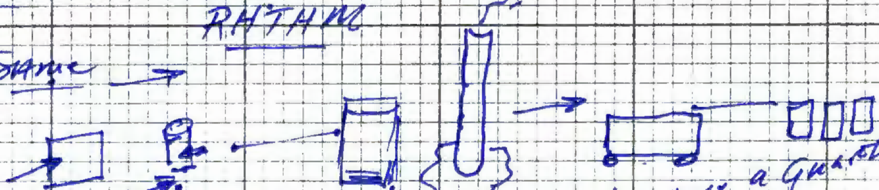
modify contingency plan – permit writer codes D004/D006/D008

Plant Mgr – Richard Ferguson (DKK)

⟶ C.J. Bowen emerg. coordinator
RHTHM

Contingency Plan – Same →

Date



LCM ship once a Quarter to

Haz. waste disp

Used Oil
Incinerator

TPC

Lead Acid
Batt
Nick

Pest.
Batt.

Therm.

used oil burning

(8700-12)

→ Jean Bowen

Jean
Waste Hd.

Note – look for Jim's changes in Files

- Annual Report
- Cont. plan – same
- Training docum.

waste handlers

John White
David Short
A. Hyatt

↓ H. Mat.

(RCRA)

– Manifests
→ Handlers
→ Em. Coor.
→ Resp. to haz. waste
→ Training RCRA
→ Inspections of HW.

Training Specific to Cape Fear

Environmental Justice
movement to hw jobs.

Waste handlers
40 hour OSHA
24 hour update

90 days storage @ Incinerator

Permit Storage Pad –

NCD 047 369 046

Dupont
Cape Fear

All Areas
(7) → 2 Labs Fib.
(1) inter Stage Lab
(1) Waste dock
(1) Incinerator
(1) H & V Shop
(1) Paint shop

Closed cont
& label cont

Consultant
question

CFC in solid

Pontchartrain
LA.

TSDF •
Dupont
LAD 001 890 367

Transp.
Service Transport Conaco
TXD 096 030 697

Dupont manuf
DMT → powder
FERR
TPA → powder

ethylene glycol
pump
heat
mold

cooking grease
boil out Residue

3 landfills
close down
TPA landfill
(2) ↗ close ash

Chemical Waste Mgmt. Inc
Emellie Fal,
ALD 000 622 464

Ash →

pump
polyester yarn
stable cut yarn
spun spools
bales

2 manifests
5600
00001
00014

Tri state
Solid
Ash
D004
D006
D008

Training
McCoy Book
Red Book
Booster

F039

Ulysses Slade

RCRA Training
Gary Smith
David Walker
Bobby Barson
James Dubar
Billy
R.J. Gardner

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

ALTHEA HAYLETT, ENV LEADER
DUPONT EI DE NEMOURS & CO CAPE FEAR
PO BOX 2042
WILMINGTON, NC 28402

August 1, 1996

RE EPA ID NO.: **NCD047369046**

Dear Sir/Madam:

Based on information received by this office for the site identified with the EPA ID number, the state has accepted and processed the change in RCRA classification or information for the above site.

Please verify the computer generated information below and notify us of any corrections. We are advising EPA of the changes.

Sincerely,

R. J. Edwards III

R. J. Edwards, Administrative Assistant
Division of Waste Management

Current Computer Record
'X' indicates operation status of your facility.

X LARGE GENERATOR	__ STORES	__ TRANSPORTER
__ SMALL QNTY GENERATOR	__ TREATER	__ SMALL QTY BURNER
__ EXEMPT SMALL QNTY	__ DISPOSER	__ USED OIL
__ LG QNTY. UNIVERSAL		

Company name:	DUPONT EI DE NEMOURS & CO CAPE FEAR
Owner:	E I DUPONT DE NEMOURS & CO INC
Contact:	HAYLETT ALTHEA, ENV LEADER
Phone number:	910/371-4225
Location address:	SR 1426
City, St & ZIP:	LELAND, NC 28451-

Please notify us if there is any further change in your operation which would affect your status namely Company's Name, Ownership, Address, Contact or Telephone Number.

Your EPA ID number is currently active.

cc: FLINT WORRELL

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0028 Expires 9-30-96
GSA No. 0246-EPA-OT

Please refer to the *Instructions for Filling Notification* before completing this form. The information requested here is required by law (Section 3010 of the *Resource Conservation and Recovery Act*).

EPA Notification of Regulated Waste Activity

United States Environmental Protection Agency

Date Received (For Official Use Only)

JUL 29

I. Installation's EPA ID Number *(Mark 'X' in the appropriate box)*

[ ] A. First Notification [X] B. Subsequent Notification *(Complete Item C)*

C. Installation's EPA ID Number: NCD047369046

II. Name of Installation *(Include company and specific site name)*

E. I. DUPONT DE NEMOURS & CO.

III. Location of Installation *(Physical address not P.O. Box or Route Number)*

Street: STATE ROAD 1426

Street *(Continued)*:

City or Town: LELAND | State: NC | Zip Code: 28451-

County Code: | County Name: BRUNSWICK

IV. Installation Mailing Address *(See Instructions)*

Street or P.O. Box: P.O. BOX 2042

City or Town: WILMINGTON | State: NC | Zip Code: 28402-

V. Installation Contact *(Person to be contacted regarding waste activities at site)*

Name *(Last)*: HAYLETT | *(First)*: ALTHEA

Job Title: EMV LEADER | Phone Number *(Area Code and Number)*: 910-371-4225

VI. Installation Contact Address *(See Instructions)*

A. Contract Address Location [ ] Mailing [X] Other [ ]

B. Street or P.O. Box: P.O. BOX 2042

City or Town: WILMINGTON | State: NC | Zip Code: 28402-

VII. Ownership *(See Instructions)*

A. Name of Installation's Legal Owner: E. I. DUPONT DE NEMOURS & CO.

Street, P.O. Box, of Route Number: 1007 MARKET STREET

City or Town: WILMINGTON | State: DE | Zip Code: 19898-

Phone Number *(Area Code and Number)*: 302-774-1000

B. Land Type: P

C. Owner Type: P

D. Change of Owner Indicator: Yes [ ] No [X]

(Date Changed) Month: | Day: | Year:

Continued on Reverse

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0028 Expires 9-30-96
GSA No. 0246-EPA-DT

ID - For Official Use Only

VIII. Type of Regulated Waste Activity *(Mark 'X' in the appropriate boxes; Refer to instructions)*

A. Hazardous Waste Activity

1. Generator (See instructions)
   - [X] a. Greater than 1000kg/mo (2,200 lbs.)
   - [ ] b. 100 to 1000 kg/mo (200-2,200 lbs.)
   - [ ] c. Less than 100 kg/mo (220 lbs)
2. Transporter (Indicate Mode in boxes 1-5 below)
   - [ ] a. For own waste only
   - [ ] b. For commercial purposes

Mode of Transportation
- [ ] 1. Air
- [ ] 2. Rail
- [X] 3. Highway
- [ ] 4. Water
- [ ] *5. Other - specify*

[ ] 3. Treater, Storer, Disposer (at installation) Note: A permit is required for this activity; see instructions.

4. Hazardous Waste Fuel
   - [ ] a. Generator Marketing to Burner
   - [ ] b. Other Marketers
   - [ ] c. Boiler and/or Industrial Furnace
     - [ ] 1. Smelter Deferral
     - [ ] 2. Small Quantity Exemption

Indicate Type of Combustion Device(s)
- [ ] 1. Utility Boiler
- [ ] 2. Industrial Boiler
- [ ] 3. Industrial Furnace

[ ] 5. Underground Injection Control

B. Used Oil Recycling Activities

1. Used Oil Fuel Marketer
   - [ ] a. Marketer Directs Shipment of Used Oil to Off-Specification Burner
   - [ ] b. Marketer Who First Claims the Used Oil Meets the Specifications
2. Used Oil Burner - Indicate Type(s) of Combustion Device(s)
   - [ ] a. Utility Boiler
   - [X] b. Industrial Boiler
   - [ ] c. Industrial Furnace
3. Used Oil Transporter - Indicate Type(s) of Activity(ies)
   - [ ] a. Transporter
   - [ ] b. Transfer Facility
4. Used Oil Processor/Re-refiner - Indicate Type(s) of Activity(ies)
   - [ ] a. Process
   - [ ] b. Re-refine

IX. Description of Hazardous Wastes *(Use additional sheets if necessary)*

A. Characteristics of Nonlisted Hazardous Wastes. *(Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles; See 40 CFR Parts 261.20 - 261.24)*

1. Ignitable (D001)	2. Corrosive (D002)	3. Reactive (D003)	4. Toxicity Characteristic	(List specific EPA hazardous waste number(s) for the Toxicity characteristic contaminant(s))			
X	X		X	D004	D005	D006	D007

B. Listed Hazardous Wastes. *(See 40 CFR 261.31 - 33; See instructions if you need to list more than 12 waste codes.)*

1	2	3	4	5	6
F001	F002	F003	F005		
7	**8**	**9**	**10**	**11**	**12**

C. Other Wastes. *(State or other wastes requiring a handler to have an I.D. number; See instructions.)*

1	2	3	4	5	6
D008	D009	D018	D026		

X. Certification

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

Signature	Name and Official Title *(Type or print)*	Date Signed
Richard D. Ferguson	Plant Manager	7-25-96

XI. Comments

RECEIVED
AUG 13 1996
SOLID WASTE MANAGEMENT
FAYETTEVILLE REGIONAL OFFICE

Note: Mail completed form to the appropriate EPA Regional or State office. *(See Section III of the booklet for addresses.)*

EPA Form 8700-12 (Rev. 11-30-93) Previous edition is obsolete.

R-12003-CFP REV. 2-80

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

CAPE FEAR PLANT
P. O. BOX 2042
WILMINGTON, NORTH CAROLINA 28402

August 30, 1996

Mr. Flint Worrel
Waste Management Section
Division of Environmental Management
225 Green St., Suite 601
Fayetteville, NC 28301

Dear Flint,

You are invited to attend a dinner on September 10th starting at 5:30 pm at the Wilmington Howard Johnson Plaza Hotel on Market Street. DuPont is holding a NC Environmental Professionals Meeting on that day and will have representatives from all of the DuPont sites in North Carolina.

We would love for you to attend the dinner. Rick Shiver will be our dinner speaker. He will be speaking on the NCDEHNR reorganization.

We recognize that this would be a significant drive for you but wanted you to feel welcome if you were able to attend. Please let me know if you will be there. My number is 371-5232. I also need to know if you would prefer prime rib or fish as an entree. Hope to see you there!

Sincerely yours,

Penny C. Mahoney

From: "Terry Dover S&H W Superv." <tDover@fro.ehnr.state.nc.us>
Organization: enhr
To: N1NW319@WIRO.EHNR.STATE.NC.US
Date: Wed, 3 Apr 1996 10:28:46 EST
Subject: Dupont Meeting 4-2-96 Raleigh
CC: fWorrell@fro.ehnr.state.nc.us
Priority: normal

om the Dexter, Bill Hocutt, Doug Holyfield and I met with Althea Haylett,

Frank Davis and Jerry Henderson of Dupont. The result of the meeting was that ash from the incinirator already landfilled is not considered to be a problem in that the mixture of bottom ash and flyash is not hazardous.

Dupont has segregated the flyash which is hazardous by chacteristic since September of 1995 when this was determined. Exceedances were found for Cr, Pb, and As with eight sampling events.

Dupont has two options as explained by Doug Holyfield, 1. ship the accumulated flyash and future generated waste off site as a hazardous waste, 2. treat on site the waste to render it non-hazardous.

They will consider the options and get back in touch with us in the near future. No regulatory is necessary from our Division.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

June 29, 1995

Ms. Althea Haylett
E. I. duPont de Nemours & Co.
Cape Fear Plant
Post Office Box 2042
Wilmington, North Carolina 28402-2042

Reference: Release from SWMU 12 - DMT Polishing Pond
E.I duPont de Nemours & Co.
Cape Fear Plant, Wilmington, NC
NCD 047 369 046

Dear Ms. Haylett:

A letter was received by the Hazardous Waste Section on May 8, 1995 from duPont Environmental Remediation Services informing the Department of a release from SWMU 12 - DMT Polishing Pond at the duPont Cape Fear Plant on Monday, April 24, 1995. According to the facts presented in the May 8 letter, approximately 50 gallons of treated waste water was released onto the dirt road surrounding SWMU 12. DuPont constructed a temporary dike to contain the waste water and pumped the spillage back into the DMT Polishing Pond. The leak was stopped by Tuesday morning. No further corrective action was taken or proposed by duPont.

In addition to the primary constituents of neutralized acetic and terephthalic acids, Exhibit III.A.1. from the RFA Additional Information Report submitted by E.I. duPont de Nemours & Co., on September 13, 1988, reported levels of arsenic, antimony and mercury in SWMU 12. Condition IV.C.3. of duPont's RCRA Permit requires the Permittee to submit a confirmatory sampling plan that meets the requirements of Condition IV.C.4. Condition IV.C.4 states "...The Permittee shall provide sufficient justification and/or documentation that a release is not probable..." DuPont must submit plans

for confirmatory sampling at the site of the spill from SWMU 12 to support its claim that hazardous constituents contained in the DMT waste water were not released to the soil or ground water.

If you have any questions, please contact Gena Driscoll at (919)733-2178, ext. 298.

Sincerely,

Sharron E Rogers for

James A. Carter, Chief
Hazardous Waste Section

JAC/GMD-12.wp5(1-2)

cc. Sharron E. Rogers
Flint Worrell
Gena M. Driscoll

November 21, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. John Crowder
Division of Solid Waste Management
127 Cardinal Drive Extension
Wilmington, NC 28405-3845

Subject: PET Recycle Process

Dear Mr. Crowder,

During your October visit to DuPont's Cape Fear Site in Leland, NC, we briefly discussed DuPont's imminent start-up of a PET (Polyethylene Terepthalate) Recycle facility. The following is additional information on the process.

For the operation of the PET Recycle process, waste PET flakes (predominantly film) will be received from off-site. On-site storage will occur prior to the reaction. (No hazardous waste is used in this process.) In the PET Recycle facility, PET material will be melted and then reacted with methanol. The products of this reaction are Dimethyl Terepthalate (DMT) and ethylene glycol. DMT, ethylene glycol, and methanol are refined for use in the manufacture of Dacron®. DMT capacity is 100 million pounds per year.

It is my understanding that the state is not requiring a permit for this activity. If this should change, please contact me at (910) 371-4225. If there are specific questions about the process, please contact Penny Mahoney at (910) 371-5232.

Sincerely,

Althea T. Haylett

Althea T. Haylett
Dacron® Fibers Environmental Leader

cc: Mr. Jim Barber
Mr. Terry Dover
Mr. Flint Worrell

Cc Kathy Hunt

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

December 4, 1995

Ms. Kristin Beck, Environmental Specialist
DuPont Cape Fear Plant
P.O. Box 2042
Wilmington, NC 28402

RE: Extension Request for Submittal of Amended RFI Workplan

Dear Ms. Beck:

This office is in receipt of the November 16, 1995 correspondence regarding an extension request for submittal of the Phase II RCRA Facility Investigation (RFI) Workplan. The Hazardous Waste Section (HWS) understands that DuPont intends to make extensive revisions to the Workplan and that additional time will be needed to amend the plan. Therefore, the Hazardous Waste Section will extend the submittal date for the Phase II Workplan from November 27, 1995 to January 31, 1996, as requested.

Bob Glaser, hydrogeologist on my staff, has recently been designated as the primary contact for the activities related to the RFI at the DuPont Cape Fear Plant. In the future, please direct all technical questions related to the RFI to Mr. Glaser. He may be reached by calling (919) 733-2178 extension 300.

Sincerely,

Sharron E. Rogers, Branch Head
Hazardous Waste Section
Solid Waste Management Division

cc: Flint Worrell
Bob Glaser

rc: Jill Burton
Sharron Rogers
Gena Driscoll

A:\RLG-12.WP5

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

DEHNR

August 24, 1995

Ms. Althea Haylett
E.I. duPont de Nemours & Co.
Cape Fear Plant
Post Office Box 2042
Wilmington, North Carolina 28402-2042

Reference: Release from SWMU 4 and SWMU 6
E.I. duPont de Nemours & Co.
Cape Fear Plant, Wilmington, North Carolina
NCD 047 369 046

Dear Ms. Haylett:

A letter was received by the Hazardous Waste Section on August 18, 1995 from duPont Environmental Remediation Services informing the Department of a release from the process wastewater line between the Intermediates Emergency Lift Station (SWMU 4) and the DMT Emergency Basin (SWMU 6). The Department agrees that duPont should investigate this release during the upcoming RFI Phase II activities. According to Condition IV.C.3 of duPont's RCRA the Permittee is required to submit a confirmatory sampling plan that meets the requirements of Condition IV.C.

In addition, the description of the immediate action taken to address the release between SWMUs 4 and 6 was unclear. The estimated size and duration of the release, method of discovery, fate of the excavated soil and actions taken to stop and contain the release are not discussed. DuPont should provide a more detailed explanation of the release that at least includes these main points.

If you have any questions, please contact Gena Driscoll at (919) 733-2178, ext. 298.

Sincerely,

Sharron E Rogers for

James A. Carter, Chief
Hazardous Waste Section

JAC/GMD-22wp.wp5

cc: Sharron E. Rogers
Flint Worrell
Gena M. Driscoll

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
William L. Meyer, Director

August 28, 1995

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Althea Haylett
E.I. du Pont de Nemours & Co.
Cape Fear Plant
Post Office Box 2042
Wilmington, North Carolina 28402-2042

Reference: Notice of Technical Inadequacy (NOTI) for
Phase II RCRA Facility Investigation (RFI) Work Plan
Facility ID # 047 369 046

Dear Ms. Haylett:

The North Carolina Department of Environment, Health, and Natural Resources Hazardous Waste Section (Section) and EPA have reviewed E.I. du Pont de Nemours & Co.'s Phase II RFI Work Plan received on March, 1994. This Work Plan is required by Condition IV.C.1. of the Permit. E.I. du Pont de Nemours & Co.'s Permit became effective October 18,1989. The Section has determined the Work Plan to be inadequate.

Enclosed with this letter is a list of deficiencies in the Work Plan. A revised submittal incorporating the changes resulting from this NOTI is due within ninety (90) calendar days of receipt of this letter. To expedite approval of this submittal, E.I. du Pont de Nemours & Co.'s responses should be listed individually, corresponding with each NOTI comment. As part of each response, E.I. du Pont de Nemours & Co. should also indicate where in the submittal changes have been made to address the comment. Any additional figures or new documentation should be included. If the revisions are not extensive, E.I. du Pont de Nemours & Co. may submit only the revised pages with detailed instructions for inserting the new pages and removing the superseded pages from the document. E.I. du Pont de Nemours & Co. should use a page numbering system on any revised pages that clearly indicates the revision number and revision date.

13A .0013) and Condition I.E. of the Permit. Three (3) copies of the revised submittal and responses to comments should be mailed to the following:

James A. Carter, Chief
Hazardous Waste Section
Solid Waste Management Division
P. O. Box 27687
Raleigh, North Carolina 27611-7687

Failure to comply with any permit condition may result in enforcement actions initiated by the State pursuant to the Hazardous Waste Management Rules codified at 15A NCAC 13A and statutory requirements of N.C.G.S. 130A - Article 9 (Solid Waste Management Act as amended).

If you have any questions or comments on this NOTI or other issues please contact Gena Driscoll of my staff at (919) 733-2178 ext. #298.

Sincerely,

Sharron E Rogers for

James A. Carter, Chief
Hazardous Waste Section

JAC\GMD-23.WP5

cc: G. Alan Farmer, US EPA, Region IV
A. Preston Howard, Jr., DEM
Gena Driscoll

rc: Sharron Rogers
Rob McDaniel
Flint Worrell

Comments on Phase II RFI Work Plan
E.I. duPont de Nemours and Company
NCD 047 369 046

General Comments:

1. The Phase I RFI Report indicated that samples were analyzed for volatile organic compounds (VOCs), formaldehyde, phenols, a select group of metals and toxicity characteristic metals. Also, duPont openly admits with regards to SWMUs 55 and 58 that "There are no records available concerning the specific compounds and concentrations disposed (chemical analyses, etc.) other than the general description provided." (Section 2.2.2.2, Page 20, Section 2.2.2.4, Page 23) While this list was approved in the RFI Work Plan (November 1990), duPont should provide additional information justifying their constituent lists used around each SWMU. Nonetheless, duPont should provide additional sampling plans to verify their lists of constituents by analyzing several soil and ground water samples using EPA approved methods 8240, 8270 and Appendix IX metals. Also, duPont should provide plans to analyze additional samples taken from the Peedee for SW-846 methods 8240, 8270 and Appendix IX metals.

2. The Phase II RFI Work Plan should stand alone. Any necessary data should be included in the Phase II document, not incorporated by reference to the Phase I RFI Report or any other text.

3. The monitoring well construction for wells east of SWMUs No. 25, 58, 36, 32, 33, and 31 and adjacent to the swamp (MW's 15, 16, 17, 18, 19, 20 and 21) should be reviewed to determine if the well screens are appropriately placed for release detection and monitoring. A potential problem could exist since the SWMUs and the top of the wells are constructed in fill dirt that rises approximately 20 feet above the adjacent swamp. The path of contaminant migration from adjacent SWMUs, specifically 19 and 26 may not be intercepted by these wells.

4. On January 9, 1995, NCDEHNR was fully authorized to administer duPont's RCRA Permit. All submittals should be addressed to James A. Carter, Chief, Hazardous Waste Section. This change should be reflected in the Phase II RFI Work Plan document.

5. DuPont has been comparing analytical data to human health-based action levels. However, a swamp, is located adjacent to the facility and immediately downgradient of groundwater flow. Therefore, other levels of concern such as ecological risk should be considered.

6. "Subpart S is not promulgated as a final rule. The Region considers the action levels listed in this proposed rule to be out-of-date and require the action levels of contaminants to be calculated using the latest IRIS (Integrated Risk Information System) data." The preceding statement is a quote from EPA Region IV. DuPont can not use comparisons between known contaminant concentrations at the site with Subpart S CALs. Any comparisons made with CALs should be omitted and replaced with the appropriate comparison between site concentrations and respective risk-based levels.

7. No site-specific information has been gathered on the Peedee, or deep, aquifer. The Work Plan states that the surficial aquifer at the site is approximately 30 feet to 50 feet thick and is separated from the underlying Peedee aquifer by a poorly defined confining layer that is probably less than 15 feet thick. Coastal plain lithologic units are often laterally discontinuous which allows ground water to flow between units that may appear in one location to be hydraulically separate (see Figure 24 of the work plan). The Work Plan proposed only three (3) widely spaced CPT probes be used to define the depth and a real extent of the confining layer.

   Additionally, no information has been gathered as to the direction of flow within the Peedee aquifer. If the Peedee aquifer is hydraulically separated from the surficial aquifer, it is possible that the flow direction within the Peedee aquifer may be different from the flow within the surficial aquifer.

   DuPont has proposed a minimal investigation of the Peedee aquifer. Of six (6) CPT probes into the Peedee aquifer, three (3) will be used to define the stratigraphy and three (3) will be screened for only two or three contaminants. DuPont has proposed only two (2) deep monitor wells based on the screening results from the three CPT probes. Justify how the vertical distribution of contaminants can be evaluated based on such a limited analysis.

Section 2.2.2 Solid Waste Management Units Under Investigation

<u>Section 2.2.2.1 Dacron Aeration Basin - SWMU No. 19 and Dacron Retention Basin - SWMU No. 26</u>

1. See General Comment 1.

2. DuPont states that "A release to the soils beneath SWMUs 19 and 26 has occurred, but based upon a comparison of the detected concentrations with proposed Corrective Action Limits (CALs)(See Phase I RFI Report) and the fact that the soils below both basins are

below the water table, duPont recommended no further soil investigation was needed for these SWMUs." There are three problems with this statement.

a. See General Comment 2.

b. See General Comment 6.

c. DuPont has recommended in the statement above that no further soil investigation is needed. The Department agrees that the vertical extent of soil contamination within the SWMUs' boundaries is adequately defined, but duPont has failed to sufficiently address the possibility of lateral contamination surrounding SWMU 19 and SWMU 26. On Page 32, it is stated that one soil sample location will be selected to test for lateral migration from SWMU 19. Where is this sample located on Figure 13? SWMU 26 is not addressed. Also, it is stated that these samples will only be analyzed for methylene chloride, formaldehyde, acetone, chromium, antimony and mercury. Referencing General Condition 1 above and, based on the location and analytical results of the soil samples taken from both SWMUs 19 and 26 (as shown in Tables 3,4 and Figure 9), duPont should provide plans for additional investigation into the lateral extent of soil contamination surrounding SWMU 19 and SWMU 26.

3. DuPont should identify the approximate daily flow through SWMU 19.

4. Page 19:
   a. In the first paragraph under **Previous Investigation**, Figure 13 is referenced. However, Figure 13 does not show the soil sample and water sample locations from the Phase I RFI activities. Resolve this discrepancy.

Section 2.2.2.2 Sludge Field Runoff Overflow Basin - SWMU No. 36

1. See General Comment 1.

2. See General Comment 2.

3. See General Comment 6.

4. The Department feels that additional soil investigation is warranted. DuPont states on page 21 "A release to the soils beneath SWMU 36 has occurred, but based upon a comparison of the detected concentrations with proposed CALs (See Phase I RFI Report), DuPont has recommended that no further investigation of the soils was needed for this SWMU." Further investigation of the soils may be warranted when comparisons are made between known contaminant levels at the site and appropriate action levels. Also, the Phase I RFI Work Plan only provided for samples to be taken from interior

locations of the SWMU as shown in Figure 9. Lateral soil contamination was not addressed. Based on the analytical results of monitoring wells shown on Table 11, hazardous constituents were found in MW-15, MW-16, MW-17 and MW-18, with MW-17 being the most contaminated (Based on 1991 and 1993 sampling results). All of these wells are immediately downgradient of SWMU No. 36. Contamination of varying constituents and concentration are shown in Table 10. Based on the interior locations of previous soil sampling activities, the uncertainty of the SWMU boundaries, the degree of soil contamination found inside the SWMU boundaries and the contamination found in downgradient monitoring wells, the Department feels that the lateral extent of soil contamination around SWMU 36 has not been addressed. DuPont should provide plans for additional soil investigations at SWMU 36.

5. Page 20. In the first paragraph under **Previous Investigation**, Figure 13 is referenced. However, Figure 13 does not show the soil sample and water sample locations from the Phase I RFI activities. Resolve this discrepancy.

Section 2.2.2.3 Past Landfill No. 1 - SWMU No. 55

1. DuPont states that "a release to the soils beneath SWMU 55 had occurred, but based upon a comparison of the detected concentrations with proposed CALs (See Phase I RFI Report) and the fact that the deepest soil samples were collected below the water table, duPont has recommended that no further investigation of the soils was needed..." Referring to Section 2.2.2.3, Page 21 and Figure 10 in the Phase II RFI Work Plan Document, duPont states that the exact dimensions of SWMU 55 are uncertain. Also, as shown on Table 9, hazardous constituents were found in MW-11, MW-12, MW-13 and MW-13A based on 1991 and 1993 sampling results. MW-11 is upgradient of SWMU 55 and shows formaldehyde (.2 mg/L), arsenic (.042 mg/L), and chromium (.29 mg/L) contamination. Wells downgradient of this SWMU, MW-12, MW-13, MW-13A, show ground water contamination by formaldehyde, chromium, chloroform, vinyl chloride, methylene chloride, carbon tetrachloride, trichloroethylene, tetrachloroethylene, toluene, dichlorofluoromethane and arsenic. The investigation of the soil surrounding SWMU 55 only included four (4) locations inside the assumed boundaries as shown in Figure 10. Each location showed contamination of varying constituents and concentration as can be seen in Table 8. Based on the interior locations of previous soil sampling activities, the uncertainty of the SWMU boundaries, the degree of soil contamination found inside the SWMU boundaries and the contamination found both in upgradient and downgradient monitoring wells, the Department feels that the lateral extent of soil contamination around SWMU 55 has not adequately been addressed. DuPont should provide plans for additional soil investigation at SWMU 55.

2. See General Comment 1.

3. See General Comment 2.

4. See General Comments 6.

5. Page 22. In the first paragraph under Previous Investigation, Figure 14 is referenced. However Figure 14 does not show the soil sample locations from the Phase I RFI activities. Resolve this discrepancy.

Section 2.2.2.4 Past Landfill No. 4 - SWMU No. 58

1. See General Comment 1.

2. See General Comment 2.

3. See General Comment 6.

4. DuPont states that "a release to the soils beneath SWMU 58 had occurred, but based upon a comparison of the detected concentrations with proposed CALs (See Phase I RFI Report) and the fact that the deepest soil samples were collected below the water table, duPont has recommended that no further investigation of the soils was needed..." Referring to Section 2.2.2.4, Page 23 of the Phase II RFI Work Plan, duPont states "Since abandonment of the landfill, there have been numerous construction projects and the exact dimensions of the landfill are uncertain. The Sludge Field Runoff Overflow Basin (SWMU 36) and other facilities were built over a portion of the SWMU. Also, shown on Table 11, hazardous constituents were found in MW-15, MW-16, MW-17, MW-18, MW-19 and MW-20, with MW-17 and MW-20 being the most contaminated (Based on 1991 and 1993 sampling results). All of these wells are downgradient of SWMU No. 58. Also, contaminants were found in MW- 21, immediately upgradient of SWMU 58, as shown in Table 11. The investigation of the soil in and surrounding SWMU 58 only included two (2) locations well inside the assumed boundaries as shown in Figure 9. Each location showed contamination of varying constituents and concentration as can be seen in Table 10. Based on the interior locations of previous soil sampling activities, the uncertainty of the SWMU boundaries, the degree of soil contamination found inside the SWMU boundaries and the contamination found both in upgradient and downgradient monitoring wells, the Department feels that the lateral extent of soil contamination around SWMU 58 has not been addressed. DuPont should provide plans for additional soil investigations around SWMU 58.

Section 3.0- Phase II RCRA Facility Investigation Work Plan

1. Page 25
   a. The Phase II investigation should include a discussion of how the impact of releases to potential receptors will be evaluated. This was Issue #7 in **Section 9.0 - Recommendations** on page 63 of the Phase I RFI Report.
   b. Provide a contingency plan for additional soil sampling around SWMU No. 58 should constituents found in the ground water warrant this additional sampling. This issue was raised in the last paragraph of **Subsection 7.5 SWMU No. 58 Evaluation** on Page 59 of the Phase I RFI Report.

Section 3.1.1.1 Purpose, Page 26

1. DuPont states "The Phase II RFI will characterize releases to groundwater." Soil investigation is not mentioned. As has been discussed in each comment section above, the Department feels that the extent of soil contamination has not been adequately addressed for the duPont Cape Fear site with regard to both location and constituents analyzed. (See General Comment 1, Sections 2.2.2.1, 2.2.2.2, 2.2.2.3, 2.2.2.4 comments.) The purpose of the Phase II RFI Work Plan should be revised to include further soil investigation.

2. The Work Plan states that CPT probes near the sites of MW-10, MW-21, AND MW-3A will determine the depth and the areal extent of the confining layer. The location of MW-3A could not be found on any of the maps. Additionally, analytical results for MW-3A could not be found in the work plan. Show the location of MW-3A on a map and provide a summary of the complete analytical report for MW-3A.

3. The Work Plan states that CPT probes near the sites of MW-10, MW-21, AND MW-3A will determine the depth and areal extent of the confining layer. The straight-line distance between MW-21 and MW-10 is approximately 2800 feet. Figure 24 from the Phase I RFI Report shows a north-south cross section along the eastern edge of SWMUs 36 and 58. This cross section, approximately 1600 feet straight-line distance, shows discrete clay units, and the text (page 41) states that this "illustrates the high degree of variability expected in floodplain or fluvial deposits." Additionally, in Section 2.1.2.3 (page 12) the Work Plan states that "the Peedee confining unit...is poorly defined with an expected thickness of 15 feet or less below the site." Discuss and justify how three widely spaced CPT probes can determine the areal extent of the confining layer when it has been shown that there is a high degree of lateral variability at the site.

4. The Work Plan states that deep site stratigraphy will be investigated by advancing CPT probes. Discuss how the CPT probes can define the stratigraphy based only on the CPT

capabilities (i.e., friction ratio, tip resistance, pore pressure) without having soil borings to "calibrate" the CPT.

5. Describe the procedures that will be used to assure that contamination from the surficial aquifer will not migrate into the Peedee aquifer during the use of the CPT probes.

6. Discuss the types of results (i.e. contaminant concentrations) from the CPT samples that will be used to decide whether or not to install deep monitor wells.

7. Flow directions and gradients are known ONLY for the surficial aquifer. No site-specific information has been gathered for the Peedee, or deep, aquifer. Since the work plan has stated that the confining unit separating the surficial aquifer from the Peedee aquifer is poorly defined, there is a strong possibility that the two aquifers may be hydraulically connected. Detailed information on the Peedee aquifer needs to be gathered before one has a "site-wide understanding of flow directions and gradients."

Section 3.2.2.4 - Phase II Water Quality Measurements, Page 29

1. DuPont stated that Phase II monitoring well samples will be analyzed only for those constituents detected in Phase I sampling. See General Comment 1.

2. Provide a table that lists the constituents to be analyzed from each SWMU.

3. The constituents analyzed should not exclude those that had concentrations less than ten times the concentration detected in the associated method blank.

4. Describe the QA/QC samples to be collected. Of the four types of QA/QC samples called for in the approved RFI Work Plan, only one sample of one type, a trip blank was collected. As a result, all samples collected during the Phase I RFI are suspect and at any time may be determined to be invalid. DuPont shall observe strict adherence to the collection and analyses of QA/QC samples during the Phase II RFI Work Plan.

Section 3.3 Background Soil Sampling, Page 30

1. DuPont states that "Background soil samples will be collected and analyzed for metals of concern for comparison of SWMU subsoil metals to local background concentrations." Many organic constituents have been found at the Cape Fear site. The Department feels that duPont should provide additional plans to analyze background soil samples for Appendix IX constituents as discussed in General Comment 1.

2. DuPont states on page 30 that background soil samples will be collected, but the exact locations are not specified in the Phase II RFI Work Plan document. DuPont must provide additional information, including graphical representation, on the proposed

background sampling locations.

3. See above Comment 2.

Section 3.4.1 - SWMUs 19& 26, Page 31

1. See comments under Section 2.2.2.1.

2. The statement is made on Page 55 of Volume I of the RFI Phase I Report that "The primary flow direction beneath these units is to the east but flow to the southeast and northeast is also indicated." Also, SWMUs 19 and 26 are unlined, operational basins and appear to be recharging the aquifer. At least one monitoring well should be installed between SWMUs 19 and 26 to establish the presence or absence of contaminants. This additional monitoring well will help verify the ground water flow pattern around these two units. The Department feels that plans for additional sampling are needed in the area immediately north-east of SWMU 19 and between

   SWMU 19 and SWMU 26, as shown in Figure 13 of the Phase II RFI Work Plan. These data are necessary to adequately delineate the two contaminant plumes around these SWMUs either in the form of additional CPT locations or additional monitoring wells.

3. The second paragraph under **Soil and Groundwater Investigation** states that at least one permanent monitoring well is proposed for the area near SWMUs 19 and 26. Is this to be a shallow well(s) ? What are the anticipated depths of the CPT probes?

Section 3.4.2 - SWMU 36, Page 32

1. See comments under Section 2.2.2.2.

2. The Department feels that the proposed plans for ground water investigations surrounding SWMU 36 are inadequate. DuPont states "Any releases to the groundwater from this SWMU can be monitored from downgradient monitoring wells (MW-15 and 18) (Figure 7). Based on the due easterly groundwater flow in the vicinity of this SWMU, (shown on Figure 27, Book 1 of the Phase I RFI Report) and the upgradient locations of SWMUs 19 and 26, the monitoring of these two wells alone cannot adequately address the downgradient migration of hazardous constituents from SWMU 36 or any portion of the underlying SWMU 58. DuPont should provide additional plans to assess groundwater contamination downgradient of SWMU 36. This should include investigations immediately upgradient and immediately south-east of the SWMU.

Section 3.4.3 - SWMU 55, Page 33

1. See comments under Section 2.2.2.3.

2. The Peedee is to be tested near MW-13. It is only to be screened for chloroform, trichloroethylene and/or dichlorofluoromethane. See General Condition 1 above. DuPont must provide additional plans to analyze at least one sample from the Peedee for Appendix IX constituents in the vicinity of SWMU 58.

Section 3.4.4.

1. This numbered section is missing. The Work Plan goes from Section 3.4.3 to 3.4.5.

Section 3.4.5 - SWMU 58, Page 34

1. See comments under Section 2.2.2.4 above.

2. See General Comment 1. The Peedee in the vicinity of SWMU 58 is only to be sampled for chloroform, tetrachloroethylene and methylene chloride. DuPont must provide additional plans to analyze at least one sample from the Peedee for Appendix IX constituents downgradient of SWMU 58.

Tables

Tables 3, 4, 5, 6, 7, 8, 9, 10, 11

See General Comment 6.

Figures

1. Graphical representation should include groundwater flow in the vicinity of each SWMU and sampling locations around each SWMU on the same figure. In the Phase II RFI Document, ground water flow in the near SWMU 55 is presented in Figure 14, but graphical representation of ground water flow in the vicinity of all other SWMUs has been neglected.

2. Figure 1, Provide a north arrow.

Appendix A

Section 2.0,

1. Page A-2 - Sampling Strategy
   DuPont states that plume delineation is required for SWMU 16 also. It is assumed that this is a typographical error. DuPont should correct this mistake.

2. Page A-6 - Ground Water Screening with CPT
   a. See General Comment 1.
   b. DuPont should specify how locations were chosen for sampling of the Peedee.

Section 3.0

1. Page A-10 - Standards
   See General Comment 2.

Volume II, Attachment 4 - Cape Fear August 1993 Sampling Event Approval Letter from EPA

Based on a review of DERS' SOP, it is seen that EPA's comments in this attachment were not adequately addressed. The Phase II RFI Work Plan document does not show duPont's response to these comments. If these comments have not yet been addressed, duPont must do so. This response should be reflected in the Phase II RFI Work Plan document.

Phase II RFI Work Plan Addendum

1. Section 1.0, page 1.
   DERS and duPont developed a revised SWMU identification map and index as provided in Appendix B of the Work Plan Addendum. According to the Work Plan Addendum, this revision has caused a change in SWMU numbering from that developed in the RFA (i.e., SWMU 1b was formerly SWMU 2). Justify this change in the SWMU numbering. Provide a table which shows for each SWMU its original number and the new number assigned by DERS and duPont.

2. Section 2.3, page 7.
   On a map, locate the unidentified GPR anomaly that was excavated and sampled.

3. Section 2.4, page 8.
A grab sample, not a composite sample, should be taken for any analysis involving volatile organic compounds.

4. Section 3.2, page 11.
The sixth bullet should also include an assessment of the vertical distribution of contaminants in ground water.

5. Section 3.3.3, page 12.
The text states that five monitoring wells will be installed but Figure 6 shows six monitoring wells.

Provide a contingency plan for installing deeper wells in the event that contaminants are found in ground water.

Additional Comments:

DuPont must supplement the existing Phase II RFI Work Plan document with additional plans to investigate the recent releases from SWMU 12 and from the ancillary equipment between SWMUs 4 and 6.


RECEIVED
AUG 31 1995
SOLID WASTE MANAGEMENT
FAYETTEVILLE REGIONAL OFFICE

DuPont Cape Fear Plant
P.O. Box 2042
Wilmington, North Carolina 28402

DuPont Cape Fear Plant

April 4, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

RECEIVED
APR 5 1995

Mr. Flint Worrell
Waste Management Specialist
Hazardous Waste Section
NC DEH&NR
225 Green Street, Suite 601
Fayetteville, NC 28301

Dear Mr. Worrell,

Please be notified that the violations cited during your visit to DuPont's Cape Fear Site on March 7 have been corrected as follows:

1. Bobby Barsh completed his annual training on March 23;
2. Carnell Jacobs who was formerly the supervisor of the Waste Handlers has been replaced by W. T. Phillips. W. T. Phillips completed his annual training on March 31; and
3. The container of precipitator ash with a hole in it has been placed in an overpack.

If you have any questions, please contact me at (910) 371-4225. Thank you.

Sincerely,

Althea T. Haylett

Althea T. Haylett
Dacron® Fibers Environmental Leader

Region IV CM&E Form - Side A

EPA ID: ____________

DATA ENTRY PERSONNEL
Submitted by: ______ Date: ______
Entered by: ______ Date: ______

Facility Name: ______________________ City: ______________

EVALUATION DATA: New: __ Change: __ Delete: __ (____ : Required)

Agency: __ Date: Mo. __ / Day __ / Year __ Type: ___

Control Number
Data Entry Personnel ________

Person: ___ BRANCH __ REASON __

Coverage Areas: (E: Evaluated NE: Not Evaluated NA: Not Applic. D:Del.)

Generators: GBF, GER, GGR, GLB, GMR, GOR, GPT, GRR, GSC, GSQ

Transporters: TGR, TMR, TOR, TRR, TWD

USED OIL: TUO, TFO, BUO, MUO, PUO, RUO

TSD's: DBF, DCH, DCL, DCP, DFR, DGS, DGW, DIN, DLB, DLF, DLT, DMC, DMR, DOR, DOT, DPB, DPP, DSI, DTR, DTT, DWP

COMPLIANCE SCHEDULE (TSD, GEN, TRANS.)
FEA __ CAS __

Evaluation Comments: (72) 1 : ______________________
2 : ______________________

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: __ Type: ___ Date (mdy) Determined: __ / __ / __ Class: __
Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____
Return to Compliance: -- Scheduled -- __ / __ / __ --- Actual ---- __ / __ / __
Reg. Type: __ Reg. Description (30): ______________________
Comment (72): ______________________

#__ Agency: __ Type: ___ Date (mdy) Determined: __ / __ / __ Class: __
Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____
Return to Compliance: -- Scheduled -- __ / __ / __ --- Actual ---- __ / __ / __
Reg. Type: __ Reg. Description (30): ______________________
Comment (72): ______________________

#__ Agency: __ Type: ___ Date (mdy) Determined: __ / __ / __ Class: __
Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____
Return to Compliance: -- Scheduled -- __ / __ / __ --- Actual ---- __ / __ / __
Reg. Type: __ Reg. Description (30): ______________________
Comment (72): ______________________

Continue violation data if necessary -

DAT ENTRY PERSONNEL

Submitted by: ______ Date: ______

Entered by: ______ Date: ______

Region IV CM&E Form - Side B

EPA ID:

Facility Name: ______________________ City: ______________

ENFORCEMENT DATA: New: __ Change: __ Delete: __ (——— : Required)

Agency: Type: Date: Month / Day / Year Number (Data Entry)

Person: Branch: Comment (72):

Penalty Data

Assessed: $ Paid: $ Date Paid: / /

Settled: $ $ / /

Enforcement Comments: (74) 1: ______________________

2: ______________________

Cite violations for this enforcement action below -

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ______________________

Comment (72): ______________________

#__ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ______________________

Comment (72): ______________________

#__ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ______________________

Comment (72): ______________________

Continue violation data if necessary -

Solid Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: E.I. Dupont De Nemours & Co.
Address: P.O. Box 2092
Wilmington, N.C. 28402
EPA ID# NCD 047 369 046

Docket # 95-450
Inspection Date 3-7-95
Facility Type LQG-TSDF

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

On 3-7, 1995, L.F. Worrell representing the N.C. Hazardous Waste Section, inspected your facility for compliance with North Carolina Hazardous Waste Management Rules. During that inspection, the following violations were noted:

Citation	Specifics
265.16(c)	Annual training of Bobby Barsh and Carwell Jacobs (waste handlers) over due. Last Update Feb. 94.
262.34	- Subpart I hazardous waste stored in containers. A hole in precipator Ash container, needs replacing.

You are hereby required to comply with the noted violation(s) by 4-7, 1995, at which time a reinspection will be performed. If compliance with the violation(s) noted above are not met, pursuant to N.C.G.S. 130A-22(a) and 15A NCAC 13B .0701 - .0707, an administrative penalty of up to $25,000.00 per day may be assessed for violation of the hazardous waste law or regulations.

3-7-95
(Date)

L.F. Worrell
N.C. Hazardous Waste Section

I, L.F. Worrell, hereby certify that I have personally served a copy of this Notice on:

3-7-95
(Name)

at State Road 1426 Phoenix site - Dupont Cape Fear
(Location)

on 4-7, 1995.

Alma T. Hazlett
(Recipient Signature)

copies to: field files
central files
Regional Manager

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Solid Waste Management
James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary

DEHNR

_____

_____

_____

_____

_____

Re: Compliance Evaluation Inspection.

Dear _____:

On _____ Flint Worrell of the Hazardous Waste Section (Compliance Unit) conducted an RCRA inspection of your facility. The inspection revealed compliance with these regulations. If you have any questions regarding this inspection, please call me at (919) 486-1191.

Comments:_____

Sincerely,

L. F. Worrell
Hazardous Waste Section
Solid Waste Division

LFW/lsd

P.O. Box 27687, Raleigh, North Carolina 27611-7687 Telephone: (919) 733-4984, 733-0692 Fax: (919) 733-0513

Region IV CM&E Form - Side A

EPA ID: NCD047369046

DATA ENTRY PERSONNEL
Submitted by: ______ Date: ______
Entered by: ______ Date: ______

Facility Name: Dupont - Cape Fear Plant   City: Navassa

EVALUATION DATA: New: __ Change: __ Delete: __ (——— : Required)

Agency: S Date: Mo. 05 / Day 04 / Year 95 Type: OTH

Control Number
Data Entry Personnel

Person: 009 BRANCH HW REASON

Coverage Areas: (E: Evaluated NE: Not Evaluated NA: Not Applic. D:Del.)

Generators: GBF, GER, GGR, GLB, GMR, GOR, GPT, GRR, GSC, GSO

Transporters: TGR, TMR, TOR, TRR, TWD

USED OIL: TUO, TFO, BUO, MUO, PUO, RUO

TSD's: DBF, DCH, DCL, DCP, DFR, DGS, DGH, DIN, DLB, DLF, DLT, DHC, DMR, DOR, DOT, DPB, DPP, DSI, DTR, DTT, DWP

COMPLIANCE SCHEDULE (TSD, GEN, TRANS.)
FEA   CAS

Evaluation Comments: (72) 1: ______
2: ______

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: Type: Date (mdy) Determined: / / Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- / / --- Actual --- / /
Reg. Type: Reg. Description (30): ______
Comment (72): ______

#__ Agency: Type: Date (mdy) Determined: / / Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- / / --- Actual --- / /
Reg. Type: Reg. Description (30): ______
Comment (72): ______

#__ Agency: Type: Date (mdy) Determined: / / Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- / / --- Actual --- / /
Reg. Type: Reg. Description (30): ______
Comment (72): ______

Continue violation data if necessary -

DEPARTMENT OF ENVIRONMENT, HEALTH and NATURAL RESOURCES
DIVISION OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE SECTION
ACTIVITY REPORT

Subject anonymous Complaint Spill @ Dupont Cape Fear Cobalt Manganese Acid Flurry

Location Misery Road Navassa Community Date 05-09-95

Address P.O. Box 2042 Time spent two hours

City Wilmington State N.C. Zip 28402

By whom L.F. Worrell waste mgmt specialist

Persons contacted Althea Hayleff Dacron Fibers Environmental leader
(Owner, agent, tenant, manager, other)

Reason for visit anonymous Complaint

Copies to L.D. Perry eastern area Supervisor

REPORT:

Anonymous Complaint stated at the Dupont Site in Leland there was a spill of Cobalt Maganese Acid Flurry that escaped the treatment area. This Complaint was passed to John Anderson Air Quality - then John Crowder Solid Waste then to me and a site visit was made on 05-09-95. This incident was Reported as a Acetic Acid Spill on 3-05-95 in their Incident Report file part of their operating Report. The Spill was approx 4,000 gallons for 3 days 12,000 gallons total PH above 2 that flowed into their Pre treatment System then to Treatment plant via their NPDES

Activity Type: Check Most Appropriate

1. Complaint	✓	5. Presentation	
2. Emergency Response		6. Training	
3. Technical Assistance		7. Meeting	
4. Remedial Action (other than WP(CA)		8. Other	

Region IV CM&E Form - Side A

Submitted by: _____ Date: _____

Entered by: _____ Date: _____

EPA ID: N C D 0 4 7 3 6 9 0 4 6

Facility Name: Dupont E.I De Nemours & Co. CF City: Phoenix

EVALUATION DATA: New: __ Change: __ Delete: __ (═══ : Required)

Agency: 2 Date: Mo. 0 3 / Day 0 7 / Year 9 5 Type: C E I

Control Number Data Entry Personnel

Person: 0 0 9 Reason:

Coverage Areas: (E: Evaluated NE: Not Evaluated NA: Not Applic. D: Del.)

Generators

GER	
GGR	E E
GLB	
GSQ	
GMR	
GOR	
GPT	
GRR	E E
GSC	

Transporters

TGR	
TMR	
TOR	
TRR	
TWD	

TSD's

DCH	DLB	DPB
DCL	DLF	DPP
DCP	DLT	DSI
DFR	DMC	DTR
DGS	DMR	DTT
DGW	DOR	DWP
DIN	DOT	

Compliance Schedule (TSD, Gen., Trans.)

FEA CAS

Evaluation Comments: (72) 1 : _____

2 : _____

VIOLATION DATA: New: __ Change: __ Delete: __

#1 Agency: S Type: ___ Date (mdy) Determined: __/__/__ Class: _

Priority: _ Branch: ___ Person: ___ Seq. Number (Data Entry): ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual --- __/__/__

Reg. Type: ___ Reg. Description (30): _____

Comment (72): _____

#2 Agency: _ Type: ___ Date (mdy) Determined: __/__/__ Class: _

Priority: _ Branch: ___ Person: ___ Seq. Number (Data Entry): ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual --- __/__/__

Reg. Type: ___ Reg. Description (30): _____

Comment (72): _____

#__ Agency: _ Type: ___ Date (mdy) Determined: __/__/__ Class: _

Priority: _ Branch: ___ Person: ___ Seq. Number (Data Entry): ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual --- __/__/__

Reg. Type: ___ Reg. Description (30): _____

Comment (72): _____

Continue violation data on Side B if necessary -

RCRA INSPECTION REPORT

X = violation noted; NA = not applicable

Facility Name: Dupont E.I De Nemours & Co.
Location: State Road 1426 Phocnix
Mailing Address: P.O. Box 2042 Wilmington, N.C. 28402
ID #: NCD 047 369 046 **Phone number:** 910/371-4225
Contact/Title: Althea Hayleff fibers environmental leader / Kristin Beck specialist
Inspection Date: 03-07-95 **Last Inspection:** 02-08-94
Status: TSDF LQG **Type of Inspection:** CEI
Inspector(s): L.F. Worrell waste management Specialist
Present at Inspection: Althea Hayleff, Kristin Beck, Ricky Stroupe
Type of business: chemical manufachir of dacron polyester yarn and staple from DMT TPA
Wastes Generated: paint thinners, agitene, acetic acide xylene, methland mixture, lube oil and hydrolic fluid mixed with halogenated solvents xylene mixtures, freon & lube mixture, phoshoric acid & glycol precipitator ash with chrome, ethylene glycol

Manifests:
Approved transporters? yes Approved TSD's? yes
Signed Copies? yes Filled out correctly? yes
LDR notification attached? yes

TSDF Dupont Port chartrain Works LAD 001 890 367

Waste Minimization: written plan with quartly updates

Inspection Records:
Evidence that inspections are conducted yes kept at the TSDF storage area shed.

Contingency Plan:
On site? ✓
Any changes to facility/processes or Emergency coordinator since last review? NO
Contingency plan implemented? No (If yes, was it adequate?)
Same emergency coor. Al Mays / Bob DeHaas

Training Records:
Certified training documents available? yes
Any new employees since last review? NO
Evidence of improper/inadequate training? 265.16(c)
annual Review for two employees has expired
Bobby Barsh and Carnell Jacobs See NOV 95-450

Facility Name: Dupont Cape Fear Plant
ID #: NCD 047 369 046 Inspection Date: 03-07-95

Employee interviews:
Name(s) Kristin Beck / Stephanie Moore Trained? ✓
Ricky Stroupe

Annual Report submitted? ✓

Emergency preparedness:
*Facility maintained and operated to prevent releases? ✓
Internal communications or alarm present? ✓
Device in area of operation to summon outside aid? ✓
Portable fire extinguishers and/or fire control equipment? ✓
Spill control equipment? ✓
Adequate water volume, foam equipment, or auto sprinklers? ✓
All equipment/alarms tested and maintained? ✓
All personnel handling HW have access to alarm/device? ✓
*Aisle space in areas of facility operation? ✓
Agreements with Emergency Responders? ✓
plan located Safety Officers office
at the guard office at gate
emergency coordinator's office At Many
at Storage facility

Satellite Accumulation Area(s): Location(s):
at both Cabs Construction plant Shed
precipator Ash collectors Dacron Storage
aersol Can puncher Incinerator

Containers: closed? ✓
labeled? ✓
< 55 gallons?

Storage Areas: Description: Permitted Storage area fenced area
New Roofed area

Containers: closed? ✓ aisle space? ✓
labeled? ✓ evidence of release? X
dated? ✓ < 90 days? ✓
good condition? X leaker See NOV

Other HW units: (applicable regulations)
Description of unit NO

External facility condition: OK

Facility Name: DuPont Cape Fear Plant
ID #: NCD 047 369 046
Inspection Date: 03-07-95

Site Deficiencies:

See NOV 95-450

Kent Wendell — 03-07-95 (Date) — Althea Hayleff

State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
Hazardous Waste Section

SITE SAFETY PLAN (SSP) UPDATE FORM
(Regulated Facility)

(A) Facility Name: DuPont Co. Cape Fear Plant EPA ID# NCD 047 369 046

Address: P.O. Box 2042 Wilmington N.C. 28402 Phone # 910 371-4546

Contact: Althrea Hayleff fibres environmental leader Phone # 910 371-4225

Facility Safety Designee: Frank Davis Saf. Leader 910 371-4223

HWS Staff: Flint Worrell Date: 03-07-95

(B) REVIEW AND CHANGES

SSP Reviewed: 1995 SSP Changed: — (1) SSP Unchanged: —

Comments: _____

(1) NOTE: Any changes made in the facility process descriptions or health and safety considerations section of the SSP must be shown on a new SSP.

(C) EMERGENCY INFORMATION

Ambulance: SAMC Telephone # —

Hospital: SAMC Telephone # —

Police: SAMC Telephone # —

Fire Dept.: SAMC Telephone # —

Fire & Emergency Signals Reviewed: 1995

Site Evacuation Plan Reviewed: 1995

SAFETY OFFICER: _____ DATE: _____

(UPDATED.SSP/Revised 8/93)

Solid Waste Management Division
Hazardous Waste Section

NOTICE OF VIOLATION

To: E.I. Dupont De Nemours & Co.
Address: P.O. Box 2092
Wilmington, N.C. 28402
EPA ID# NCD 047 369 046

Docket # 95-450
Inspection Date 3-7-95
Facility Type LQG - TSDF

On December 18, 1980, the State of North Carolina, Hazardous Waste Section (State) was authorized to operate the State RCRA hazardous waste program under the Solid Waste Management Act (ACT), N.C.G.S. 130A, Article 9 and rules promulgated thereto at 15A NCAC 13A (Rules) in lieu of the federal RCRA program.

On 3-7, 1995, L.F. Worrell representing the N.C. Hazardous Waste Section, inspected your facility for compliance with North Carolina Hazardous Waste Management Rules. During that inspection, the following violations were noted:

Citation	Specifics
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262.34	- Subpart I hazardous waste stored in containers. A hole in precipator Ash container, needs replacing.

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3-7-95
(Date)

L.F. Worrell
N.C. Hazardous Waste Section

I, L.F. Worrell, hereby certify that I have personally served a copy of this Notice on:

3-7-95
(Name)

at State Road 1426 Phoenix site - Dupont Cape Fear
(Location)

on 4-7, 1995

Allen T. Hayletts
(Recipient Signature)

copies to: field files
central files
Regional Manager

E. I. DuPONT CO., CAPE FEAR PLANT
MINIMIZATION PLAN
REGULATED AND TCLP WASTES

REPORT PREPARED BY Stephanie Moore DATE 4-1-94

APPROVED BY M. W. Humphrey
SITE SAFETY, HEALTH & ENVIRONMENTAL LEADER

WASTE #	WASTE	GENERATING AREA	MINIMIZATION PLAN
3	METHANOL MIXTURE F002,D001,D019,D022,D039	D.I. CHEM LAB	o 50 %REDUCTION OF SAMPLE SIZE 1/1/93 o 20 % REDUCTION OF SAMPLE FREQUENCY 1/1/93
5	ACETIC ACID & XYLENE D001,D002	D.I. CHEM LAB	o 50% REDUCTION OF SAMPLE SIZE 1/1/93 o 20% REDUCTION OF SAMPLE FREQUENCY 1/1/93
6	AGITENE D001	D.I. MAINTENANCE TF MAINT - STAPLE SPIN TRUCK SHOP	o REPLACED WITH AXAREL FOR PARTS CLEANING o USE OF FILTER TO PROLONG REUSE o REUSE UNTIL SATURATED WITH OIL
15	TETRACHLOROETHYLENE MIXTURE F002,D0019,D0022,D0039 D0040	FIBERS CHEM LAB	o TETRACHLOROETHYLENE - PLANS TO GO TO FOY ON-LINE MEASUREMENT 1st Q '94 o CARBON TETRACHLORIDE - DISCONTINUED USE FOR FOT'S ON 9/7/93, AA METHOD o METHYLENE CHLORIDE - REDUCE RV SAMPLE FREQUENCY 1ST Q '94
18	PAINT THINNING LIQUID F003,F005,D001,D005, D006,D007,D008,D009,D035	CONST. GARAGE	o REDUCED AMOUNT OF PAINTING BY 75 % 1/1/93 o SOLVENT RECYCLE THINNER USED TO RECYLCE PAINT THINNER o WATER BASED PAINTS USED AS MUCH AS POSSIBLE
21	METHANOL D001		o RECOVERED 100 %
27H	LUBE OIL & HYDRAULIC FLUID (MAY CONTAIN HALOGENATED SOLVENTS) F001	FIBERS MAINT	o GENERATED ONLY WHEN INADVERTEDLY MIXED WITH HALOGENATED MATERIALS
30	GASOLINE MIXTURE D001	CONST. GARAGE	o REDUCTION OF OIL CHANGES TO EVERY 3 MONTHS 3/1/93
37	XYLENE/DMT/TPA MIXTURE D001	D.I. DMT #2	o NO ACTIVITY
54	FREON 11 & LUBE OIL MIXTURE F001, D040	CENTRAL POWER	o REGULAR MAINTENACE CHECKS ON REFRIGERANT UNITS TO MINIMIZE LEAK REPAIR WORK. o ELIMINATION OF CFC REFRIGERNT BY 12/94

E. I. DuPONT CO., CAPE FEAR PLANT
MINIMIZATION PLAN
REGULATED AND TCLP WASTES

WASTE #	WASTE	GENERATING AREA	MINIMIZATION PLAN
56	GLYCOL & PHOSPHORIC ACID D002	SOL PREP STAPLE CP YARN CP	o RECIRCULATES BACK INTO SYSTEM & MODIFIED SAMPLING PROCEDURES TO PREVENT SPILLS
57	FREON 12 &/OR 22 F001	TF MAIN - H & V	o REGULAR MAINTENANCE ON REFRIGERANT UNITS TO MINIMIZE LEAK REPAIR WORK.
12	PRECIPITATOR ASH D007	D.I. TPA 1 & 2	o SENT TO AGUMET TO RECLAIM METALS SINCE 1991
24	ETHYLENE GLYCOL D004	SOL PREP STAPLE CP YARN CP TANK FARM	o GENERATED ONLY FROM SPILL CLEANUP - RECOVERED 100%

Dupont 047 369 046 910 371-4545

Contact Susan Vladuchicic

Ron Burger - plant manager - Con

Althea Hayleff - fibres envir leader 371-4225

Kristin Becic - environmental specialist 371-5156

Stephanie Moore - Sup. health tech. - 371-4227

Frank Davis - Site Safety & Envi leader 371-4223

manuf - fibre yarn and staple dacron polyester

from DMT & TPA

No bi products

Waste streams Rq to list

last CEI 2/08/94

Annual Reports Step. Moore -

GM forms: (14)

Contingency Plan: locations one with permit in Althea office

updated Names & #s

Guard House,

SPCC plan - Emerg. Coord's

POWER - Al Mays

TERP team trailer - spills Bob DeHaas

Waste Handlers

Fire Brigade Command Center Financial Assurance:

Permit: 1999 extration just done

Will keep copy of Fin. Assurance

Inspect: waste handlers

Al Mays -

Jean Bowen -

Audit-team: twice a year

waste handlers look at Sat. accumulation areas

Waste min. plan:

Ricky Stroupe - Develops plan

group effort - team

All medias involved in plan

October - waste min plan: October 15th submit -

Copy of last min plan:

Training: In house / in school

on system Jean Bowen waste haul coordinator

Brunswick Community College

Specific to HW - not specific to Brunswick College

Change DOT

Manifests

#00001 Dupont Pontchartrain Works LAD001890367

1T 40,860 P

Signs manifest MA Mary Ann Blanchard

In March

F001, 002
003, 005
006

#00002 12 DRUMS

Pontchartrain LA LAD 001 890 367

Wastepaint 10/27/94 C.J. Bowen

93, 92 Kept in Ms Bowen's office

SAT Acc. Areas

Acetic Acid smell

FIBERS

(1) Chem lab. —

2 containers DIC

(2) Intermediate Dacron Storage Accumulation Area

(3) Construction Pad Shed

(4) Aerosol Cans @ Incinerator

Training Records

Gary Smith 5/26/94

* Bobby Barsh - 2/18/94

* Carroll Jacobs - supervisor 2/18/94

Rayfield Daniels 5/26/94

(5) 90 days storage

Precipitator Ash hole in container

1-9-95

Mailing list

guidance documents

Sol & waste section

Financial Assurance

Sonny Cope

Dupont

Fin. Test

closes 49,000

March 31 95

~~Heatcraft~~

GE.

Fin test

Closes 208,275 Mar. 31, 95

Heatcraft

GE

Fin tests

CL 109,950 March 31

PC 587,474

Region IV CM&E Form - Side A

EPA ID: NCD047369046

DATA ENTRY PERSONNEL
Submitted by: ______ Date: ______
Entered by: ______ Date: ______

Facility Name: DUPONT E.I. DE NEMOURS & CO. City: PHOENIX

EVALUATION DATA: New: __ Change: __ Delete: __ (—— : Required)

Agency: 4 Date: Mo. 02 / Day 08 / Year 94 Type: CEI

Control Number Data Entry Personnel

Person: 009 BRANCH HW REASON

Coverage Areas: (E: Evaluated NE: Not Evaluated NA: Not Applic. D:Del.)

Generators: GBF, GER E E, GGR, GLB E, GMR E, GOR, GPT E, GRR E E, GSC, GSQ

Transporters: TGR, TMR, TOR, TRR, TWD

USED OIL: TUO, TFO, BUO, MUO, PUO, RUO

TSD's: DBF, DCH, DCL, DCP, DFR, DGS, DGW, DIN, DLB E, DLF, DLT, DHC, DMR E, DOR, DOT, DPB, DPP, DSI, DTR, DTT, DWP

COMPLIANCE SCHEDULE (TSD, GEN, TRANS.)
FEA CAS

Evaluation Comments: (72) 1 :
2 :

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: Type: Date (mdy) Determined: / / Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- / / --- Actual ---- / /
Reg. Type: Reg. Description (30):
Comment (72):

#__ Agency: Type: Date (mdy) Determined: / / Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- / / --- Actual ---- / /
Reg. Type: Reg. Description (30):
Comment (72):

#__ Agency: Type: Date (mdy) Determined: / / Class:
Priority: Branch: Person: Seq. Number (Data Entry)
Return to Compliance: -- Scheduled -- / / --- Actual ---- / /
Reg. Type: Reg. Description (30):
Comment (72):

Continue violation data if necessary -

State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
Hazardous Waste Section

SITE SAFETY PLAN (SSP) UPDATE FORM
(Regulated Facility)

(A) Facility Name: DUPONT Cape Fear Site EPA ID# NCD 047 369 046

Address: P.O. Box 2542 Wilmington N.C. 28402 Phone # 910 371-4545

Contact: Marshall Humphrey Environmental Coord. Phone # 910 371-4223

Facility Safety Designee: Marshall Humphrey

HWS Staff: L.F. Worrell Waste Mgmt Specialist Date: 2-8-94

(B) REVIEW AND CHANGES

SSP Reviewed: 1993 SSP Changed: 1993 (1) SSP Unchanged: _____

Comments: _____

(1) NOTE: Any changes made in the facility process descriptions or health and safety considerations section of the SSP must be shown on a new SSP.

(C) EMERGENCY INFORMATION

Ambulance: SAME Telephone # —

Hospital: SAME Telephone # —

Police: SAME Telephone # —

Fire Dept.: SAME Telephone # —

Fire & Emergency Signals Reviewed: 1993

Site Evacuation Plan Reviewed: 1993

SAFETY OFFICER: _____ DATE: _____

(UPDATED.SSP/Revised 6/93)

Facility Name: DUPONT CAPE FEAR
ID #: NCD 047 369 046 **Inspection Date:** 2-8-94

Employee interviews:
Name(s) _____ Trained? _____

Annual Report submitted? yes

Emergency preparedness:
*Facility maintained and operated to prevent releases? ✓
Internal communications or alarm present? ✓
Device in area of operation to summon outside aid? ✓
Portable fire extinguishers and/or fire control equipment? ✓
Spill control equipment? ✓
Adequate water volume, foam equipment, or auto sprinklers? ✓
All equipment/alarms tested and maintained? ✓
All personnel handling HW have access to alarm/device? ✓
*Aisle space in areas of facility operation? ✓
Agreements with Emergency Responders? ✓

Jenny Lapp — FA/C PC
Em test C 18,000 Sud lbs March 31, 94

Satellite Accumulation Area(s): Location(s): Cubs, Corbaction Paint Area

Containers: closed? ✓
labeled? ✓
< 55 gallons? ✓

Storage Areas: Description: Designated Area — A new Roof has been installed over the liquid storage.

Containers: closed? ✓ aisle space? ✓
labeled? ✓ evidence of release? ✓ NO
dated? ✓ < 90 days? ✓
good condition? ✓

Other HW units: (applicable regulations)
Description of unit None

External facility condition: OK

Facility Name: DUPONT CAPE FEAR
ID #: NCD 047 369 046 **Inspection Date:** 2-8-94

Site Deficiencies: None Observed

Inspector/Reviewer	Date	Facility Contact
	2-8-94	Marshall Humphrey

RCRA INSPECTION REPORT

X = violation noted; NA = not applicable

Facility Name: DUPONT EI DE NEMOURS & CO CAPE FEAR
Location: State Road 1426 Phoenix
Mailing Address: P.O. Box 2042 Wilmington N.C. 28402
ID #: NCD 047 369 046 Phone number: 910 371-4545
Contact/Title: Marshal Humphrey Environmental Coordinator
Inspection Date: 2-8-94 Last Inspection:
Status: LQG - TSDF Storage Type of Inspection: CEI-UNA
Inspector(s): L.F. Worrell Waste mgmt Specialist
Present at Inspection: Marshal Humphrey
Type of business: Chemical Comp. Manf. DMT, TPA
Wastes Generated: Plant Related Materials, Lab waste Methylene Chloride Freon 11, Methanol, 1,1,1 - TCE

Manifests:
Approved transporters? ✓ Approved TSD's? ✓
Signed Copies? ✓ Filled out correctly?
LDR notification attached? ✓

Waste Minimization: Written plan with annual Review

Inspection Records:
Evidence that inspections are conducted ✓ Yes Records @ Incinerator Building Office.

Contingency Plan:
On site? ✓
Any changes to facility/processes or Emergency coordinator since last review? NO
Contingency plan implemented? NO (if yes, was it adequate?)

Training Records:
Certified training documents available? ✓ Yes
Any new employees since last review? ✓ Yes
Evidence of improper/inadequate training? NO
Training done offsite work shops — Community Colleges

RCRA INSPECTION REPORT

1) FACILITY INFORMATION

DuPont Cape Fear Plant
State Road 1426, Phoenix
Wilmington N.C.
NCD 041 369 048 Brunswick County

2) FACILITY CONTACT

Ron Burger - plant manager for site
919-371-4545

3) SURVEY PARTICIPANTS

Marshall Humphry - Environmental/Safety Manager Dupont
L.F. Worrell - Waste Management Specialist NC DEHNR

4) DATE OF INSPECTION

March 22nd 1993

5) PURPOSE OF SURVEY

Compliance Evaluation Inspection - Unannounced -

6) FACILITY DESCRIPTION

Dupont Cape Fear Plant site is located next to the Cape Fear River, Brunswick County Phoenix Community. At this site the manufacture of DMT, TPA, Chemical Business and Staple and Continuous Spun Businesses are the primary purpose. Raw paraxylene and Methanol are stored in large tanks on the river side of the property. The large waste streams of Methylene Chloride and Paint Related waste comprise the bulk of waste. Dupont has a Storage Permit for this Plant. The majority of the waste is sent to their treatment facility in Pontchartrain LA - LAD 001898367. All storage is in 55 gallon containers, and then these containers are pumped into a tanker (Dupont truck) then transported to the facility. Dupont has spent 80,000 dollars in upgrading their storage pad. They have installed a cover and sides over the existing pad. A nice new and needed improvement. Emergency Coordinators — Cliff Blick - Bob Dehause Al Macy - Training Officer and Manifests - Al Macy. Inspections @ the storage Al Macy - ... Closure cost 48,000. This years update.

DH324

7) **WASTE MINIMIZATION**

In Compliance with rules for certification annual update. Recordkeeping and Solid waste Storage.

8) **SITE DEFICIENCIES**

None, In Compliance

10) **RECOMMENDATIONS**

① More frequent inspections of accumulation - Reads - Part Contractors
② Annual training more comprehensive

11) **SIGNED**

H. Rikell
INSPECTOR / REVIEWER

Marshall Hopkins
FACILITY CONTACT

3-22-93
DATE

DH324

DuPont Cape Fear Plant
P.O. Box 2042
Wilmington, North Carolina 28402

DuPont Cape Fear Plant

January 19, 1995

Mr. Wayne Cook
Environmental Regulatory Supervisor
Air Quality Section
North Carolina DEHNR
127 Cardinal Drive Extension
Wilmington, NC 28405

Dear Sir:

This letter is to inform you of changes in the Environmental Group at DuPont's Cape Fear site.

Effective, October 1, 1994, I was assigned Safety Environmental Leader vice Jimmy McLawhorn.

Effective November 30, 1994, Marshall Humphrey, Dacron (R) Fibers Environmental Leader retired from the DuPont Company. Effective October 1, 1994, Althea T. Haylett was assigned Dacron (R) Fibers Environmental Leader.

Restructuring of the group by media resulted in the following structure:

Name	Responsibility	Phone Number
Penny Mahoney	Site Air	(910) 371-5232
	Intermediates Air/Waste/Water Issues	
	Dacron (R) Intermediates Environmental Leader	
Althea Haylett	Site Waste	(910) 371-4225
	Site Landfills	
	Site Waste Water	
	Site Storm Water	
	Dacron (R) Fibers Environmental Leader	
Kristin Beck	Site Groundwater	(910) 371-5156
	Site SARA	
	Fibers Air Issues	
	Dacron (R) Fibers Environmental Specialist	

Each member of the group is the primary contact for the responsibility listed. However, if unavailable, please feel free to contact another member of the group.

We look forward to continued demonstration of DuPont's commitment to the environment. If I, or anyone on the Environmental Team can be of assistance, I can be reached at (910) 371-4223.

Sincerely,

Frank Davis

Frank Davis
Safety & Environmental Leader

cc: Dave Adkins
John Anderson
Ed Beck
Steve Boone
John Crowder
Steve Long
Rick Shivar
Charlie Stehman
Mike Williams
Flint Worrell

RCRA CEI CNA
2/8/94

LFW
2/8/94

Dupont Brunswick Co.

* Al Mag Manifests. CDR.

* Waste Min. Plan. -- has plan. State request public document - 94 to public plan extensive list of waste / char. / costs - costs of training - forecast cost.

TSD - Corp. Commitment - EPA 199 base - 2000

280,000 lbs → Corp. Commitment

CEO - voluntary for 94 - Listed in Fed. Register accomodate very small in nature -

(V) Training - Haz. waste Brunswick Tech. Contractors Large turnover

* char. waste / haz. waste Report / Sign manifest / handlers /

↓ Incin.

* Logs.

Marshall Humphries
Stephanie Moore

(V) Contingency Plan.

Haz. Waste Area

Oil Spill Cont. Plan Identified to HW Cont.

(V) Training haz. waste handlers (2) incinerators

Gary Smith

Bruce -

Contractor Set. Area inside New Construction

~~Excavate~~ - IN Pro Pack / Waste

X Training Records to be sent.

New format to document records

John Anderson Q Air Quality

TPA NO DMJT

TRA Cobalt Recovery 20 M pounds @ Landfill to be Recovered

Furnace abator

Bruce Blackbrook

~~International~~ Headquarters

Intke.

(1) Taneda - Report - Not @ FRO yet called Linda Culpepper
P&W Oil Comp. 371-0821
(SAS)

371-2325

(fire)
(2) Jacksonville N.C.
Mike Kelly anonymous
foam - dioxin
evaluate trying to get rid
Advance Chem
2013 Lejeune Bld.
577-6200

(3) Call Doug Gillett lead abatement foam
where did lead go.

Cape Fear Plant
Wilmington, North Carolina
February 28, 1995

TO: F. W. DAVIS
A. T. HAYLETT
J. G. RICHARDSON
J. H. WHITE

FROM: S. MOORE

1994 ANNUAL HAZARDOUS WASTE REPORT

DuPont Cape Fear Plant
P.O. Box 2042
Wilmington, North Carolina 28402

DuPont Cape Fear Plant

February 28, 1995

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Jerome H. Rhodes, Chief
Hazardous Waste Section
Solid Waste Management Division
N.C Department of EHNR
P.O. Box 27687
Raleigh, NC 27611-7687

1994 Annual Hazardous Waste Report
E. I. Dupont De Nemours & Co., Cape Fear Plant
EPA ID No, NCD047369046
Ref: Your 12/5/94 letter to us, same subject

Dear Mr. Rhodes:

As requested, attached is our 1994 Annual Hazardous Waste Report signed by our Site Safety & Environmental Leader, F. W. Davis. This report includes all "Subpart C" hazardous wastes that were generated and stored on-site for subsequent handling by an off-site EPA approved T/S/D facility.

Should you have any questions please contact Stephanie Moore, Safety, Health & Environmental (SHE) Technician on (910) 371-4227.

Sincerely,

Frank W. Davis

Frank W. Davis
Site Safety & Environmental Leader

FD:sm

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
EP DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
PO BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1994 Hazardous Waste Report

FORM IC

IDENTIFICATION AND CERTIFICATION

INSTRUCTIONS: Read the detailed instructions beginning on page 9 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I Site name and location address. Complete A through H. Check the box ☐ in items A, C, E, F, G, and H if same as label; if different, enter corrections. If label is absent, enter information. Instruction page 10.

A. EPA ID No. Same as label ☐ or → N C D 0 4 7 3 6 9 0 4 6

B. County BRUNSWICK

C. Site/company name Same as label ☑ or →

D. Has the site name associated with this EPA ID changed since 1993? ☐ 1 Yes ☐ 2 No

E. Street name and number. If not applicable, enter industrial park, building name, or other physical location description. Same as label ☐ or → STATE ROAD 1426

F. City, town, village, etc. Same as label ☐ or → 5 MILES NORTH OF LELAND

G. State Same as label N C

H. Zip Code Same as label 2 8 4 5 1 - _ _ _ _

Sec. II Mailing address of site. Instruction page 10.

A. Is the mailing address the same as the location address? ☐ 1 Yes (SKIP TO SEC. III) ☑ 2 No (GO TO BOX B)

B. Number and street name of mailing address P.O. BOX 2042

C. City, town, village, etc. WILMINGTON

D. State N C

E. Zip Code 2 8 4 0 2 - _ _ _ _

Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instruction page 10.

A. Please print: Last Name MOORE First name STEPHANIE M.I.

B. Title SAFETY, HEALTH & ENVIRONMENTAL (SH&E) TECHNICIAN

C. Telephone 9 1 0 3 7 1 - 4 2 2 7 Extension _ _ _ _

Sec. IV "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties under Section 3008 of the Resource Conservation and Recovery Act for submitting false information, including the possibility of fine and imprisonment for knowing violations."

A. Please print: Last Name DAVIS First name FRANK M.I. W

B. Title SITE SAFETY & ENVIRONMENTAL LEADER

C. Signature Frank W. Davis

D. Date of signature 0 3 2 8 9 5 MO. DAY YR.

Over →

Sec.V - Generator Status

EPA ID NO. N,C,D, 0,4,7, 3,6,9, 0,4,6

A. 1994 RCRA generator status Instruction page 10. (CHECK ONE BOX BELOW)	B. Reason for not generating Page 12. (CHECK ALL THAT APPLY)	
☑ 1 LQG ☐ 2 SQG ☐ 3 CESQG — SKIP to SEC. VI ☐ 4 Non generator (Continue to Box B)	☐ 1 Never generated ☐ 2 Out of business ☐ 3 Only excluded or delisted waste ☐ 4 Only non-hazardous waste	☐ 5 Periodic or occasional generator ☐ 6 Waste minimization activity ☐ 7 Other (SPECIFY COMMENTS IN BOX BELOW)

Sec.VI - On-Site Waste Management Status

A. Storage subject to RCRA permitting requirements Page 13	B. Treatment, disposal, or recycling subject to RCRA permitting requirements Page 13.	C. RCRA-exempt treatment, disposal, or recycling Page 13.
3	1	1

Sec.VII - Waste Minimization Activity during 1993 or 1994

A. Did this site begin or expand a source reduction activity during 1993 or 1994? Page 14.	B. Did this site begin or expand a recycling activity during 1993 or 1994? Page 15.	C. Did this site systematically investigate opportunities for source reduction or recycling during 1993 or 1994? Page 15.
☑ 1 Yes ☐ 2 No	☑ 1 Yes ☐ 2 No	☑ 1 Yes ☐ 2 No

D. Did any of the factors listed below delay or limit this site's ability to initiate new or additional source reduction activities in 1993 or 1994? Page 15 (CHECK YES OR NO FOR EACH ITEM)

Yes	No		
☑ 1	☐ 2	a.	Insufficient capital to install new source reduction equipment or implement new source reduction practices
☑ 1	☐ 2	b.	Lack of technical information on source reduction techniques applicable to the specific production processes
☑ 1	☐ 2	c.	Source reduction is not economically feasible: cost savings in waste management or production will not recover the capital investment
☐ 1	☑ 2	d.	Concern that product quality may decline as a result of source reduction
☐ 1	☑ 2	e.	Technical limitations of the production processes
☐ 1	☑ 2	f.	Permitting burdens
☐ 1	☑ 2	g.	Source reduction previously implemented - additional reduction does not appear to be technically feasible
☐ 1	☑ 2	h.	Source reduction previously implemented - additional reduction does not appear to be economically feasible
☐ 1	☑ 2	i.	Source reduction previously implemented - additional reduction does not appear to be feasible due to permitting requirements
☐ 1	☑ 2	j.	Other (SPECIFY COMMENTS IN BOX BELOW)

E. Did any of the factors listed below delay or limit the site's ability to initiate new or additional on-site or off-site recycling activities during 1993 or 1994? Page 15. (CHECK YES OR NO FOR EACH ITEM)

Yes	No			Yes	No		
☐ 1	☑ 2	a.	Insufficient capital to install new recycling equipment or implement new recycling practice	☐ 1	☑ 2	g.	Technical limitations of production processes inhibit shipments off-site for recycling
☐ 1	☑ 2	b.	Lack of technical information on recycling techniques applicable to this site's specific production process	☑ 1	☐ 2	h.	Technical limitations of production processes inhibit on-site recycling
☐ 1	☑ 2	c.	Recycling is not economically feasible: cost savings in waste management will not recover the capital investment	☐ 1	☑ 2	i.	Permitting burdens inhibit recycling
☑ 1	☐ 2	d.	Concern that product quality may decline as a result of recycling	☐ 1	☑ 2	j.	Lack of permitted off-site recycling facilities
☐ 1	☑ 2	e.	Requirements to manifest wastes inhibit shipments of off-site for recycling	☐ 1	☑ 2	k.	Unable to identify a market for recycled materials
☐ 1	☑ 2	f.	Financial liability provisions inhibit shipments off-site for recycling	☑ 1	☐ 2	l.	Recycling previously implemented - additional recycling does not appear to be technically feasible
				☑ 1	☑ 2	m.	Recycling previously implemented - additional recycling does not appear to be economically feasible
				☐ 1	☑ 2	n.	Recycling previously implemented - additional recycling does not appear to be feasible due to permitting requirements
				☐ 1	☑ 2	o.	Other (SPECIFY COMMENTS IN BOX BELOW)

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
PO BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1994 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #3 - SPENT HALOGENATED SOLVENT; METHANOL MIXTURE, LABORATORY WASTE

B. EPA hazardous waste code Page 19. F002 D001 D019 D022 D039

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	M	A94	1	B202	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
3406.0	3610.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M		M	

Sec. III

A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LAD001890367	M041	2	5298.0
Site 2		M		

Sec. IV

A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
M M M M	☐ 1 Yes ☐ 2 No			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
PO BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1994 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #5 IGNITABLE SPENT SOLVENT; ACETIC ACID + XYLENE MIXTURE, LABORATORY WASTE

B. EPA hazardous waste code Page 19. D001, D002, NA, NA, NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	[M]	[A] 94	1	[B] 203	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
425.0	0.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
[M]		[M]	

Sec. III

A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LAD 001 890 367	[M] 041	2	162.0
Site 2		[M]		

Sec. IV

A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
[M] [M] [M] [M]	☐ 1 Yes ☐ 2 No			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
PO BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1994 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #40 - IGNITABLE SOLVENT; LUBE OIL AND ACETONE MIXTURE FROM PARTS CLEANING AND DEGREASING OPERATIONS

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
D001 NA NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	/	A I9	1	B 206	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
2034.	2045.0	1 . □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M	.	M	.

Sec. III

A. Was any of this waste shipped off-site in 1994 Instruction page 23. □ 1 Yes (CONTINUE TO BOX B) □ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LA D 001 890 367	M 041	2	4310.0
Site 2		M		.

Sec. IV

A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
M M M M	□ 1 Yes □ 2 No	.	.	.

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

NCD-047-369-046
DAVIS, F.W. - SITE ENVIRONMENTAL LEADER
DUPONT EI DE NEMOURS & CO-CAPE FEAR PLANT
PO BOX 2042
WILMINGTON NC 28402

U.S. ENVIRONMENTAL PROTECTION AGENCY

1994 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #12 - PRECIPITATOR ASH FROM INCINERATOR OPERATION

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
D007 NA / NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	M	A 74	1	B 803	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
10917.0	4500.0	1 / .	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)
		☐ 1 lbs/gal ☐ 2 sg	

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M	.	M	.

Sec. III

A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1		M		.
Site 2		M		.

Sec. IV

A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
W W / W W	☐ 1 Yes ☐ 2 No	.	.	.

Comments:

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1994 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #16 - SPENT HALOGENATED SOLVENT; TETRACHLOROETHYLENE MIXTURE, LABORATORY WASTE

B. EPA hazardous waste code Page 19. F002, D019, D022, D039, D040

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	M	A 94	1	B 202	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
26590.0	17687.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M		M	

Sec. III

A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LAD 001 890 367	M 041	2	19185.0
Site 2		M		

Sec. IV

A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☒ 1 Yes (CONTINUE TO SYSTEM 1) ☐ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
M 19* M / M M	☐ 1 Yes ☒ 2 No	0.0	1.0	8903.0

Comments: *SECTION IVB - W19 - DECREASED SAMPLE SIZE FOR LABORATORY ANALYSES

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WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18. PLANT WASTE # 18 - SPENT NON-HALOGENATED SOLVENTS; PAINT THINNING LIQUID

B. EPA hazardous waste code Page 19. F003 F005 D001 D005 D006 *

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code Page 19 / System Type	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824		A21	1	B211	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
2746.0	1230.0	1	1 Yes (CONTINUE TO SYSTEM 1)
		1 lbs/gal 2 sg	2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994

ON-SITE PROCESS SYSTEM 2

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994

Sec. III A. Was any of this waste shipped off-site in 1994 Instruction page 23. 1 Yes (CONTINUE TO BOX B) 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1				
Site 2				

Sec. IV A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. 1 Yes (CONTINUE TO SYSTEM 1) 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other affects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
	1 Yes 2 No			

Comments: * SECTION I.B. D007, D008, D035

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WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18.
PLANT WASTE #21 - SPENT METHANOL FLAMMABLE LIQUID

B. EPA hazardous waste code Page 19.
D001 NA
NA NA NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2821	M	A 49 *	1	B 219 **	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
0.0	827.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M	

ON-SITE PROCESS SYSTEM 2

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M	

Sec.III

A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LA 000 189 036 7	M 041	2	827.0
Site 2		M		

Sec. IV

A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
M M M M	☐ 1 Yes ☐ 2 No			

Comments: * SECTION I. F. A49 - POLYESTER PRODUCTION BY-PRODUCT
** SECTION I. H. B219 - POLYESTER PRODUCTION BY-PRODUCT

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WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18. PLANT WASTE #24 - SPENT ETHYLENE GLYCOL MIXTURE

B. EPA hazardous waste code Page 19. D004 NA / NA NA NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2821	1 / M	A36	1	B219*	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
75961.0	38561.9	1 / . □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M	.	M	.

Sec.III A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☒ 1 Yes (CONTINUE TO BOX B) □ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	ALD 000 622 464	M 061	1	37717.0
Site 2		M		.

Sec. IV A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
W W / W W	□ 1 Yes □ 2 No	.	.	.

Comments: *SECTION I.H. B219 - POLYESTER PRODUCTION RESIDUAL LIQUID

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1994 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18. PLANT WASTE #24A - GLYCOL REFINING TAILS

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
D004, NA, NA, NA, NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	M	A36	1	B403	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
343982.0	0.0	1 / . □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M	.	M	.

Sec. III A. Was any of this waste shipped off-site in 1994 Instruction page 23. □ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1		M		.
Site 2		M		.

Sec. IV A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☒ 1 Yes (CONTINUE TO SYSTEM 1) □ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
N 12 N / N / N /	□ 1 Yes ☒ 2 No	NA .	NA .	NA .

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1994 Hazardous Waste Report

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18. PLANT WASTE #30 - SPENT OIL + GASOLINE MIXTURE

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.	D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
D001, NA, NA, NA, NA		2824	/	A54	1	B206	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
2619.0	4310.0	1 / □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M		M	

Sec.III A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☒ 1 Yes (CONTINUE TO BOX B) □ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LAD 001 890 367	M 041	2	5099.0
Site 2		M		

Sec. IV A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
W W / W W	□ 1 Yes □ 2 No			

Comments:

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1994 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I A. Waste description - Instruction page 18.
PLANT WASTE #37 - SPENT XYLENE / DMT / TPA MIXTURE

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
D001 NA NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2865	M	A49*	1	B409**	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
81,652.0	450.0	1 / □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M		M	

Sec. III A. Was any of this waste shipped off-site in 1994 Instruction page 23. □ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1		M		
Site 2		M		

Sec. IV A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. □ 1 Yes (CONTINUE TO SYSTEM 1) * ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
M M M M	□ 1 Yes □ 2 No			

Comments:
*SECTION IV.A. - NO MINIMIZATION ACTIVITIES. PREVIOUS YEAR QUANTITY WAS FROM A NON-ROUTINE TANK CLEAN-OUT ACTIVITY

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FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I — A. Waste description - Instruction page 18. PLANT WASTE #64 SPENT LOBE OIL & HYDRAULIC FLUID / FREON II MIXTURE

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
F001 D040 NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	1 / M	A54	1	B206	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
409.0	0.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M		M	

Sec. III — A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LAD001890367	M041	2	409.0
Site 2		M		

Sec. IV — A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
W W / W W	☐ 1 Yes ☐ 2 No			

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WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18. PLANT WASTE #56- SPENT ETHYLENE GLYCOL + PHOSPHORIC ACID MIXTURE

B. EPA hazardous waste code Page 19. D002 NA / NA NA NA

C. State hazardous waste code Page 19.

D. SIC code Page 19.	E. Origin code Page 19 / System Type	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2821	1 / M	A 49*	1	B 319**	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
3856.0	0.0	1 / □ 1 lbs/gal □ 2 sg	□ 1 Yes (CONTINUE TO SYSTEM 1) ☑ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M	

ON-SITE PROCESS SYSTEM 2

On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M	

Sec. III

A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☑ 1 Yes (CONTINUE TO BOX B) □ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LA000189036T	M 041	2	3856.0
Site 2		M		

Sec. IV

A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☑ 1 Yes (CONTINUE TO SYSTEM 1) □ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
W 01 W W W W	□ 1 Yes ☑ 2 No	NA	NA	NA

Comments: * SECTION I.F. -A49- POLYESTER PRODUCTION RESIDUAL
** SECTION I.H. B219- POLYESTER PRODUCTION RESIDUAL

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WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 16 of the 1993 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description - Instruction page 18.
PLANT WASTE #57 - SPENT LUBE OIL + HYDRAULIC FLUID / FREON 12 + 22 MIXTURE

B. EPA hazardous waste code Page 19.	C. State hazardous waste code Page 19.
F001 NA NA NA NA	

D. SIC code Page 19.	E. Origin code / System Type Page 19	F. Source code Page 20.	G. Point of measurement Page 20.	H. Form code Page 20.	I. RCRA - radioactive mixed Page 20.
2824	1 / M	A 54	1	B 206	2

Sec. II

A. Quantity generated in 1993 Instruction Page 21.	B. Quantity generated in 1994 Page 21.	C. UOM Page 21. / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 21.
796.0	620.0	1 / ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (SKIP TO SEC. III)

ON-SITE PROCESS SYSTEM 1		ON-SITE PROCESS SYSTEM 2	
On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994	On-site process system type Page 22.	Quantity treated, disposed, or recycled on site in 1994
M		M	

Sec. III

A. Was any of this waste shipped off-site in 1994 Instruction page 23. ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC IV)

	B. EPA ID No. of facility waste was shipped to Page 23.	C. System type shipped to Page 23.	D. Off-site availability code Page 23.	E. Total quantity shipped in 1994 Page 23.
Site 1	LA 000 189 036 7	M 041	2	748.0
Site 2		M		

Sec. IV

A. Did new activities in 1994 result in minimization of this waste? Instruction page 24. ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 24.	C. Other effects Page 24.	D. Quantity recycled in 1994 due to new activities Page 25.	E. Activity/production index Page 25.	F. 1994 source reduction quantity Page 26.
W W W W	☐ 1 Yes ☐ 2 No			

Comments:

State of North Carolina
Department of Environment, Health and Natural Resources
Division of Waste Management
Hazardous Waste Section

SITE SAFETY PLAN
(HWS-SSP)

I. ACTIVITY REPORT

(A) Facility Name:_____ EPA#: NCD_____
Address:_____ Phone#_____
Facility Contact:_____ Phone# _____
SSP Prepared By:_____ Date(s)_____

(B) Site Visit * Date(s)	Inspection Type (CME, RFA, ETC.)	Checklist** Modified date(s)	On-Site Safety Designee
_____	_____	_____	_____
_____	_____	_____	_____

* Date(s) before/during field activity.
** Place a double asterisk(**) and date(s) after all modified information, or attach extra page(s).
*** IMPORTANT all activities conducted at RCRA facilities/sites shall require the consent of on-site Safety Designee/Contact.
Site Activity Summary:_____
_____
_____
_____

(C) SITE TOPOGRAPHY: Mountains_____ Rivers____ Valley____ Level____
Slopes____ Urban____ Facility___ Others____
Special Access Requirements:_____

(D) EMERGENCY INFORMATION
Ambulance:_____ Telephone#_____
Hospital:_____ Telephone#_____
Police:_____ Telephone#_____
Fire Department:_____ Telephone#_____
Fire and Emergency Signals reviewed:_____
Site Evacuation plan reviewed:_____

(E) INFORMATION SOURCES
Part B:_____ State:_____ * Contingency Plan:_____
Part A:_____ RFA/I:_____ Closure Plan:_____
*Facility Safety Plan:_____ Other:_____
*Request copy of Facility Safety/Contingency Plan for reference.

(F) PERMITS
Check each possessed and whether current status is interim, etc.
Hazardous Waste:_____ Status:_____
Water:_____ Air:_____ Other:_____

Summary of Regulated Units and SWMUS:
(Indicate number of units)

Landfills:_____ Incinerators:_____ Storage areas:____
Surface:_____Tank farms:_____ Other:_____
Waste Piles:_____ Other Treatment:_____ SWMUS:_____
Description:_____
_____
_____

(G) FACILITY PROCESS DESCRIPTION
Briefly describe the facility production process:

_____
_____
_____
_____
_____
_____

(H) HEALTH AND SAFETY CONSIDERATIONS
Briefly identify hazard type/potential; describe on last page of section (I) if necessary:

Area of Concern	Hazard Potential (1)
Fire and Explosion	_____
Oxygen Deficiency (e.g. confined spaces)	_____
Ionizing Radiation	_____
Biological	_____
Safety (e.g. falls, slips, trips)	_____
Electrical	_____
Noise	_____
Heat or Cold Stress	_____
Chemical Exposure (2)	_____

Hazard summary:_____
_____
_____
_____
_____
_____
_____
_____
_____

Note 1: Subjective evaluation (e.g., minimum, moderate, high, unknown or not applicable) refer to table (2) of categories and potential risks in the HWS Occupational Health and Safety Manual.

Note 2: It is very important that you list all suspected chemical(s) and pathway(s) with sources involved (e.g. using methylene chloride in a degreasing and cleaning process or cyanide salts used in a electroplating process). When referencing sources, it is important that you describe the industrial process within the proximity of your activities (e.g. open vats, confined space, spray booth, etc.) within the facility and/or compound.

(I) Previous Releases, Accidents or Complaints: (yes/no) Corrected

Air, Soil, or Surface Water:_____ _____
Industrial Accidents:_____ _____
Complaints:_____ _____

(J) Air/Environmental Monitoring Program.

Air Monitoring Type (yes/no)	Conducted by	Areas/tasks where needed
Toxic:___	Facility_____	_____
	Contractor___	_____
	Other_____	_____
Explosive/oxygen:___	Facility_____	_____
	Contractor___	_____
	Other_____	_____
Radiation:___	Facility_____	_____
	Contractor___	_____
	Other_____	_____

None____
(if none explain)

_____
_____
_____
_____

(K) SITE SAFETY PLAN REVIEW VERIFICATION- verifying that participant has reviewed site contingency plan or HWS-SSP.

Site Activity Participants:

name: title: signature: date:

_____
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DUPONT

CORPORATE ENVIRONMENTALISM

1993

Progress Report

About the Report

This is the second annual report of DuPont's environmental progress—our commitment to "corporate environmentalism" around the globe.

The report has three sections. The overview tells the environmental story at a glance. It is followed by a more detailed look, organized along the lines of "Responsible Care," the industry-wide program of safety, health and environmental stewardship that is an obligation of membership in the U.S. Chemical Manufacturers Association. Lastly, backup data is presented, including the summary report of independent auditors. Throughout, the report applies the Public Environmental Reporting Initiative (PERI) guidelines for disclosure in environmental reports. DuPont was among the initial eight companies to endorse the PERI guidelines.

We welcome your questions and comments about the report and about our environmental performance. A reply card is attached for your convenience.

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Progress and Challenges

DuPont continued to make progress toward its environmental goals last year, though not yet as rapidly as we would like.

The company has high expectations. Just as our traditional emphasis on safety, aiming for zero injuries and incidents, has led to the finest safety record in industry, our vision for future environmental performance is zero incidents and continual progress toward zero releases and zero waste. Our concern extends across the entire product life cycle, and our environmental standards are global.

These ambitious objectives currently translate into a dozen corporate goals. Here are some of our accomplishments in 1992:

- DuPont's date to phase out production of chlorofluorocarbons (CFCs) for sale in developed countries was advanced one year to year-end 1994. However, based on a December 1993 request from the U.S. government, we will exercise our 1995 CFC production rights as demand dictates to meet the needs of customers who will require CFCs for servicing existing refrigeration and air conditioning equipment and for those medical applications deemed essential by the U.S. government. The transition to alternatives has not proceeded as rapidly as we expected. The U.S. government confirmed this, stating that potential health, environmental and economic impacts require the availability of all CFC producers' 1995 production rights. This was not a decision we made lightly, and we remain committed to helping our U.S. customers make the transition to alternatives as quickly as possible.
- Programs to reduce emissions have focused on pollutants that may pose the greatest risk to human health and the environment. DuPont reduced air toxics by 45 percent and airborne carcinogens by 55 percent between 1987 and the end of 1992. The company met the U.S. EPA's voluntary 33/50 interim goal, achieving a 33 percent reduction of 17 large-volume toxic chemicals from 1988–92.
- A new energy policy, intended to improve efficiency and reduce energy-related emissions, is already showing results. In 1992, company energy use per pound of product was at a record low, achieving more than 20% of our expectations for the decade, and carbon dioxide emissions from manufacturing facilities decreased 3.7 percent.
- Two double-hulled tankers were put into operation in 1992 and two more in 1993. They now make up more than half our fleet. More than 120 double-walled underground storage tanks have been installed at Conoco-owned service stations.
- Of the 740 million pounds of packaging materials shipped to our customers in 1992, 230 million pounds or 30 percent was returned for reuse and recycling, avoiding disposal in landfills. A new Environmentally Improved Packaging Program was introduced to further reduce landfilled packaging waste from shipments to customers by 25 percent in 1995 and 50 percent in 2000.

Much of what we are accomplishing is possible because our leadership in research and technology provides a solid base for discovering environmental solutions for us and for our customers. For example, a team of DuPont scientists invented a new process for dyeing nylon textiles that reduces dye and chemical requirements by 25 percent, water and steam consumption by 50 percent and dye discharges tenfold. Another team at a plant in Pennsylvania used their technological ingenuity to

▲ *The Environmental Policy Committee of DuPont's Board of Directors (see pg. 19 for the members' names and titles.)*

reduce methylene chloride air emissions by 70 percent and cut hazardous waste generation by 75 percent.

We have also developed a leading-edge environmental planning process to allocate capital and technology resources to those areas that will yield the greatest environmental benefit. DuPont is beginning to share its planning approach with others, and is continuing to advocate greater utilization of risk assessment and cost-benefit analysis in public policy.

In spite of our progress, DuPont remained at the top of the EPA's Toxic Release Inventory (TRI) list. Our TRI ranking results principally from the practice of injecting dilute waste into engineered deepwells permitted by EPA. Because we have put first priority on higher risk emissions, we will remain high on the TRI list longer than we would prefer.

Most of the programs are in place and the technical effort under way to eliminate all hazardous discharges to the ground or verify that they have become nonhazardous by 2000. Our Louisville, Kentucky, plant closed its deepwell in 1992 by creating a market for the waste. This will reduce our TRI numbers by 27 million pounds per year in the future. Other efforts will start to show benefit after 1997.

The total dollar commitment to environmental protection and remediation, including ongoing operating costs, is $1.3 billion per year. Capital expenditures to reduce waste and emissions were $300 million in 1992, and programs to remediate contamination at DuPont plant sites cost $170 million. We expect to incur some remediation costs at most older U.S. sites—typical for chemical and petroleum operations in the U.S.

The company pays $30 million a year in Superfund taxes and is spending $10 million a year on average to clean up sites where it is identified as a potentially responsible party. To expedite cost-effective cleanup, DuPont is supporting comprehensive reform of the Superfund statute.

Environmental fines received by company sites during 1992 totaled $349,000, largely for record-keeping violations. This amount was down significantly from previous years, at a time when EPA's fines against U.S. industry continued to increase.

Leadership and Commitment

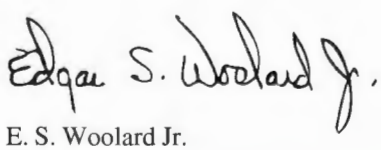
We continue to take steps to advance our leadership and commitment to the environment. Paul V. Tebo was appointed corporate Vice President for Safety, Health and Environment, reporting directly to me. Two new board members were added to the Environmental Policy Committee, which is chaired by Howard W. Johnson, president emeritus and former chairman of the Massachusetts Institute of Technology. They are William K. Reilly, Payne Visiting Professor, Institute of International Studies of Stanford University, and former administrator of the U.S. Environmental Protection Agency; and Charles M. Vest, president of MIT.

DuPont is committed to implementing globally the Chemical Manufacturers Association's "Responsible Care" principles and codes of management practice. The most recent self-evaluations show that we are on track or ahead of schedule in meeting our "Responsible Care" goals, and the company intends to maintain a leadership position as the program is enhanced by CMA.

For the second year, an independent environmental engineering firm evaluated our environmental audit process and conducted oversight audits. The audit report focused particularly on the recommendations of the last review, to ensure that these changes are in place. For the fourth year, we presented corporate Environmental Excellence Awards to employees for outstanding environmental achievements.

It was four years ago that I first called for "corporate environmentalism," which I defined as "an attitude and performance commitment that place corporate environmental stewardship fully in line with public desires and expectations." Some groups continue to direct criticism at our position on TRI and at our past practices. We ask them to focus on what we are doing now and on the direction we have clearly established for the future.

I invite you to read in these pages about the steps we've taken and the journey ahead.



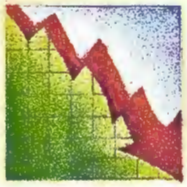
E. S. Woolard Jr.
Chairman

DuPont Environmental Goals

1. *Reduce* **Toxic Air Emissions** *from U.S. sites by 60% from 1987 to 1993, and at other sites by 10% per year from 1990 to 1993.*

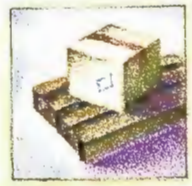
2. *Reduce* **Carcinogenic Air Emissions** *by 90% from 1987 to 2000 at U.S. sites and by 90% from 1990 to 2000 at other sites.*

3. *Reduce emissions of* **33/50 Chemicals**, *17 large-volume toxic chemicals identified by the EPA, by 50% in aggregate from 1988 to 1995.*



4. *Reduce* **Hazardous Waste Generated** *from the manufacture of chemicals worldwide by 35% from 1990 to 2000. Hazardous waste includes waste identified as hazardous by applicable legislation or regulation or by DuPont's toxicity characterization, plus all waste that is disposed of in deepwells.*

5. *Eliminate* **Land Disposal of Hazardous Waste** *by 2000, or verify that they have become nonhazardous.*



6. *Reduce* **Packaging Waste** *by 50% from 1991 to 2000.*

7. *Improve* **Energy Use** *continuously, as measured in BTUs per pound of finished product. This is expected to result in a 15% reduction by the year 2000, relative to 1991.*

8. *Cease production of* **Chlorofluorocarbons (CFCs)** *for sale by the end of 1994 in developed countries.*

9. *Essentially eliminate emissions of* **Nitrous Oxide**, *a greenhouse gas, by the end of 1996.*

10. *Equip the oceangoing oil fleet with 100%* **Double-hulled Tankers** *by 2000.*

11. *Install* **Double-walled Storage Tanks** *at all newly constructed and renovated gasoline outlets owned by Conoco.*

12. *Manage corporate property for* **Wildlife Habitat Enhancement.**

1. Toxic Air Emissions... down 45%

Toxic air emissions in the United States have been reduced by 45% from the base year of 1987. Outside the U.S., emissions have been reduced by 18% from the base year of 1990. The goal outside the U.S. is a 10% reduction per year from 1990 to 1993.

1987	1988	1989	1990	1991	1992	1993 Goal
100%	91%	87%	76%	73%	55%	40%

2. Carcinogenic Air Emissions... down 55%

In the U.S., carcinogenic air emissions are down 55% from the base year of 1987. Outside the U.S., these emissions are down 25% from the base year of 1990. Our goal is the same: a 90% reduction by the year 2000.

1987	1988	1989	1990	1991	1992	2000 Goal
100%	83%	85%	55%	54%	45%	10%

3. 33/50 Chemicals... down 33%

DuPont met the interim goal to reduce releases of 33/50 chemicals by 33% in the U.S. Sites outside the U.S. are not involved in this effort, which is a voluntary initiative of the U.S. Environmental Protection Agency.

1988	1989	1990	1991	1992	1995 Goal
100%	116%	92%	81%	67%	50%

4. Hazardous Waste Generated... down 35% and 6%

Hazardous waste generated was reduced by 35%, indexed to production, at U.S. sites from 1982–90. The new goal is global and not indexed to production. On this basis, hazardous waste generated was reduced by 6% from the base year of 1990.

OLD GOAL				NEW GOAL			
1982	1985	1988	1990	1990	1991	1992	2000 Goal
100%	87%	73%	65%	100%	102%	94%	65%

5. Land Disposal of Hazardous Waste... up 56%

Most programs are in place and the technical effort under way to make significant progress toward this goal after 1997. The goal is based on hazardous waste as defined by the U.S. Resource Conservation and Recovery Act; change is measured on a dry weight basis, though all material is injected with water (up to 98%) into EPA-permitted deepwells.

1987	1988	1989	1990	1991	1992	2000 Goal
100%	104%	114%	99%	148%	156%	0

6. Packaging Waste... a new goal

The Environmentally Improved Packaging Program is a new initiative, and measurable progress is expected to begin in 1993.

1991	1992	1995 Interim Goal	1998 Interim Goal	2000 Goal
100%	100%	75%	65%	50%

7. Energy Use... 38% less per pound of product

Energy use in 1992 was 38% less than the base year of 1973, measured in BTUs per pound of product. In absolute terms, energy use was down by 13% and production up by 40% from 1973–92.

1973	1978	1983	1988	1992
100%	86%	78%	67%	62%

8. Chlorofluorocarbon Production... down 55%

Production of chlorofluorocarbons (CFCs) for sale has been reduced by 55% from the base year of 1986.

1986	1987	1988	1989	1990	1991	1992	1995 Goal*
100%	117%	119%	112%	66%	51%	45%	0

*Based on a request from the U.S. government, DuPont could produce in 1995 as much as 25% of its 1986 CFC production levels in the U.S. DuPont will base production on customer commitments.

9. Nitrous Oxide... down 9%

The technical programs are under way to essentially eliminate emissions of nitrous oxide, a greenhouse gas. Most of the reductions will occur in 1996.

1990	1991	1992	1997 Goal
100%	94%	91%	10%

10. Double-hulled Tankers... 57% of fleet

DuPont's energy subsidiary, Conoco, now has four of seven tankers with double-hull construction as added protection against oil spills.

1991	1992	1993	1995 Interim Goal	2000 Goal
0	29%	57%	71%	100%

11. Double-walled Storage Tanks... at 127 gasoline outlets

Since April 1990, double-walled underground storage tanks have been installed at all newly constructed or renovated Conoco-owned gasoline outlets in the U.S. and Western Europe. In the U.S., this represents more than 25% of all outlets.

1990	1991	1992	1993
39	92	119	127

12. Wildlife Habitat Enhancement... 21 plants certified

DuPont started a wildlife habitat enhancement program at its plants in 1983, and more than 160,000 acres are now under habitat management around the world. The number of plants with programs accredited by the U.S. Wildlife Habitat Enhancement Council has grown to 21.

1990	1991	1992	1993
5	12	17	21

Backup data and additional information on DuPont's environmental progress are provided in the charts and tables beginning on page 12.

Responsible Care

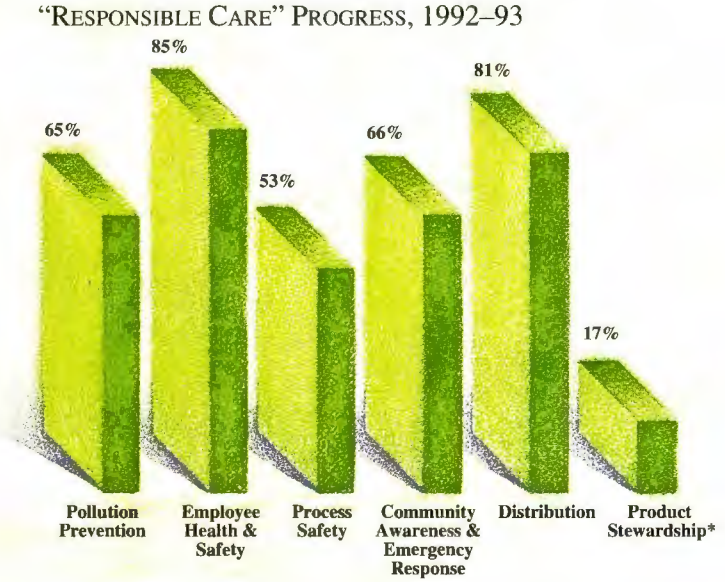
"Responsible Care" is a management process to continuously improve the safety, health and environmental performance of the chemical industry. It is an obligation of membership in the Chemical Manufacturers Association, whose members account for more than 90 percent of the U.S. productive capacity for basic industrial chemicals.

DuPont was one of the architects of "Responsible Care" and in 1989 signed the Guiding Principles and committed to full implementation. In 1992, the company reorganized its environmental management systems and established a Safety, Health and Environment Excellence Center, whose organization parallels the "Responsible Care" codes. Because of the importance of energy efficiency, the Center also includes the Energy Leadership Team. The Center coordinates corporate programs and links the business units, and reports to the Vice President for Safety, Health and Environment.

The principles of "Responsible Care" are carried out through six codes of management practices. These are presented below under the headings of environmental stewardship (Pollution Prevention Code), workplace and process safety (Employee Health & Safety and Process Safety Codes), the community codes (Community Awareness & Emergency Response and Distribution Codes) and product stewardship (Product Stewardship Code).

DuPont's "Responsible Care" goals are global. The company has extended the management practices to all regions of the world or is participating in similar local industry programs. The program of the Canadian Chemical Producers Association was the first in the world; DuPont Canada has all the codes in place and will release emissions data and discuss them with plant communities by the end of 1993. In Europe, South America and the Asia-Pacific region, DuPont is leading "Responsible Care" initiatives. Conoco participates in STEP (Strategies for Today's Environmental Partnership), an initiative for the oil industry sponsored by the American Petroleum Institute.

In the U.S., the company is on track to be implementing all codes by the end of 1994 except Product Stewardship. The Product Stewardship goal is the end of 1997. Going forward, DuPont intends to maintain a leadership position with respect to the "Responsible Care" enhancements projected by CMA.



"Practice in Place" or better, DuPont U.S. plants
**The Product Stewardship Code was introduced by CMA in 1992, and action is being implemented across these management practices.*

DuPont regularly evaluates more than 100 management practices that make up the six codes of "Responsible Care." The rankings are: 1. No action or not applicable. 2. Evaluating. 3. Developing plans. 4. Implementing action. 5. Practice in place. 6. Reassessing implementation. The chart shows the percentage of DuPont practices in the United States for each code that were rated as "in place" or better in the 1992–93 evaluations.

We are also correcting the past. Soil and groundwater contamination at company sites, caused by past practices, is being remediated in cooperation with state and federal agencies. A Corporate Remediation Group was formed in 1991 to better focus technical and regulatory resources on this effort. To date, $465 million has been accrued for the cleanup.

DuPont operates in many countries throughout the world and intends to contribute to environmental advancement wherever it has a presence. New facilities started up in 1992 in Asturias, Spain, in Dunkerque, France, and in Singapore were designed to have minimal environmental impact. The company participates in the process of developing international environmental standards and currently chairs a work group of the International Standards Organization.

Environmental Responsibility

Throughout DuPont, environmental stewardship is the responsibility of every employee. An awards systems is in place to encourage and reward employee performance, culminating in the Corporate Environmental Excellence Awards. The award recipients are chosen by a panel which includes non-DuPont representatives from international conservation and environmental organizations. In 1993, nearly 400 nominees competed, from which 12 recipients were selected. Each recipient designated an environmental organization to receive a grant, for a total of $60,000.

At the senior management level, compensation is determined in part by environmental performance, which is reviewed regularly for each business by the Chairman.

Employees also participate on behalf of the company in a number of external environmental organizations to become aware of issues and best practices and to share our practices with others. The company was a founding member of the Atmospheric Research Council, the Business Council for Sustainable Development and the Global Environmental Management Initiative. DuPont is a member of the Corporate Conservation Council of the National Wildlife Federation and the Buy Recycled Business Alliance. The company remains active in the International Chamber of Commerce and the World Environment Center. Conoco is active in the Marine Spill Response Corporation and the International Petroleum Industry Environmental Conservation Association.

To assure that management systems are in place to meet laws, regulations and corporate policies, DuPont began a formal environmental auditing program in 1985. Sixty audits were conducted in 1992, half at sites outside the U.S. The summary report of the independent auditors is reprinted on pages 20–21.

Environmental Stewardship

Pollution Prevention

Pollution prevention is a priority at DuPont. Our resources are first focused on those emissions and wastes that may pose the greatest potential hazard. This accounts for setting ambitious goals and making significant progress in reducing toxic and carcinogenic air emissions.

For hazardous waste, DuPont achieved a 35 percent reduction, indexed to production, at U.S. sites from 1982 to 1990. Our current goal is to reduce hazardous waste by another 35 percent by the end of the decade, on a global basis and not indexed to production. This will require major process and product re-engineering; progress is being made plant by plant.

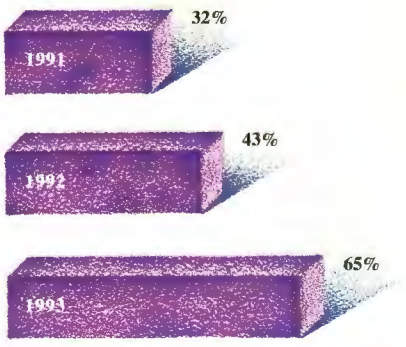
In 1992, the Edge Moor plant received the Delaware Department of Natural Resources and Environmental Control's Award for Excellence in Pollution Prevention. The LaPorte site in Texas was recently selected as a best-in-class facility in a Business Roundtable study. LaPorte reduced hazardous waste by 20 percent since 1990 and air toxics and air carcinogens by 80 percent. At the Tlalnepantla plant in Mexico, paint sludges are now transformed into a primer paint, turning 150 tons of hazardous waste annually into a saleable product. Though there is still a long way to go toward zero waste and emissions, these kinds of reductions are being achieved at sites across the company.

Much of DuPont's hazardous wastes are liquid streams with up to 98 percent water. The company is developing ways to better measure progress in reducing the hazardous constituents of these wastes and is undertaking a water conservation effort.

In 1990, a Corporate Environmental Technology Panel was formed to develop new technologies for pollution prevention and for remediation of soil and groundwater contamination. This effort has yielded process modifications to reduce waste, state-of-the-art treatment facilities and several new breakthroughs in bioremediation. The current focus is on source reduction.

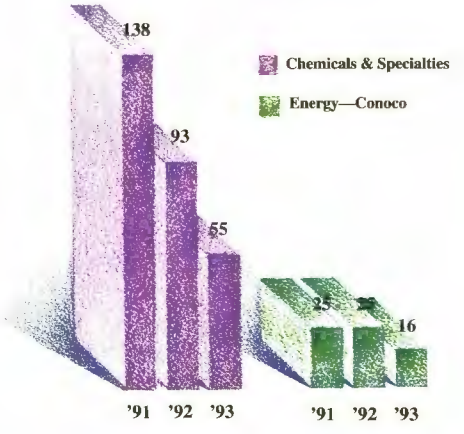
In 1991, the company began formally to measure the number of environmental incidents—inadvertent leaks, spills and releases. Category A incidents* are reported by plant sites worldwide to DuPont's Environmental Leadership Council and to the Chairman. The number of such incidents is decreasing.

POLLUTION PREVENTION CODE PROGRESS



"Practice in Place" or better, DuPont U.S. plants

ENVIRONMENTAL INCIDENTS



*Category A environmental incidents are inadvertent spills, leaks and releases that could have off-site impact, result in disruption to a plant area outside the release zone or exceed a DuPont-set reportable quantity. These incidents are reported to the DuPont Environmental Leadership Council and the Chairman.

The Community Action and Emergency Response Code is designed to keep communities informed and ensure that emergency response mechanisms are in place; the Distribution Code is designed to provide safe transportation.

DuPont historically has been a leader in transportation safety as well as workplace safety. The company did pioneering work in rail and road safety through industry and government task forces and through its internal training program, RHYTHM (Remember How You Treat Hazardous Materials). The year 1992 saw the creation of distribution networks to manage decentralized operations, and the consolidation of outside carriers from 3,000 to fewer than 1,000. The payoff of these efforts is a 23 percent drop in transportation incidents from 1991 to 1992.

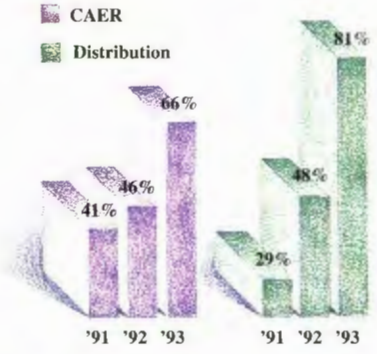
Community Action and Emergency Response

Community outreach has been practiced by many DuPont plants for many years and is now common across the company. When Superfund was reauthorized in 1986, Congress mandated that Local Emergency Planning Councils be established. This dovetailed with an initiative of the Chemical Manufacturers Association, already under way, to step up the dialogue between chemical plants and their communities and to strengthen the communities' abilities to respond to emergencies. CAER—Community Awareness and Emergency Response—became the first code of "Responsible Care." And because CAER and Distribution are older codes, they are among the first that DuPont is able to measure globally.

The CAER code brings DuPont facilities and their local communities together through communications and cooperative emergency planning. Among other things, the code calls for an emergency response plan, developed in cooperation with the community and tested annually.

The code also requires an open dialogue about safety, health and environmental issues. More than 45 DuPont sites have a Community Advisory Panel or equivalent organization to facilitate this information exchange. In addition, DuPont has developed informal working relationships with many U.S. and international environmental organizations to identify emerging issues and solicit comments on aspects of our performance and practices.

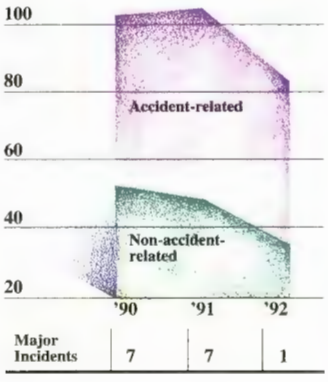
"RESPONSIBLE CARE" PROGRESS



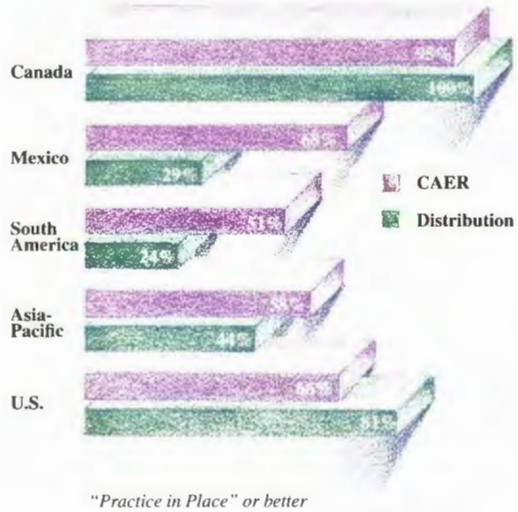
"Practice in Place" or better, DuPont U.S. plants

DUPONT TRANSPORTATION INCIDENTS

U.S. Sites, Chemicals & Specialties



GLOBAL "RESPONSIBLE CARE"



"Practice in Place" or better

The CAER and Distribution Codes have been measured globally by DuPont. The company's objective is to implement "Responsible Care" or parallel programs around the world.

Workplace and Process Safety

A World Leader

DuPont is known for its leadership in safety. Since official statistics began to be compiled by the National Safety Council in 1971, company plants have held the world record most of the time for continuous operations without a lost-time injury. Currently, the record is held by the Kinston, North Carolina, plant, which has gone 66 million exposure hours, or 13 years, without such an injury.

Zero injuries and illnesses remains DuPont's corporate goal, with special emphasis in 1992 on cumulative trauma and other ergonomic-related conditions. The internal audit process has been strengthened for both workplace and process safety. Plant operators, mechanics and technicians are increasingly involved as safety auditors, program developers, expert resources and shift safety leaders.

Process Safety

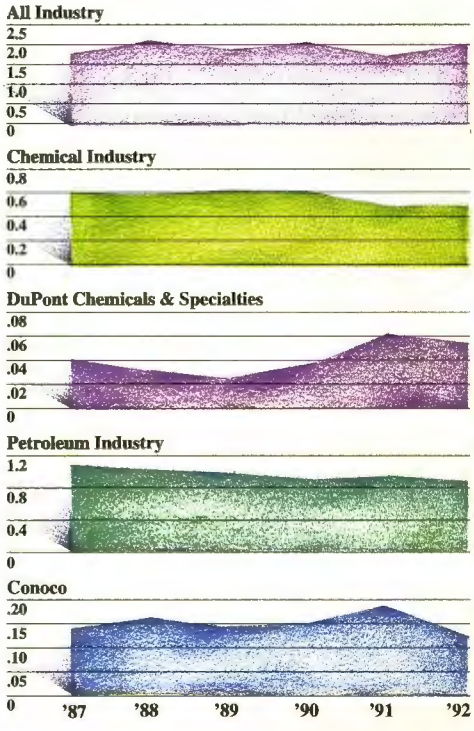
Process safety focuses on the protection of employees, the public and the environment, with the goal of preventing accidental releases of hazardous substances. DuPont's Safety and Occupational Health guideline defines process safety management as applying "systems and controls to chemical and manufacturing processes in a way that hazards are identified, understood and controlled so that process-related injuries and incidents are prevented."

Early in 1993, the company issued a new guideline, entitled "Process Hazards Analysis Involving Off-site Consequences," to help plants prepare off-site consequence and risk information. This will be used to communicate with local emergency planning authorities and the public, as required by the Clean Air Act.

"RESPONSIBLE CARE" PROGRESS

"Practice in Place" or better, DuPont U.S. plants

SAFETY
(Lost workday injuries per 200,000 hours worked)



Product Stewardship

Life Cycle Responsibility

Product stewardship extends responsibility throughout the product life cycle, from initial development to ultimate disposal. It goes beyond the fenceline, upstream and downstream, and involves suppliers, distributors and customers.

The Product Stewardship Code was the most recent to be introduced by the Chemical Manufacturers Association, in 1992. In its initial evaluation, DuPont found 17% of the practices in place and many more being implemented.

Many DuPont businesses have practiced product stewardship for years:

- The company has a First Order Program for highly hazardous materials such as sulfuric acid. New customers are contacted directly to assess their capability to handle the material *before the order is shipped.* DuPont has developed customer training courses and introduced technical innovations such as special tank cars.
- Recycling is practiced by many businesses for products and for wastes. Under the Pollution Prevention Act, the company reported recycling 100 million pounds of waste in 1992 and recovering the energy value of 80 million pounds—about one-fifth of the waste generated and reported as part of the Toxic Release Inventory.
- Two product stewardship innovations in fibers received Environmental Excellence awards. First, the high-temperature dyeing process described in the Chairman's letter was developed by DuPont to reduce the environmental impact of its customers' operations. Second, the company also introduced a carpet reclamation program for its fibers customers, diverting over two million pounds to date of used carpet from landfills.
- Product stewardship guides the company's exploration for new approaches that will help feed the growing world while protecting the environment. DuPont's low use-rate sulfonylurea herbicides prove that agricultural production can be increased, meeting the needs of customers, without compromising natural resources. These herbicides are applied at ounces per acre, rather than pounds, and still control weeds and grasses effectively.
- DuPont has set a goal of having the Product Stewardship Code's practices "in place" by 1997, five years from its adoption by CMA. Several businesses are using the tools of Life Cycle Analysis (LCA) to identify business opportunities and potential vulnerabilities. The company's goal is for all businesses to have improvement programs based on LCA by the year 2000.

CFC Alternatives

No public accounting of product stewardship would be complete without discussing chlorofluorocarbons. DuPont's production of CFCs continued to decline in 1992, to levels less than half of 1986 levels.

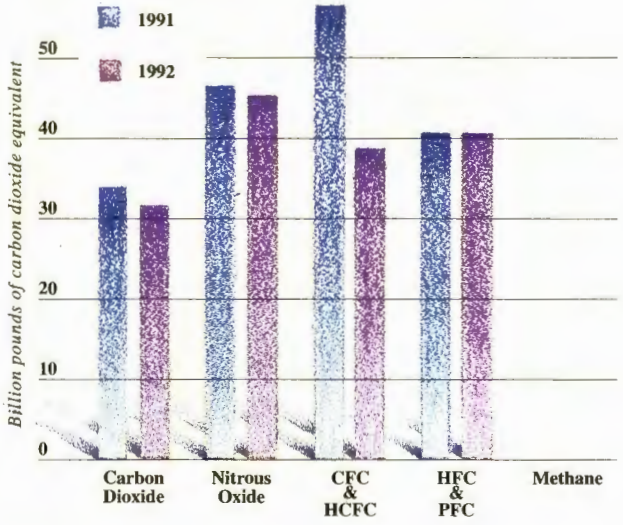
Since 1988, DuPont has been a leader in programs to develop CFC alternatives and accelerate the phaseout of CFCs. The company has invested $500 million to develop and commercialize alternatives, and eight plants are on stream. DuPont products are commercially available today to replace CFCs in most major markets, and the company is assisting customers in the transition process.

Toxic Air Emissions (pounds)

Chemical	1987	1988	1989	1990	1991	1992
Carbonyl Sulfide	17,177,000	15,690,000	14,005,000	14,787,000	13,255,000	8,616,000
Methanol	8,896,388	8,017,584	8,735,700	6,349,955	6,614,261	4,649,281
Dichloromethane	4,714,573	3,532,328	3,837,729	1,827,373	1,827,912	1,431,150
Vinyl Acetate	3,122,438	2,802,193	2,341,933	2,480,621	2,728,056	1,237,206
Ethylene	2,816,845	2,599,889	1,897,885	1,661,135	2,037,715	1,698,629
Acetone	2,726,391	3,007,084	2,997,306	2,771,039	3,971,776	1,383,809
Freon® 113	2,102,332	2,208,925	2,062,782	1,423,788	1,311,906	883,581
Ammonia	1,703,004	1,138,286	1,063,731	1,062,042	900,692	2,022,144
Chloroprene	1,593,015	1,523,245	1,485,024	1,385,965	1,389,000	1,332,085
p-Xylene	1,370,875	1,081,200	964,260	817,116	681,000	336,180
o-Xylene	1,337,403	946,549	916,260	975,420	554,000	588,000
Acetaldehyde	1,299,463	1,464,893	1,506,080	1,250,730	1,252,237	1,235,577
Methyl Methacrylate	1,113,681	1,024,369	1,053,887	636,476	867,528	654,405
Propylene	1,038,411	1,510,335	1,817,345	1,874,632	1,254,669	1,644,917
Toluene	1,001,352	805,590	680,500	615,029	700,775	732,145
Bromomethane	869,600	698,822	1,072,700	891,880	878,000	882,310
Hydrochloric Acid	785,260	660,245	586,642	482,259	261,127	256,049
Benzene	638,030	502,374	455,414	333,089	221,982	201,443
Xylene (Mixed Isomers)	630,220	857,802	290,959	312,160	425,021	510,763

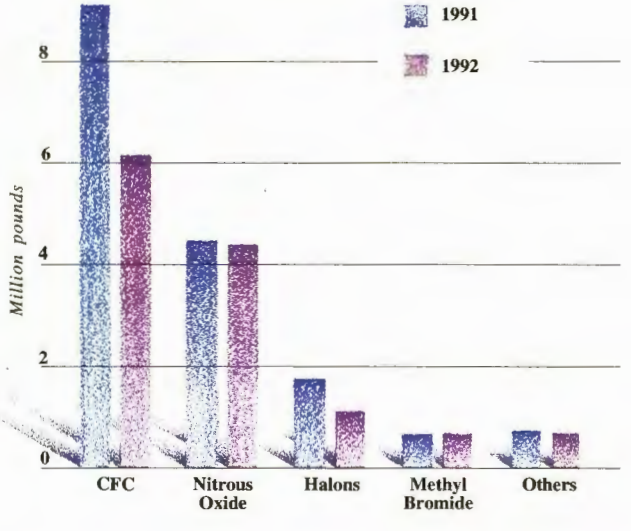
This table represents U.S. air emissions of the largest volume chemicals on DuPont's Toxic Release Inventory in 1987. They account for more than 90 percent of the company's TRI air emissions. Hydrochloric acid (HCl) from fuel combustion is not included in the table, as it was not part of the TRI numbers when DuPont set its goal to reduce toxic air emissions by 60 percent.

GREENHOUSE GASES FROM DUPONT FACILITIES



Relative effects of greenhouse gas emissions—carbon dioxide, nitrous oxide, chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs), perfluorinated compounds (PFCs) and methane—from DuPont Chemicals & Specialties plants and Petroleum refining facilities. These effects are weighted according to their global warming potentials (GWP-100) and expressed as carbon dioxide equivalents. The comparisons do not consider the indirect effects of CFCs, methane or other greenhouse gases. Indirect effects might reduce or eliminate the direct contribution of CFCs.

OZONE-DEPLETING CHEMICALS



These emissions are weighted according to their ozone depletion potential (ODP) and expressed as CFC equivalents.

Airborne Carcinogens (U.S. in pounds)

	1987	1988	1989	1990	1991	1992
1,2-Dibromoethane	6,460	8,600	24,272	20,313	17,544	14,205
1,3-Butadiene	279,636	177,223	180,764	153,349	129,184	122,125
1,4-Dioxane	43,268	44,337	65,202	94,221	104,625	112,239
4,4-Methylenedianiline	107	761	112	0	0	0
4-Aminobiphenyl	10	10	1	0	0	0
Acetaldehyde	1,299,463	1,464,893	1,506,080	1,250,730	1,252,237	1,235,577
Acrylonitrile	492,898	413,407	410,398	343,034	332,996	40,349
Aniline	18,971	22,364	19,422	20,204	27,271	33,109
Arsenic	5	6	6	8	18	14
Benzene	638,030	502,374	455,414	333,089	221,982	201,443
Carbon Tetrachloride	121,926	132,514	161,714	181,208	172,020	201,699
Chloroform	377,250	257,126	223,997	164,115	180,389	191,944
Chromium Compounds	7,603	7,429	5,215	2,823	4,715	2,027
Dichloromethane	4,714,573	3,532,328	3,837,729	1,827,373	1,827,912	1,431,250
Dimethyl Sulfate	4,009	0	2,220	1,286	1,481	269
Epichlorohydrin	530	780	872	0	0	0
Ethylene Oxide	12,718	6,212	5,615	5,996	9,666	6,105
Formaldehyde	303,244	316,876	109,027	152,998	157,802	136,345
Lead	500	865	0	0	0	0
Nickel	74	74	74	74	17	0
Nickel Compounds	202	4	2	32	15,231	2,523
Tetrachloroethylene	66,963	76,709	52,836	47,134	38,418	43,941
Totals	8,388,440	6,964,892	7,060,972	4,597,987	4,493,508	3,775,064

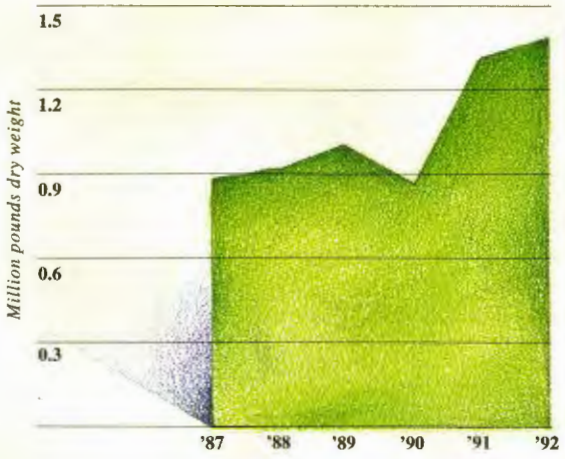
Source: Toxic Release Inventory.

33/50 Chemicals (U.S. in pounds of air, water, land discharges and off-site transfers)

	1988	1989	1990	1991	1992
1,1,1-Trichloroethane	543,042	347,491	334,352	200,318	164,964
Benzene	827,772	777,194	672,820	899,973	442,685
Carbon Tetrachloride	322,425	444,329	430,910	480,399	439,701
Chloroform	441,076	288,845	215,345	215,852	230,237
Chromium Compounds	140,654	131,820	144,040	118,920	42,138
Cyanide Compounds	2,311,724	2,833,650	2,113,804	1,541,168	1,334,740
Dichloromethane	5,002,303	4,655,097	2,444,949	2,025,346	1,612,686
Hydrogen Cyanide	663,460	862,356	764,593	676,539	758,413
Lead	27,910	17,200	1,185	46	
Lead Compounds	323,936	257,957	983,314	278,271	288,084
Methyl Ethyl Ketone	361,681	319,972	242,657	411,078	379,695
Methyl Isobutyl Ketone	46,982	23,177	97,230	29,346	52,971
Nickel	355	281	437	17	2,398
Nickel Compounds	1,267,431	1,496,514	1,110,673	1,002,335	932,441
o-Xylene	963,549	916,260	975,449	554,000	588,000
p-Xylene	1,110,100	969,260	822,630	681,600	336,521
Tetrachloroethylene	79,817	54,474	74,428	43,040	58,523
Toluene	2,872,373	4,915,268	3,457,450	2,299,598	4,103,941
Tricholorethylene	1,430	13,126	12,508	13,080	21,709
Xylene (Mixed Isomers)	1,646,813	2,182,809	2,154,945	3,508,794	637,004
Totals	18,646,813	21,507,780	17,053,719	14,979,720	12,426,851

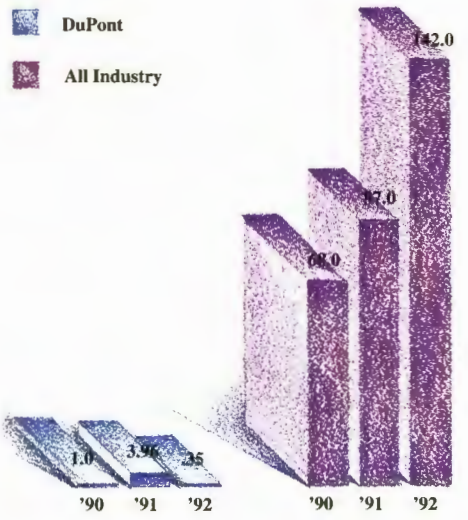
Source: Toxic Release Inventory. Includes air, water, land discharges and off-site transfers. Not including transfers for recycle and reuse first reported in 1991.

Land Disposal of Hazardous Waste



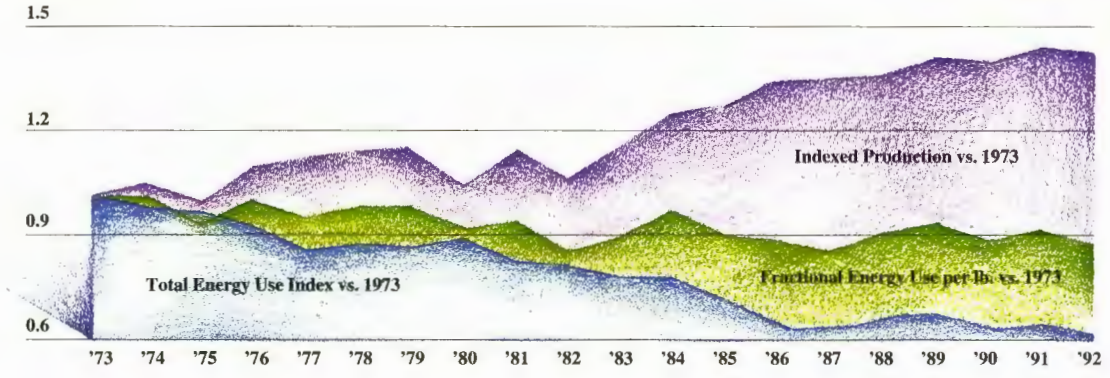
The technical effort is under way and programs are in place to eliminate all hazardous discharges to the ground or verify that they have become nonhazardous by the year 2000. Progress towards the goal is expected to be rapid, beginning in 1997. The goal is based on hazardous waste as defined by applicable legislation or regulation or by DuPont's toxicity characterization.

Environmental Fines and Penalties
($ millions)



The number of fines and penalties received by the company were 36 in 1990, 65 in 1991 and 24 in 1992. DuPont's fines in 1991 included a total of $3 million levied against the Chambers Works in Deepwater, New Jersey, for record-keeping violations.

Energy Use



1973 = 100%
The energy index includes all purchased fuels, electricity and steam. Feedstock uses are excluded. The production index excludes small-volume products that are not conveniently measured by weight.

TOXIC RELEASE INVENTORY

DuPont U.S. Chemicals & Specialties (C & S) (millions of pounds)

	1987	1988	1989	1990	1991	1992
Releases[1]						
Air[2]	60.9	55.6	52.7	46.4	44.7	33.7
Water	1.7	1.5	1.9	1.4	1.4	0.7
Land	1.4	4.4	0.6	0.7	0.3	0.2
Releases to Environment	64.0	61.5	55.2	48.5	46.4	34.6
Injection Wells[3]	175.0	181.5	196.5	166.5	186.9	196.3
Total Releases	239.0	243.0	251.7	215.0	233.3	230.9
Transfers[4]						
Off Site	22.9	25.6	25.2	22.1	19.0	19.8
POTW[5]	5.5	2.6	2.1	2.4	1.8	1.6
Total Transfers	28.4	28.2	27.3	24.5	20.8	21.4
Total C & S	267.4	271.2	279.0	239.5	254.1	252.3

[1]Data has been adjusted by removing deletions and newly listed chemicals, to enable year-to-year comparisons.

[2]Excluding HCl from fuel combustion and chlorofluorocarbons.

[3]Including only the ammonia portion of ammonium sulfate.

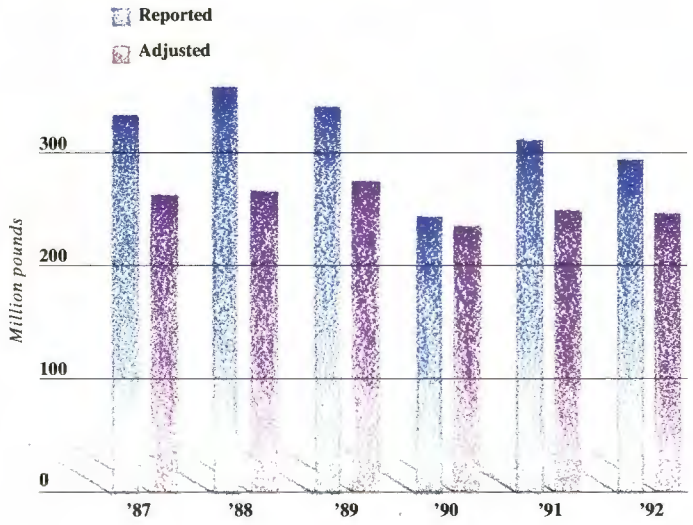
[4]Not including transfers for recycle and reuse, first reported in 1991.

[5]Publicly Owned Treatment Works.

Conoco North American Refining (millions of pounds)

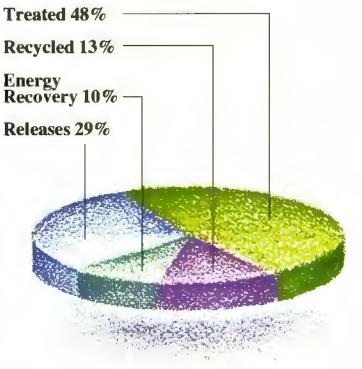
	1987	1988	1989	1990	1991	1992
Releases						
Air	1.9	1.7	1.3	0.9	1.1	1.2
Water	0.01	0.03	0.03	0.02	0.17	0.21
Land	0.15	0.07	0.04	0.03	0.05	0.04
Total Refining	2.1	1.8	1.4	1.0	1.3	1.5

TOXIC RELEASE INVENTORY
CHEMICALS & SPECIALTIES



The Toxic Release Inventory as reported to the Environmental Protection Agency includes new listings and deletions that make comparisons difficult. DuPont also presents its inventory as adjusted, for consistent, year-to-year comparisons that better reflect real progress.

WASTE AS GENERATED—1992
(% of Total)



Source: Toxic Release Inventory. DuPont reported to the EPA that U.S. sites generated 800 million pounds of waste in 1992.

Releases and Transfers by Major U.S. Plant Site (million lbs.)

DeLisle, Mississippi	56.0
New Johnsonville, Tennessee	52.0
Beaumont, Texas	41.1
Louisville, Kentucky	32.8
Victoria, Texas	23.2
LaPorte, Texas	10.0
Manati, Puerto Rico	8.0
Towanda, Pennsylvania	6.3
Mobile, Alabama	6.3
Sabine, Texas	6.0
Mt. Clemens, Michigan	5.8
Deepwater, New Jersey	5.7
Cape Fear, North Carolina	4.7
Flint, Michigan	4.6
Belle, West Virginia	4.2
Memphis, Tennessee	3.7
Ft. Royal, Virginia	3.6
Pontchartrain, Louisiana	2.0
Parkersburg, West Virginia	2.0
Toledo, Ohio	1.9
Richmond, Virginia	1.8
Ft. Madison, Iowa	1.6
Nashville, Tennessee	1.6
Repauno, New Jersey	1.5
Antioch, California	1.4
Kinston, North Carolina	1.3

Source: Toxic Release Inventory

DuPont's operations and environmental stewardship are global. The following charts show air emissions, air carcinogens and hazardous waste for regions other than the U.S. The figures below are in millions of pounds; hazardous waste is reported on a wet weight basis, which includes a large percentage of water. The source of the data is DuPont's Corporate Environmental Plan Database.

Europe

	1990	1992
Air Toxics	14	12
Air Carcinogens	< 1	< 1
Hazardous Wastes	2,462	2,057

DuPont Europe has published an Environmental Progress Report on its operations, reporting emissions and wastes by European definitions and in metric tons.

Canada

	1990	1992
Air Toxics	8	7
Air Carcinogens	~ 0	~ 0
Hazardous Wastes	4	2

Mexico

	1990	1992
Air Toxics	6	4
Air Carcinogens	~ 0	~ 0
Hazardous Waste	197	201

South America

	1990	1992
Air Toxics	< 1	~ 0
Air Carcinogens	~ 0	~ 0
Hazardous Waste	8	7

Asia-Pacific

	1990	1992
Air Toxics	~ 0	~ 0
Air Carcinogens	~ 0	~ 0
Hazardous Waste	9	9

DuPont is 117,000 people committed to global business excellence, of which environmental leadership is a key element. The company's first resolution on environmental protection dates from 1938, and in 1971 DuPont formally pledged to sell only products that would be made, used, distributed and disposed of safely and in an environmentally sound way. In 1989, the concept of "corporate environmentalism" was introduced.

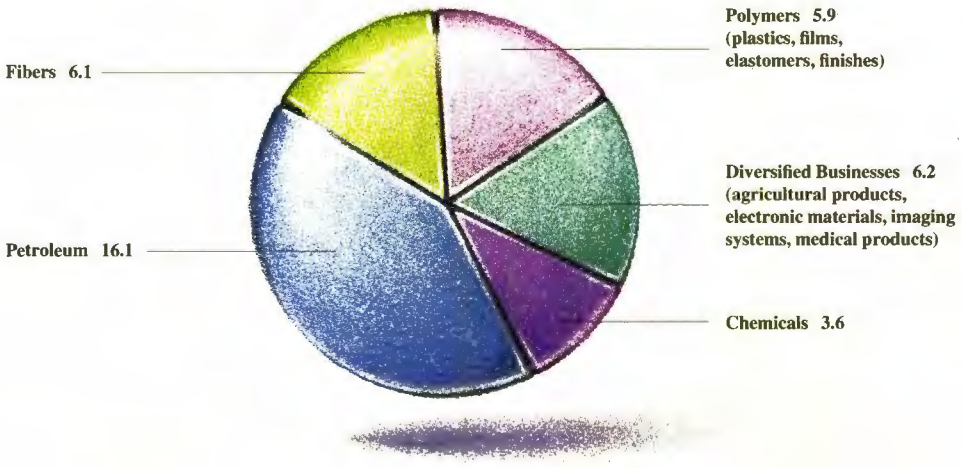
With nearly $38 billion in sales, DuPont is the eighth largest industrial corporation in the U.S. and the 22nd largest in the world, according to *Fortune* magazine. The company is research- and technology-based and global in scope. Its principal businesses are based on chemicals and petroleum.

Familiar DuPont products and trademarks include basic and specialty chemicals, white pigment, synthetic fibers—nylon, "Dacron" polyester, "Lycra" spandex, "Kevlar" aramid fiber, "Tyvek" spunbonded olefin—engineering plastics, "Mylar" polyester film, neoprene synthetic rubber, automobile finishes, "Teflon" and "Silverstone" nonstick coatings, "Corian" building materials... and petroleum products marketed by Conoco, DuPont's energy subsidiary. Major worldwide markets include aerospace, apparel, automotive, chemicals, construction, electronics, food, healthcare, printing, paper, refining and transportation.

About half of the company's sales are in the United States, and half in other countries. DuPont has operations in 35 countries on six continents. Worldwide, the company operates 133 chemicals and specialties manufacturing plants, five petroleum refineries and 19 natural gas processing plants.

DUPONT BUSINESSES

1992 Sales ($ billion)



SAFETY, HEALTH & ENVIRONMENTAL POLICY

WHEREAS safety, health and environmental quality have long been of primary importance to DuPont.

RESOLVED that this Company as a matter of policy:

1. will comply with all applicable laws and regulations related to safety, health and environmental quality in its manufacturing, product development, marketing and distribution activities;
2. will routinely review its operations for the purpose of making safety, health and environmental quality improvements beyond those legally required where such improvements provide significant benefits at reasonable cost;
3. will determine that each product can be made, used, handled and disposed of safely and consistent with appropriate safety, health and environmental quality criteria; and
4. will inform employees and the public about the safety and health effects of its products and workplace chemicals; and will provide leadership in establishing programs to respond to emergencies involving hazardous materials in communities where the Company has a significant presence.

RESOLVED FURTHER that this policy shall apply to domestic and foreign consolidated subsidiaries and to affiliates for which this Company or a consolidated subsidiary has operating responsibility. This policy will be administered through line management of such subsidiaries or affiliates;

RESOLVED FURTHER that this Company will endeavor to have domestic and foreign affiliates where it does not have operating responsibility adopt comparable safety, health and environmental quality policies;

RESOLVED FURTHER that each department is responsible for the development and implementation of plans and programs to ensure that its operations comply with the safety, health and environmental quality policy and to assist in promotion of public acceptance of corporate efforts to protect the safety and health of employees, customers and the public and to protect the environment.

RESOLVED FURTHER that all previous statements relating to the foregoing hereby are rescinded.

Adopted November 24, 1971
Revised August 9, 1985

Environmental Leadership

The Environmental Policy Committee of the Board of Directors monitors performance and policy, looking to long-term sustainability. The Environmental Leadership Council, composed of senior officers of the company, approves policies and oversees performance monthly. The Safety, Health and Environment Excellence Center, led by Vice President Paul Tebo, assists the operating units to assure progress toward the corporate safety, health and environmental goals.

Chief Environmental Officer

Edgar S. Woolard, Jr.
Chairman of the Board and Chief Executive Officer

Environmental Policy Committee

Howard W. Johnson, Chairman
President Emeritus and Former Chairman
Corporation of the Massachusetts Institute of Technology

Elwood P. Blanchard, Jr.
Former Vice Chairman, DuPont

Charles R. Bronfman, O.C.
Co-Chairman of the Board
The Seagram Company Ltd.

Edgar Bronfman, Jr.
President and Chief Operating Officer
The Seagram Company Ltd.

Louisa C. Duemling

John A. Krol
Vice Chairman, DuPont

William K. Reilly
Payne Visiting Professor
Institute of International Studies, Stanford University
Former Administrator
U.S. Environmental Protection Agency

Charles M. Vest
President
Massachusetts Institute of Technology

Environmental Leadership Council

Archie W. Dunham
Chairman
Executive Vice President
Exploration Production, Conoco
Senior Vice President, DuPont

Paul V. Tebo
Vice Chairman
Vice President, DuPont Safety, Health & Environment

Jerald A. Blumberg
Senior Vice President, DuPont

Michael B. Emery
Senior Vice President, DuPont

William F. Kirk
Vice President and General Manager
DuPont Agricultural Products

Paul Z. Larson
Vice President, DuPont Specialty Chemicals

Robert v.d. Luft
Senior Vice President, DuPont
President, DuPont Europe

Stacey J. Mobley
Senior Vice President, DuPont

John F. Schmutz
Senior Vice President, DuPont

Darwin G. Wika
Secretary, ex officio

ENVIRONMENTAL AUDIT

(Following is a precis of the environmental audit evaluation.)

McLaren Hart sm

ENVIRONMENTAL ENGINEERING CORPORATION

E. I. DU PONT DE NEMOURS AND COMPANY
Evaluation of the Corporate Environmental Audit Program
Evaluation Report October 11, 1993

1.0 INTRODUCTION

DuPont instituted a corporate Environmental Audit Program in 1985. As part of DuPont's quality assurance efforts, the Company commissioned a third-party, independent evaluation of the Program in 1991. The evaluation consisted of a review of records, including program documentation and audit reports; interviews with senior corporate managers, the Corporate environmental staff and numerous auditors; and observation of five audits. McLaren/Hart conducted the evaluation during the latter half of 1991 and issued a final report on March 16, 1992. The Executive Summary of the Evaluation Report was included in *Corporate Environmentalism—A 1992 Progress Report*, published by DuPont in early 1993.

In 1993, DuPont contracted with McLaren/Hart to conduct a follow-up evaluation of the Program. The objectives of this second evaluation were to assess whether, in the past two years, DuPont has responded appropriately to:

- The findings and recommendations of the first report;
- Any internal organizational and structural changes taking place over the two-year period that might impact the effectiveness of the Program; and
- Generally recognized and applicable improvements in the practice of environmental auditing.

2.0 PROGRAM OVERVIEW

"The objectives of [DuPont's] environmental audits are:

- To assess global compliance with corporate environmental policy and applicable environmental laws and regulations;
- To provide assurance that management systems are in place for continuing compliance; and
- To verify and document that appropriate action is being taken in order to safeguard our environment."[1]

DuPont's objective is to conduct environmental audits of all major facilities operating in the U.S. and overseas. The Program is relatively mature in the U.S., Canada and Europe but is evolving in the rest of the world. Audits generally involve a team leader and 1–8 auditors. The audits take from 2–5 days depending upon team size and the complexity of the facility. A fairly standard approach is used in preparing for, conducting and reporting the results of the audits.

DuPont reviews its facilities based on a risk-driven schedule, as stated in the Program Guidelines. Facilities are ranked and placed into one of four categories. Certain large, especially complex facilities may be defined as Category I, which requires annual audits of certain site areas or specific environmental media. Category II facilities are to be reviewed every two years; Category III, once every three years; and Category IV, once every four years.

3.0 EXECUTIVE SUMMARY

Overall, the DuPont Environmental Audit Program is an excellent one. Its structure, content and procedures continue to meet or exceed those of Programs generally found in comparable *Fortune 200* Companies. In the past two years, since the initial third-party evaluation, substantial progress has been made in improving the Program.

Of particular note are the following:

- The policy for report and facility action plan schedules has been shortened considerably from 90 days to 45 days.
- The Corporate oversight function has been clearly defined in the Program's Guidance Manual. There is a much more systematic and thorough oversight of the Audit Programs, including monitoring of facility action plan status for individual audits.
- All Corporate audit protocols have been updated and improved in the past year.
- Audit reports are much improved and include a two-way classification of findings, which better defines the findings by type and provides priorities for developing corrective actions.
- All audited sites are now encouraged to complete site evaluations of the audit team's performance. An Audit Appraisal Questionnaire has been prepared by Corporate to assist in this process.

Notwithstanding these and other structural and procedural improvements in the Corporate Program, the execution of the Audit Programs has been somewhat adversely affected by the ongoing restructuring within DuPont. The recent decentralization of the Company into 19 Strategic Business Units (SBUs) has resulted in the creation of 16 separate business-level audit programs. Several of these programs have lost momentum during the organizational transition and

[1]DuPont U.S. Environmental Audit Guidelines Manual, Chapter 3, Organization and Staffing, p. 1, June 28, 1993.

are not consistently meeting all Corporate Audit Program Guidelines. The restructuring has also resulted in the loss of some experienced auditors. Audit Program Managers are aware of these challenges and it is likely that in the next six to twelve months they will be addressed.

4.0 RESULTS OF THE EVALUATION

The principal focus of the evaluation was to determine the progress DuPont has made with respect to the 1991 findings. Therefore, this section is organized consistent with the listing of high- and medium-priority development needs presented in the Executive Summary of the 1991 report. Exhibit 1 provides a summary of the progress made for each of the development needs. In all cases, at least some progress has been made in rectifying the deficiencies.

4.1 THE AUDIT PROGRAM

The Program has experienced some major improvements in policies and procedures, specifically with respect to the development of better tools and tracking systems. Most notably the Corporate Guidance Manual and Audit Protocols have been upgraded and updated in 1993. The July 1993 upgrade of Program Manual is a significant improvement, specifically the guidance provided on: community participation, report writing, findings classification, the audit appraisal questionnaire, and how to handle repeat findings. However, not all of the improvements required or recommended in the Manual have been implemented fully among the SBUs.

EXHIBIT 1
Summary of Progress Against 1991 Evaluation

Finding	No Progress	Some Progress	Major Improvement	Fully Corrected
The Program...				
A1. Uneven follow-up for corrective actions among Businesses		✔		
A2. Limited Corporate oversight of corrective action status at Business level			✔	
B1. Too relaxed a policy for completion of reports & corrective action plans (90 days)				✔
B2. Inconsistency in meeting the report & corrective action plan schedules			✔	
C. Lack of true independence where Business SHEA staff audit sites where they have provided technical assistance		✔		
D. Lack of an independent review of state regulations prior to the audits			✔	
E. Outdated audit protocols				✔
F. No formal Audit Program Plans developed by the Businesses			✔	
G. No clearly articulated objectives for the Corporate oversight function				✔
H. Lack of consistency in providing legal review of audit reports			✔	
I. Audit team evaluaitons conducted only in one Business				✔
The Audits...				
A. Uncertainty among auditors over whether audits are compliance assessments or management systems reviews		✔		
B. Rambling, unstructured closing conferences			✔	
C. Varying, rambling report styles			✔	
D. Field verification techniques not always used appropriately		✔		
E. Ancillary activities (e.g., maintenance, warehouses, tollers, contractors) not always audited with same rigor as line operations		✔		
F. Multiple tenant site audits do not always get the full cooperation of all tenants		✔		
G. Sites conducting self-audits only sporadically		✔		

DuPont Environmental Progress Report
1007 Market Street
Nemours Building—Room 9519
Wilmington, DE 19801-9989

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DUPONT

State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27604
Division of Solid Waste Management
James B. Hunt, Jr., Governor
Telephone 919-733-2178
Jonathan B. Howes, Secretary

June 18, 1993

Mr. M. W. Humphrey
Site Environmental Manager
E. I. duPont de Nemours & Co.
Post Office Box 2042
Wilmington, North Carolina 28402

Reference: E. I. duPont de Nemours & Co.
Cape Fear Plant
NCD 047 369 046

Dear Mr. Humphrey:

The changes in Section C, "Waste Characteristics" have been processed as a Class 1 permit modification.

Within ninety (90) calendar days of this submission, the permittee must notify all persons on the attached facility mailing list with the exception of the United States Environmental Protection Agency and the State who have been notified.

Any comments should be directed to Helen Cotton at (919) 733-2178.

Sincerely,

Daniel L. Bius/for
William F. Hamner, Ph.D., Head
Permitting Branch
Hazardous Waste Section

WFH/HLC/mb/65.93

Enclosure

cc: Richard R. Campbell, US EPA, Region IV
Daniel L. Bius
Flint Worrell
Helen L. Cotton

P.O. Box 27687, Raleigh, North Carolina 27611-7687 Telephone 919-733-4984 Fax # 919-733-0513

E. I. DUPONT DE NEMOURS & COMPANY
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Mr. John Harvey
Brunswick County Manager
Government Center
Box 249
Bolivia, North Carolina 28422

HCL/mb/66.93

Date: June, 1993
Revision No. 2
Du pont, Cape Fear Plant

I. Listed

Waste No.(s)	Waste Name**	Hazard(s)	EPA Code(s)	Basis for Designation
3	Methanol	Toxic	F002	Listed Toxic
		Ignitable	D001	Flash Point < 140°F
			D019	Carbon Tetrachloride
			D022	Chloroform
			D039	Tetrachloroethylene
15	Fibers Chem Lab	Toxic	F002	Listed Toxic
			D019	Carbon Tetrachloride
			D022	Chloroform
			D039	Tetrachloroethylene
			D040	Trichloroethylene
18	Paint Thinning Liquid	Toxic	F003	Listed Toxic
		Toxic	F005	Listed Toxic
		Ignitable	D001	Flash Point < 140°F
		EP Toxic	D005	Barium
			D006	Cadmium
			D007	Chromium
			D008	Lead
			D009	Mercury
			D035	Methyl Ethyl Ketone
27H	Lube Oil & Hydraulic Fluid	Toxic	F001	Listed Toxic
54	FREON* 11	Toxic	F001	Listed Toxic
			D040	Trichloroethylene
57	Lube Oil & Hydraulic Fluid	Toxic	F001	Listed Toxic

* DuPont Registered Trademark

** Name used for internal identification purposes only; all drums have weatherproof labels and are identified in accordance with RCRA and DOT requirements - see sample label at end of this Section.

(1)

EXHIBIT C-I

LABEL INDEX

CAPE FEAR PLANT HAZARDOUS AND NON-HAZARDOUS WASTES

WASTE NO	WASTE NAME & SYNONYM	SAMPLE SHIPPING LABEL	DRUM SHIPPING LABEL
1 DELETED	1,1,1-TRICHLOROETHANE/ FUEL OIL #6 (PDSERVICE	1,1,1-TRICHLOROETHANE MIXTURE ORM-A UN 2831	HAZARDOUS WASTE LIQUID, N.O.S. (CONTAINS 1,1,1-TRICHLOROETHANE/FUEL OIL #6 (F001,D001)
2 DELETED	(PD SERVICE) 1,1,1-TRICHLOROETHANE (PD MAINT.)	1,1,1-TRICHLOROETHANE ORMA-A UN 2831	ORM-E NA 9189 (F001) WASTE 1,1,1-TRICHLOROETHANE ORM-A UN 2831 (F001)
3	METHANOL (PD CHEM LAB)	FLAMMABLE LIQUID, N.O.S. (CONTAINS METHANOL, DICHLOROMETHANE, ACETYLENE TETRABROMIDE	WASTE FLAMMABLE LIQUID, N.O.S. (CONTAINS METHANOL, DICHLOROMETHANE, ACETYLENE TETRABROMIDE, BUTYL ACETATE) UN 1993 (F002, D001, D019, D022, D039)
4	DELETED		
5	ACETIC ACID & XYLENE (PD CHEM LAB)	FLAMMABLE LIQUID, N.O.S. (CONTAINS XYLENE,METHANOL,ACETIC ACID,COBALT MANGANESE CATYLYST SOLUTION) UN 1993	WASTE FLAMMABLE LIQUID, N.O.S. (CONTAINS XYLENE,METHANOL,ACETIC ACID,COBALT MANGANESE CATALYST SOLUTION) UN 1993 (D001,D002)
6	AGITENE (PD MAINT. AND FIBERS)	AGITENE (PETROLEUM NAPTHA) NON-REGULATED BY DOT & EPA IN AMOUNTS LESS THAN 110 GALLONS.	WASTE SOLVENT, N.O.S. FLAMMABLE LIQUID (CONTAINS AGITENE, PETROLEUM NAPTHA NA 1993 (D001)
7 DELETED	FUEL OIL #6/ ESTERIFIER SLUDGE (PD DMT #2) COMBINED WITH 11 & 13	FUEL OIL #6 / ESTERIFIER SLUDGE NON-REGULATED BY DOT & EPA	FUEL OIL #6 / ESTERIFIER SLUDGE NON-REGULATED BY DOT & EPA
8	TEREPHTHALIC ACID (TPA) (PD DMT #1 & #2)	TEREPHTHALIC ACID NON-REGULATED BY DOT & EPA	TEREPTHALIC ACID NON-REGULATED BY DOT & EPA
9	MPT SIDE CUT (PD DMT #2	MPT SIDE CUT NON-REGULATED BY DOT & EPA	MPT SIDE CUT NON-REGULATED BY DOT & EPA
10	BOILER ASH DOW HEATER ASH (PD SERVICES)	BOILER ASH NON-REGULATED BY DOT & EPA	BOILER ASH NON-REGULATED BY DOT & EPA
11	ESTERIFIER SLUDGE (PD DMT #1 & #2	ESTERIFIER SLUDGE NON-REGULATED BY DOT & EPA	ESTERIFIER SLUDGE NON REGULATED BY DOT & EPA
12	PRECIPITATOR ASH (PD TPA)	PRECIPITATOR ASH NON-REGULATED BY DOT & EPA	HAZARDOUS WASTE SOLID, N.O.S. PRECIPITATOR ASH ORME-E NA 9189 (D007)
13	NO. 6 FUEL OIL (ALL POWER AREAS)	FUEL OIL NO. 6 NON-REGULATED BY DOT & EPA < 110 GALLONS NA 1993	FUEL OIL NO. 6 COMBUSTIBLE LIQUID NA 1993
14 DELETED	LUBRICATING OIL (PD AND FIBERS MAINT.) COMBINED WITH #28	OIL,N.O.S. NON-REGULATED BY DOT & EPA < 110 GALLONS NA 1270	OIL, N.O.S. COMBUSTIBLE LIQUID NA 1270
15	FIBERS CHEM LAB	TETRACHLOROETHYLENE MIXTURE ORM-A, UN 1897 (CONTAINS TRI-CHLOROETHYLENE, DICHLOROMETHANE, TETRACHLORIDE & CHLOROFORM	HAZARDOUS WASTE LIQUID, N.O.S. ORM-E NA 9189 (CONTAINS TRICHLOROETHYLENE,TETRACHLOROETHY-LENE,DICHLOROMETHANE,CARBON TETRACHLORIDE CHLOROFORM) (F002, D019, D022, D039, D040)

LABEL INDEX

CAPE FEAR PLANT HAZARDOUS AND NON-HAZARDOUS WASTES

WASTE NO	WASTE NAME & SYNONYM	SAMPLE SHIPPING LABEL	DRUM SHIPPING LABEL
16 DELETED	CSD-43 (FIBERS MAINT.) REPLACED WITH #6 (AGITENE)	WASTE COMBUSTIBLE LIQUID, N.O.S. UN 1993 (CONTAINS TETRACHLORO-ETHYLENE LUBRICATING OILS & DICHLOROMETHANE	WASTE COMBUSTIBLE LIQUID, N.O.S. NA 1993 (CONTAINS TETRACHLOROETHYLENE,LUBRICATING OILS & DICHLOROMETHANE) (F001,D001)
17 DELETED	FREON 113 (FIBERS MAINT.) COMBINED WITH #27	LUBRICATING OILS NON-REGULATED BY DOT & EPA	HAZARDOUS WASTE LIQUID, N.O.S., ORM-E, NA 9189 (CONTAINS TRICHLOROTRI-FLUOROETHANE & LUBRICATING OILS) (F001)
18	PAINT THINNING LIQUID (CONSTRUCTION	FLAMMABLE LIQUID, N.O.S.,UN 1993 CONTAINS COMPOUND PAINT THINNING LIQUID)	WASTE FLAMMABLE LIQUID, N.O.S., UN 1993 (CONTAINS COMPOUND PAINT THINNING LIQUID (F003 & F005, D001, 5, 6, 7, 8, 9, 35)
19	FIBERS CHEM LAB	FLAMMABLE LIQUID, N.O.S.,UN 1993 (CONTAINS ACETONE, METHANOL & TITANIUM DIOXIDE)	WASTE FLAMMABLE LIQUID, N.O.S., UN 1993 (CONTAINS ACETONE, METHANOL & TITANIUM DIOXIDE) (D001)
20	CP BOILOUT WASTE (FIBERS CP)	CP BOILOUT WASTE NON-REGULATED BY DOT & EPA	(CONTAINS SODIUM HYDROXIDE, SODIUM ACETATE
21	METHANOL (FIBERS CP)	METHYL ALCOHOL FLAMMABLE LIQUID UN 1230	WASTE METHYL ALCOHOL FLAMMABLE LIQUID UN 1230 (D001)
22	TIO2 FIBERS SOL. PREP. & CHEM LAB	TITANIUM DIOXIDE & ETHYLENE GLYCOL SLURRY NON-REGULATED BY DOT & EPA	TITANIUM DIOXIDE & ETHYLENE GLYCOL SLURRY
23	HOTWELL WASTE (FIBERS CP)	HOTWELL WASTE - GLYCOL & DEGRADED POLYMER NON-REGULATED BY DOT & EPA	HOTWELL WASTE - GLYCOL & DEGRADED POLYMER
24	WASTE GLYCOL (FIBERS SOL. PREP & CP)	GLYCOL WASTE (CONTAINS VIRGIN CAUSTICIZED,CATALYZED AND RECOVERED GLYCOL) NON-REGULATED BY DOT & EPA	WASTE GLYCOL (CONTAINS VIRGIN CAUSTICIZED, CATALYZED AND RECOVERED GLYCOL) (D004)
25 DELETED	POT FILTER WASTE (FIBERS CP) COMBINED WITH #20	POT FILTER WASTE GLYCOL AND DEGRADED POLYMER NON-REGULATED BY DOT & EPA	POT FILTER WASTE - GLYCOL AND DEGRADED POLYMER
26 DELETED	POWER WASTE COMBINED WITH #13 & #27	FUEL OIL MIXTURE - COMBUSTIBLE LIQUID NON-REGULATED BY DOT & EPA	WASTE FUEL OIL MIXTURE - COMBUSTIBLE LIQUID NA 1993
27N	LUBE OIL AND HYDRAULIC FLUID (PD & FIBERS MAINT.)	LUBE OIL AND HYDRAULIC FLUID NON-REGULATED BY DOT & EPA	LUBE OIL AND HYDRAULIC FLUID NON-REGULATED BY DOT & EPA
27H	LUBE OIL AND HYDRAULIC (PD & FIBERS MAINT.)	LUBE OIL AND HYDRAULIC FLUID (MIXED WITH A VARIETY OF HALO-GENATED SOLVENTS) NON-REGULATED BY DOT & EPA	LUBE OIL AND HYDRAULIC FLUID (MIXED WITH A VARIETY OF HALOGENATED SOLVENTS) (F001)
28	LUBE OIL (PD & TF MAINT & PD LAB)	LUBRICATING OIL NON-REGULATED BY DOT & EPA	LUBRICATING OIL
29	DELETE		
30	CONSTRUCTION GARAGE WASTE	GASOLINE MIXTURE - FLAMMABLE NA 1203	WASTE GASOLINE MIXTUE FLAMMABLE LIQUID NA 1257 (D001)

(4)

EXHIBIT C-I

LABEL INDEX

CAPE FEAR PLANT HAZARDOUS AND NON-HAZARDOUS WASTES

WASTE NO	WASTE NAME & SYNONYM	SAMPLE SHIPPING LABEL	DRUM SHIPPING LABEL
52	DMT & TPA - DITCH WASTE	DMT & TPA - DITCH WASTE NON-REGULATED BY DOT & EPA	DMT & TPA - DITCH WASTE NON-REGULATED BY DOT & EPA
53 DELETED	MANGANESE SALTS COMBINED WITH #20	MANGANESE SALTS NON-REGULATED BY DOT & EPA	MANGANESE SALTS NON-REGULATED BY DOT & EPA
54	"FREON"* 11 (FIBERS POWER)	TRICHLOROFLUOROMETHANE AND OIL MIXTURE NON-REGULATED BY DOT & EPA	HAZARDOUS WASTE LIQUID, N.O.S. ORM-E, NA 9189 (CONTAINS TRICHLOROFLUOROMETHANE & LUBRICATING OIL & WATER) (F001, D040)
55 DELETED	MINERAL SPIRITS SUN SPIRITS REPLACED WITH #6 (AGITENE)	WASTE SOLVENT N.O.S. COMBUSTIBLE LIQUID NA 1993 (CONTAINS MINERAL SPIRITS	WASTE SOLVENT, N.O.S. COMBUSTIBLE LIQUID NA 1993 (CONTAINS MINERAL SPIRITS (D001)
56	WASTE GLYCOL & PHOSPHORIC ACID (FIBERS CP & SOL. PREP.)	PHOSPHORIC ACID MIXTURE CORROSIVE MATERIAL, UN 1805 (CONTAINS 10-20% PHOSPHORIC ACID IN ETHYLENE GLYCOL)	WASTE PHOSPHORIC ACID MIXTURE CORROSIVE MATERIAL, UN 1805 (CONTAINS 10-20% PHOSPHORIC ACID IN ETHYLENE GLYCOL) (D002)
57	LUBE OIL AND HYDRAULIC FLUID (H & V SHOP)	LUBE OIL AND HYDRAULIC FLUID (MAY CONTAIN "FREON" 12 &/OR 22 NON-REGULATED BY DOT & EPA	LUBE OIL AND HYDRAULIC FLUID (MAY CONTAIN "FREON" 12 &/OR 22 (F001)
58	POLYETHYLENE GLYCOL (KP-10) (SOL. PREP.)	POLYETHYLENE GLYCOL NON-REGULATED BY DOT & EPA	POLYETHYLENE GLYCOL NON-REGULATED BY DOT & EPA
59	WAYNESBORO FINISH OIL (WAYNESBORO PLANT)	WAYNESBORO FINISH OIL NON-REGULATED BY DOT & EPA	WAYNESBORO FINISH OIL NON-REGULATED BY DOT & EPA

* Du Pont Registered Trademark

10/13/88 SM

EXHIBIT C-III-1

CAPE FEAR "LISTED" HAZARDOUS WASTE

WASTE #
(3)

WASTE SOURCE AND/OR I.D. METHANOL (P D CHEM LAB) D001, F002

SAMPLED	WEIGHT %	VOLUME %	SPECIFIC GRAVITY	FLASH POINT DEG. F	pH	TOTAL HALOGEN CONTENT %	MOISTURE %	TRICHLORO-ETHYLENE %	TETRACHLORO-ETHYLENE %	DICHLOROMETHANE %	CARBON TETRACHLORIDE %	CHLOROFORM %	METHYL CHLOROFORM %	OIL %	CHROMIUM VI RCRA LIMIT 5 PPM PPM	FIXED SOLIDS %	TSS PPM	ACETYLENE TETRABROMIDE %
11/19/80 |T|	18	29	0.986	>230	2.7													
TO |B|	82	71	1.296				0.214			~94		0.001	0.001					0.001
12/23/80 |C|																5.81	28	
12/23/80 TO 3/1/81			1.264	>230	5.0	82	1.76			98		<0.1						
3/1/81 |T|																		
TO |B|							0.149		24.0	62.59	2.45	0.05						<0.05
4/21/81 |C|			1.369	>230	4.5													
4/22/81 |T|																		
TO |B|							0.149			90-91	0.18	<0.005	0.161	2.58				<0.005
6/12/81 |C|			1.269	70	6.8	83												
6/13/81 |T|		55	0.995			0.098	48.91			<1.0	<1.0	<1.0	<1.0					
TO |B|		45	1.265			62.6	2.34			75.0	<1.0	<1.0	<1.0					<0.1
9/10/81 |C|				105	5.5									13.27				
9/11/81 TO 1/15/82			1.254	>230	4.0	37.6	0.98			45.0	<0.1	<0.1	<0.1	6.12				14.7
1/16/82 TO 6/15/82			1.216	>230	4.9	48.5	0.04		<2.0	60.0	<0.01	<0.01	<1.0					<2.0
6/16/82 TO 6/24/83			1.177	NONE	3.4	59.9	2.70		<2.0	71.8	<0.01	<0.01	<1.0					<2.0
6/25/83 TO 6/29/84			1.154	NONE	4.1	63.3	23.8		3.9	70.15	<0.01	<0.01	1.80					<2.0
6/29/84 TO 6/22/85			1.205	NONE	3.5	9.0	9.85		3.64	4.93	0.78	<0.01	<0.01					1.14
6/22/85 TO 6/24/86			1.223	NONE	3.3	38.31	29.59		3.10	21.84	1.07	1.13	1.32					15.56

\|T\| = TOP \|B\| = BOTTOM \|C\| = COMPOSITE

EXHIBIT C-III-1

CAPE FEAR "LISTED" HAZARDOUS WASTE

WASTE #
(3)

WASTE SOURCE AND/OR I.D. METHANOL (P D CHEM LAB) D001, F002

SAMPLED	WEIGHT %	VOLUME %	SPECIFIC GRAVITY	FLASH POINT PMT DEG. F	pH	TOTAL HALOGEN CONTENT %	MOISTURE %	TRICHLORO-ETHYLENE %	TETRACHLORO-ETHYLENE %	DICHLOROMETHANE %	CARBON TETRACHLORIDE %	CHLOROFORM %	METHYL CHLOROFORM %	OIL %	CHROMIUM VI RCRA LIMIT 5 PPM PPM	FIXED SOLIDS %	TSS PPM	ACETYLENE TETRABROMIDE %
6/25/86 TO 6/27/87			1.192	>230	3.3	36.45	24.36		2.58	23.43	1.51	0.96	0.58					12.95
6/27/87 TO /28/88			1.157	>230	3.8	22.01	22.64		0.51	26.36	0.24	<0.01	0.03					0.12
6/28/88 TO 6/28/89			1.190	>230	3.9	43.18	11.15		18.07	14.53	16.72	0.21	<0.01					<0.01
6/28/89 TO 7/9/90			1.254	>230	3.6	44.30	5.95		18.3	18.5	14.9	<0.01	<0.01					<0.01
7/9/90 TO 6/24/91			1.195	>230	3.7	53.10	7.05		14.40	36.30	3.02	1.85	0.26					5.95
6/24/91 TO 6/24/92			1.115	>230	3.7	53.85	14.28		22.64	16.80	20.40	1.85	<0.01					<0.01

EXHIBIT C-III-2

CAPE FEAR "LISTED" HAZARDOUS WASTE

WASTE #
(15)

WASTE SOURCE AND/OR I.D. TETRACHLORDETHYLENE MIXTURE (FIBERS CHEM LAB) F002

SAMPLE DATE	SPECIFIC GRAVITY	FLASH POINT	PH	HOT ACID NOT GENT	MOISTURE CONTENT	TRICHLOROETHYLENE	TETRACHLOROETHYLENE	DICHLOROETHYLENE	CHLOROFORM	CARBON TETRACHLORIDE	CLARITY	TURBIDITY	TOTAL ORGANIC CARBON	TOTAL SUSPENDED SOLIDS	TOTAL DISSOLVED SOLIDS
		DEG. F		%	%	%	%	%	%	%	%	%	PPM	%	%	%	PPM
11/19/80 TO 12/23/80	1.613	>230	6.5		<.001	<0.001	99+	<0.001	0.44	0.03		0.014				0.028	1.0
12/23/80 TO 3/1/81	1.605	>230	4.5	85.0	0.026	<0.01	97.0	1.16	1.27	0.59							
3/1/81 TO 4/21/81	1.608	>230	4.5		0.01	<0.01	88.5	2.2	2.81	2.01	<0.01						
4/22/81 TO 6/12/81	1.678	>230	5.5	85.0	1.002	<0.001	98.0	<0.001	1.37	<0.003	0.03						
6/13/81 TO 9/10/81	1.599	>230	6.8	84.7	<0.01	0.01	99+	0.01	<0.01	<0.01							
9/11/81 TO 1/15/82	1.620	>230	6.5	71.3	0.01	<0.1	83.0	1.5	0.14	0.10	0.28						
1/16/82 TO 6/15/82	1.591	>230	6.3	71.4	<0.01	<0.01	84.0	<0.01	<1.0	<0.01							
6/16/82 TO 6/24/83	1.588	NONE	9.2	79.2	0.35	<0.01	92.6	<0.01	<0.01	<0.01	<1.0						
6/25/83 TO 6/29/84	1.595	NONE	4.9	86.1	0.14	<0.01	84.6	<0.01	14.95	<0.01							
6/29/84 TO 6/22/85	1.635	NONE	1.2	66.30	0.86	<0.01	42.40	<0.01	31.75	0.88							
6/22/85 TO 6/24/86	1.593	NONE	2.0	87.59	0.09	<0.01	70.18	0.48	28.07	1.08							

EXHIBIT C- III-2

CAPE FEAR "LISTED" HAZARDOUS WASTE

WASTE #15
(15)

WASTE SOURCE AND/OR I.D. TETRACHLOROETHYLENE MIXTURE (FIBERS CHEM LAB) F002

SAMPLED	SPECIFIC GRAVITY	FLASH PNT	pH	HOT ALKALINE TENACITY	MOISTURE	TRICHLOROETHYLENE	TETRACHLOROETHYLENE	DICHLOROETHYLENE	TRICHLOROETHANE	CHLOROFORM	METHYLENE CHLORIDE	CLARITY	TURBIDITY	FIBER LENGTH	FIBER DIAMETER	TSS
		DEG. F		%	%	%	%	%	%	%	%	PPM	%	%	%	PPM
6/25/86 TO 6/27/87	1.594	>230	2.9	87.62	0.19	<0.01	56.93	0.78	39.64	1.95						
6/27/87 TO 6/28/88	1.475	>230	3.4	55.95	37.90	<0.01	28.77	<0.01	34.62	<0.01						
6/28/88 TO 6/28/89	1.505	>230	3.5	55.54	0.36	<0.01	43.94	<0.01	19.48	<0.01						
6/28/89 TO 7/9/90	1.605	>230	3.2	52.36	0.85	<0.01	<0.01	44.3	16.4	<0.01						
7/9/90 TO 6/24/91	1.580	>230	3.4	82.30	0.08	<0.01	56.85	0.40	35.20	2.08						
6/24/91 TO 6/24/92	1.620	>230	4.1	78.82	0.79	<0.01	68.40	<0.01	23.55	<0.01						

CAPE FEAR "LISTED" HAZARDOUS WASTES

WASTE #
(18)

WASTE SOURCE AND/OR I.D. PAINT THINNING LIQUID (CONSTRUCTION) F003, F005, D001, 5, 6, 7, 8 & 9

SAMPLED	SPECIFIC GRAVITY	FLASH PNT	pH	BTU/LB	TOTAL CHLORIDE	MOISTURE	ASTM	TOTAL SULFIDE	REACTIVE CYANIDE	REACTIVE SULFIDE	TOTAL CHLORIDE	REACTIVE CYANIDE	TOTAL SULFIDE	TOTAL CHLORIDE	REACTIVE CYANIDE	TOTAL SULFIDE	NO. OF LAYERS	ARANT
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
12/23/80 TO 3/1/81	0.778	80	5.5	12482	370	<.001		* 0.8		< 0.8	<0.04	< 0.002	0.8			
3/1/81 TO 4/21/81		90	6.1	17290				* 45		< 0.8	0.12	< 0.005	< 0.10			
4/22/81 TO 6/12/81		80	4.6	8266				* 0.40		< 0.8	0.73	< 0.005	1.5			
6/13/81 TO 9/10/81		110	5.8	16443				* 2.3		< 0.8	0.92	0.009	15.8			
9/11/81 TO 1/15/82		96	6.8	14950				* 0.5		< 0.8	0.6	< 0.001	7.5			
1/16/82 TO 6/15/82	0.916	104	6.5	15385				* 0.5		1.76	0.24	< 0.002	110			
6/16/82 TO 6/24/83	0.883	102	6.5	18592		0.67		* <0.1		< 0.8	<0.04	< 0.002	< 0.1			
6/25/83 TO 6/29/84	0.778	110	3.9	19237				* <0.1		< 0.8	<0.04	< 0.002	< 0.2			
6/29/84 TO 6/22/85	0.793	108	2.7	15530				<1.0		< 2.0	<0.1	< 0.1	< 1.0			
6/22/85 TO 6/24/86	0.795	94	4.0	16250				<1.0		< 2.0	<0.1	< 0.1	< 1.0			
6/25/86 TO 6/27/87	0.803	94	3.5	17545				<1.0		< 2.0	<0.1	< 0.05	< 1.0			

* AS CHROMIUM

CAPE FEAR "LISTED" HAZARDOUS WASTES

WASTE #
(18)

WASTE SOURCE AND/OR I.D. PAINT THINNING LIQUID (CONSTRUCTION) F003, F005, D001, 5, 6, 7, 8 & 9

SPAMPLED	SPECIFICITY	FLASH PNT	pH	BTU/LB	TOTAL HALOGENS	MOISTURE	REACTIVE SULFIDE	REACTIVE CHLORIDE	REACTIVE SULFIDE	REACTIVE CYANIDE	BARIUM	REACTIVE CYANIDE	REACTIVE AMENABLE	NORMAL
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
6/27/87 TO 6/28/88	0.800	108	4.2	18031				<1.0		< 1.0	<1.0	< 0.05	<1.0	
8/28/88 TO 8/28/89	0.808	100	4.1	17870				<1.0		<1.0	<1.0	<0.5	<1.0	
8/28/89 TO 7/9/90	0.798	98	3.7	17860				<1.0		<2.0	<0.1	<0.05	<1.0	
7/9/90 TO 6/24/91	0.813	104	4.6	10280				<1.0		<1.0	<1.0	<0.05	<1.0	
6/24/91 TO 6/24/92	0.810	104	4.5	18260		<0.02		<1.0		<1.0	<1.0	<0.05	<1.0	

June, 1993
Revision No. 2

EXHIBIT C-III-4

CAPE FEAR "LISTED" HAZARDOUS WASTE

WASTE #
(27H)

WASTE SOURCE AND/OR I.D. LUBE OIL & HYDRAULIC FLUID &/OR FREON 113 (PD & FIBERS MAINTENANCE) F001

SAMPLE DATE	SPECIFIC GRAVITY	FLASH PNT DEG. F	pH	TOTAL HALOGEN PPM	MOISTURE %	TRIETHYL CHLORIDE %	TRIETHYL CHLORIDE %	DICHLOROETHANE %	CLARIFIED OIL %	CHLOROFORM %	CHLOROFORM %	PCB PPM	TRICHLOROFLUOROETHANE %	TOTAL SOLIDS %	BTU/LB
6/25/86 TO 6/27/87	0.905	>230		15090	0.01								1.73	98.26	18590
6/27/87 TO 6/28/88	0.918	>230		< 25	19.43								<0.01	80.60	15360
6/28/88 TO 6/28/89	0.969	>230		12400	30.52									69.24	12600
6/28/89 TO 7/9/90	0.870	>230		0.049%	14.55									84.93	15160
7/9/90 TO 6/24/91	0.982	>230		0.013%	35.95									63.72	15068

June, 1993
Revision No. 1

EXHIBIT C-III-5

CAPE FEAR "LISTED" HAZARDOUS WASTE

WASTE #
(54)

WASTE SOURCE AND/OR I.D. FREON 11 - TRICHLOROFLUOROMETHANE & OIL MIXTURE (FIBERS POWER) F001

SAMPLED	SPECIFIC GRAVITY	FLASH POINT	PH	TOTAL HALOGENS	TOTAL CHLORINE	TRICHLOROETHYLENE	TETRACHLOROETHYLENE	DICHLOROMETHANE	TRICHLOROETHANE	CHLOROFORM	CARBON TETRACHLORIDE	TRICHLOROFLUOROMETHANE	TRICHLOROBENZENE	TOTAL PCB	TOTAL FLUORINE
		DEG. F		%	%	%	%	%	%	%	%	%	ppm	%	%
6/25/83 TO 6/29/84	1.029	>230	6.6	33.03	0.09	31.28						60.41			8.11
6/29/84 TO 6/22/85	0.980	>230	6.8	3.61	0.09							94.90			4.67
6/22/85 TO 6/24/86	1.105	>230	3.8	22.26	75.50	<0.01						0.114			24.39
6/25/86 TO 6/27/87	0.897	>230	6.3	<25PPM	0.04	<0.01						99.93			<0.01
6/27/87 TO 6/28/88	0.902	>230	6.5	<25PPM	0.42	<0.01						99.10			<0.01
6/28/88 TO 6/28/89	0.886	>230	6.6	1.49	0.03	<0.01						99.80			1.63
6/28/89 TO 7/9/90	0.878	>230	6.5	0.093	0.05	<0.01						99.79			0.12
7/9/90 TO 6/24/91	0.889	>230	6.3	0.810	0.02	<0.01						99.13			0.85
6/24/91 TO 6/24/92	0.932	>230	5.4	0.860	<0.01	<0.01						98.86		17820	0.94

June, 1993
Revision No. 2

EXHIBIT C-III-6

CAPE FEAR "LISTED" HAZARDOUS WASTE

WASTE #
(57)

WASTE SOURCE AND/OR I.D. LUBE OIL & HYDRAULIC FLUID (H & V SHOP) F001

SAMPLED	SPECIFICITY	FLASH PNT	pH	TOTAL ARSENIC	TOTAL BENZENE	TOTAL CHROMIUM	TOTAL DICHLOROETHENE	TOTAL TETRACHLOROETHENE	TOTAL TRICHLOROETHENE	TOTAL 1,1,1-TRICHLOROETHANE	TOTAL 1,1,2-TRICHLOROETHANE	TOTAL XYLENES	TOTAL ORGANIC HALOGENS	TOTAL PCB	RCRA 113 TOTAL METALS	RCRA 12 DIFFERENTIAL METALS	RCRA 22 DIFFERENTIAL METALS	BTU/LB
		DEG. F		PPM	%	%	%	%	%	%	%	%	%	PPM	%	%	%	
6/22/85 TO 6/24/86	0.889	>230		5600	0.005								99.38					17690
6/25/86 TO 6/27/87	0.884	>230		< 25	0.01								99.96		<0.01	<0.01	<0.01	17830
6/27/87 TO 6/28/88	0.913	>230		< 25									62.58		<0.01	<0.01	<0.01	12120
6/28/88 TO 6/28/89	0.880	>230		1.65	<0.01								99.86		<0.01	<0.01	1.87	17910
6/28/89 TO 7/9/90	0.875	>230		0.155%	0.02								99.84		0.17	<0.01	<0.01	17790
7/9/90 TO 6/24/91	0.942	>230		0.028%	6.38								93.40		<0.01	<0.01	<0.01	17398
6/24/91 TO 6/24/92	0.932	>230	5.4	0.56%	<0.01								99.13		<0.01	<0.01	0.66	18260

June, 1993
Revision No. 1

EXHIBIT C-IV-1

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(5)

WASTE SOURCE AND/OR I.D. ACETIC ACID & XYLENE (P D CHEM LAB) D001, D002

SAMPLED	SPECIFIC GRAVITY	FLASH POINT	pH	BTU/LB	TOTAL CHLORIDE	MOISTURE	REACTIVE SULFIDE	CLIMRP	REACTIVE SULFIDE	REACTIVE CYANIDE	BROMOCRESOL GREEN	REACTIVE CYANIDE	REACTIVE SULFIDE	NORMAL PARAFFIN
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
12/23/80 TO 3/1/81	1.083	75	1.2	9283	270	0.112								
3/1/81 TO 4/21/81	1.070	75	<1.0	4664	2012	27.46							56.3	
4/22/81 TO 6/12/81	1.099	70	4.0	108	388	61.29							0.7	
6/13/81 TO 9/10/81	1.064	115	2.5	4996	3200	39.61							136.0	
9/11/81 TO 1/15/82	1.077	102	<1.0	4590	4290	29.02							125.0	
1/16/82 TO 6/15/82	1.046	106	<1.0	3860	388	32.68							0.41	
6/16/82 TO 6/24/83	1.050	110	1.3	6189	252	13.43							0.11	
6/25/83 TO 6/29/84	1.071	112	3.0	5249	492	24.28							1.65	
6/29/84 TO 6/22/85	1.128	104	2.4	3640	318	35.89							2.68	
6/22/85 TO 6/24/86	1.190	98	1.4	4323	2.15%	29.59							0.042	
6/25/86 TO 6/27/87	1.114	84	2.1	4610	5820	35.68							0.095	

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(5)

WASTE SOURCE AND/OR I.D. ACETIC ACID & XYLENE (P D CHEM LAB) D001, D002

SAMPLED	SPECIFICITY	FLASH POINT	pH	BTU/LB	TOTAL HALOGENS	MOISTURE	REACTIVE SULFIDE	CHLORIDE	REACTIVE SULFIDE	REACTIVE CYANIDE	BALANCE	CATION	REACTIVE AMMONIA	REACTIVE NITRATE	SPECIFIC GRAVITY	ANIMAL TISSUE
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
6/27/87 TO 6/28/88	1.120	90	3.0	4260	7310	38.61									0.06	
6/28/88 TO 6/28/89	1.109	92	3.2	4040	9060	39.70										
7/9/90 TO 6/24/91	1.090	98	4.1	5823	1520	22.40										
6/24/91 TO 6/24/92	0.810	104	4.5	18260		0.02		<1.0		<1.0		<1.0	<0.05	<1.0	<1.0	<0.01

EXHIBIT C-IV-2

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(6)

WASTE SOURCE AND/OR I.D. AGITENE (TF & PD MAINTENANCE) D001

SAMPLED	SPECIFIC GRAVITY	FLASH POINT PMT (DEG. F)	pH	BTU/LB	TOTAL HALOGEN CONTENT (PPM)	MOISTURE (%)	RCRA LIMIT ARSENIC 5 PPM (PPM)	RCRA LIMIT CHROMIUM 5 PPM (PPM)	RCRA LIMIT SELENIUM 5 PPM (PPM)	RCRA BARIUM 100 PPM (PPM)	RCRA LIMIT CADMIUM 1 PPM (PPM)	RCRA MERCURY 0.2 PPM (PPM)	RCRA LIMIT LEAD 5 PPM (PPM)	OIL (%)	NO RCRA ANTIMONY LIMIT (PPM)	SULFUR (%)
4/22/81 TO 6/12/81	0.796	70	6.0	16550	783	THESE DATA ARE WHEN WE WERE USING MINERAL SPIRITS AS A DEGREASING SOLVENT. EFFECTIVE 6/16/82 AND FOR ALL SUBSEQUENT DATES, WE SUBSTITUTED AGITENE FOR MINERAL SPIRITS.								96.5		
1/16/82 TO 6/15/82	0.790	120	6.8	4657	185	DATA GENERATED WHILE TESTING AGITENE TO REPLACE MINERAL SPIRITS								25.98		0.31
6/16/82 TO 6/24/83	0.840	126	3.9	20052	218									22.65		
6/25/83 TO 6/29/84	0.855	122	5.2	18831	176									26.29		
6/29/84 TO 6/22/85	0.835	118	4.6	4823	296									45.01		
6/22/85 TO 6/24/86	0.865	130	6.5	15855	<25									98.53		
6/25/86 TO 6/27/87	0.827	126	5.6	18020	<25									96.56		
6/27/87 TO 6/28/88	0.838	144	5.2	18960	84									98.22		
6/28/88 TO 6/28/89	0.832	148	6.0	19510	<50									98.79		
6/28/89 TO 7/9/90	0.825	128	5.8	18070	<50									24.7		
7/9/90 TO 6/24/91	0.837	154	6.3	19590	<50									99.1		

EXHIBIT C-IV-2

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(6)

WASTE SOURCE AND/OR I.D. AGITENE (TF & PD MAINTENANCE) D001

SAMPLE ID	SPECIFIC GRAVITY	FLASH POINT	pH	BTU/LB	TOTAL CHLORIDE	MOISTURE	REACTIVE SULFIDE	REACTIVE CHLORIDE	REACTIVE ALUMINUM	SILICON	BARIUM	CADMIUM	CHROMIUM	LEAD	MERCURY	NICKEL	SILVER
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	
6/24/91 TO 6/24/93	1.015	98	5.7	19590	<50	0.10									93.42		

EXHIBIT C-IV-3

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(12)

WASTE SOURCE AND/OR I.D. PRECIPITATOR ASH (PD TPA) NON-REGULATED - D007

SPAMPLED	SPECIFIC GRAVITY	FLASH POINT	pH	BTU/LB	TOTAL CHLORIDES	MOISTURE	TOTAL RECOVERABLE CHROMIUM	TOTAL CHROMIUM	HEXAVALENT CHROMIUM	BARIUM	CADMIUM	MERCURY	LEAD	NICKEL	ARSENIC	COBALT
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM
6/16/82 TO 6/24/83																5.6
6/25/83 TO 6/29/84																0.5
6/29/84 TO 6/22/85								2.0								0.3
6/22/85 TO 6/24/86						8.41		18.4								<0.1
6/25/86 TO 6/27/87						6.35		1.35								<0.1
6/27/87 TO 6/28/88						10.42		<0.25								<0.05
6/28/88 TO 6/28/89						4.15		<2.0								13.4
6/28/89 TO 7/9/90						2.10		<2.0								22.0
7/9/90 TO 6/24/91						2.06		<2.0								286
6/24/91 TO 6/24/92	1.90					0.32		<2.0								0.12

* AS CHROMIUM

EXHIBIT C-IV-4

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(19)

WASTE SOURCE AND/OR I.D. ACETONE, METHANOL & TIO2 (FIBERS CHEM LAB) D001

SAMPLED	SPECIFIC GRAVITY	FLASH POINT	PNMT	pH	BTU/LB	TOTAL CHLORINE	MOISTURE	ATR 5	CHROMIUM PPM	SELENIUM PPM	BARIUM PPM	CADMIUM PPM	MERCURY PPM	LEAD PPM	GALLIUM %	ANTIMONY PPM	TIN %
		DEG. F				PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	%
6/13/81 TO 9/10/81	1.375	>230	5.5	5647	9760	6.44		* <0.10	<0.04	< 0.8	<0.04	<0.005	<0.10	64.5			27.9
9/11/81 TO 1/15/82	1.334	>230	6.0	6175	6350	4.47		* <0.10	0.038	< 0.8	< 0.04	<0.001	<0.10	68.4			21.01
6/29/84 TO 6/22/85	1.092	138	5.9	6892	460	8.06		<2.0						91.23			0.62
6/27/87 TO 6/28/88	1.126	>230	4.4	10090	57600	1.86		<1.0									

* AS CHROMIUM

EXHIBIT C-IV-5

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(21)

WASTE SOURCE AND/OR I.D. METHANOL (FIBERS CP) D001

SAMPLE PERIOD	SPECIFIC GRAVITY	FLASH POINT DEG. F	pH	BTU/LB	TOTAL HALOGEN CONTENT PPM	MOISTURE %	ARSENIC RCRA LIMIT 5 PPM PPM	CHROMIUM RCRA LIMIT 5 PPM PPM	SELENIUM RCRA LIMIT 5 PPM PPM	BARIUM RCRA LIMIT 100 PPM PPM	CADMIUM RCRA LIMIT 1 PPM PPM	MERCURY RCRA LIMIT 0.2 PPM PPM	LEAD RCRA LIMIT 5 PPM PPM	OIL %	ANTIMONY NO RCRA LIMIT PPM
12/23/80 TO 3/1/81	0.971	110	4.5	3482	680	49.62									
4/22/81 TO 6/12/81	0.863	90	6.5	1825		12.2									
6/13/81 TO 9/10/81	0.969	55	6.5	7871	235	9.4									
9/11/81 TO 1/15/82	0.910	62	7.2	8490	110	39.5									
1/16/82 TO 6/15/82	0.931	72	7.5	6824	180	32.6									
6/16/82 TO 6/24/83	0.964	70	6.8	7409	84	13.49									
6/25/83 TO 6/29/84	0.926	68	5.3	7186	39	35.10									
6/29/84 TO 6/22/85	1.018	66	5.8	8753	84	6.76								0.33	
6/22/85 TO 6/24/86	1.044	86	5.3	5435	<25	4.12								0.018	
6/25/86 TO 6/27/87	1.006	80	4.8	6823	<25	15.28								0.024	

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(21)

WASTE SOURCE AND/OR I.D. METHANOL (FIBERS CP) D001

SAMPLED	SPECIFIC GRAVITY	FLASH POINT DEG. F	pH	BTU/LB	TOTAL HALOGENS PPM	MOISTURE %	REACTIVE SULFIDES PPM	REACTIVE CHLORIDES PPM	REACTIVE SILICIDES PPM	REACTIVE CYANIDES PPM	REACTIVE AMMONIA PPM	REACTIVE MERCAPTANS PPM	REACTIVE NITRATES PPM	ORGANIC NITROGEN %	ARSENIC PPM
6/27/87 TO 6/28/88	1.062	72	4.5	7478	82	6.19								6.38	
6/28/88 TO 6/28/89	0.996	84	5.1	6510		16.95									
6/28/89 TO 7/9/90	1.003	88	4.3	5745		27.27									
7/9/90 TO 6/24/91	0.992	88	5.6	7487		13.45									

EXHIBIT C-IV-6

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(24)

WASTE SOURCE AND/OR I.D. WASTE GLYCOL (FIBERS SOLUTION PREP & CP) D004

SAMPLED PERIOD	SPECIFIC GRAVITY	FLASH POINT PMT DEG. F	pH	BTU/LB	TOTAL HALOGEN CONTENT PPM	MOISTURE %	RCRA LIMIT ARSENIC 5 PPM PPM	RCRA LIMIT CHROMIUM 5 PPM PPM	RCRA LIMIT SELENIUM 5 PPM PPM	RCRA BARIUM 100 PPM PPM	RCRA LIMIT CADMIUM 1 PPM PPM	RCRA MERCURY 0.2 PPM PPM	COBALT PPM	ETHYLENE GLYCOL %	NO RCRA LIMIT ANTIMONY PPM	OIL %
12/23/80 TO 3/1/81	1.096	>230	5.5	75	185	5.39										
3/1/81 TO 4/21/81	1.1113	135	6.5	8459	729	0.69	9.0	* <0.10						99+	960	
4/22/81 TO 6/12/81	1.109	>230	5.8	6981	985	1.1	<0.005	* <0.10								
6/13/81 TO 9/10/81	1.106	>230	6.0	8662	520	3.76	7.5	* <0.10								
9/11/81 TO 1/15/82	1.102	>230	5.5	8950	342	43.2	10.0	* <0.10								
1/16/82 TO 6/15/82	1.104	>230	5.8	8550	420	40.2								59.8		
6/16/82 TO 6/24/83	1.101	>230	5.9	9313	166	15.51	2.80							84.3		0.12
6/25/83 TO 6/29/84	1.018	>230	5.1	1055	231	71.84	0.322							26.9	12.8	
6/29/84 TO 6/22/85	1.114	>230	3.9	8562	90	4.17	<0.05	1.0	<0.05				1.3	95.76	20.0	
6/27/87 TO 6/28/88	1.082	>230	3.1	4285	<25	39.14	0.49							60.13	56.3	
6/28/88 TO 6/28/89	1.013	>230	3.4	6110		57.06	<1.0							42.13	171	

* AS CHROMIUM

EXHIBIT C-IV-6

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(24)

WASTE SOURCE AND/OR I.D. WASTE GLYCOL (FIBERS SOLUTION PREP & CP) D004

SAMPLE PERIOD	SPECIFIC GRAVITY	FLASH POINT PM (DEG. F)	pH	BTU/LB	TOTAL HALOGEN CONTENT (PPM)	MOISTURE (%)	ARSENIC RCRA LIMIT 5 PPM (PPM)	CHROMIUM RCRA LIMIT 5 PPM (PPM)	SELENIUM RCRA LIMIT 5 PPM (PPM)	BARIUM RCRA LIMIT 100 PPM (PPM)	CADMIUM RCRA LIMIT 1 PPM (PPM)	MERCURY RCRA LIMIT 0.2 PPM (PPM)	LEAD RCRA LIMIT 5 PPM (PPM)	ETHYLENE GLYCOL (%)	ANTIMONY NO RCRA LIMIT (PPM)	OIL (%)
6/28/89 TO 7/9/90	1.082	>230	3.7	7390		39.70	<1.0							49.54		
7/9/90 TO 6/24/91	1.010	>230	4.0	5285		63.55	<1.0							36.20	150	

June, 1993
Revision No. 2

EXHIBIT C-IV-7

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(30)

WASTE SOURCE AND/OR I.D. CONSTRUCTION GARAGE WASTE - GASOLINE MIXTURE D001

SAMPLED	SPECIFIC GRAVITY	FLASH POINT	PH	BTU/LB	TOTAL CHLORIDE	TOTAL SOLIDS	ARSENIC	CHROMIUM	SELENIUM	BACKGROUND 1	CADMIUM	MERCURY	LEAD	NICKEL
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
12/23/80 TO 3/1/81	0.883	70	6.5	17152	690	<.001							0.09	
3/1/81 TO 4/21/81	0.869	120	5.8	18726		2.57							81.4	
6/13/81 TO 9/10/81	0.862	90	5.8	18554		1.60							98.4	
9/11/81 TO 1/15/82	0.861	80	6.0	17850		0.21							97.2	
1/16/82 TO 6/15/82	0.864	86	6.6	17120		<0.01							87.9	
6/16/82 TO 6/24/83	0.885	74	6.5	17520		0.36							91.7	
6/25/83 TO 6/29/84	0.905	84	6.9	10997		0.25							89.92	
6/29/84 TO 6/22/85	0.878	64	6.4	18460		0.18								
6/22/85 TO 6/24/86	1.055	>230	6.3	11315	9.43%	3.00							70.90	
6/25/86 TO 6/27/87	0.887	76	7.3	16350	<25	3.73							98.08	
6/27/87 TO 6/28/88	0.854	68	6.9	15289	120	4.93								

June, 1993
Revision No. 2

EXHIBIT C-IV-7

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(30)

WASTE SOURCE AND/OR I.D. CONSTRUCTION GARAGE WASTE - GASOLINE MIXTURE D001

SAMPLED	SPECIFIC GRAVITY	FLASH POINT	PH	BTU/LB	TOTAL CHLORIDE	MOISTURE	ATR	RCRA CHROMIUM	RCRA LEAD	RCRA SILVER	RCRA BENZENE	RCRA CARBON TET.	RCRA METHYL ETHYL KETONE	RCRA TOTAL ORGANIC HALOGENS	NORM RADIUM
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
6/28/88 TO 6/28/89	0.885	72	7.0	16920		1.20								98.54	
6/28/89 TO 7/9/90	0.872	64	7.5	16570		1.25								96.10	
7/9/90 TO 6/24/91	0.880	66	6.7	18300		0.43								93.70	
6/24/91 TO 6/24/92	0.772	64	6.8	17450		0.36								92.76	

June, 1993
Revision No. 2

EXHIBIT C-IV-8

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(37)

WASTE SOURCE AND/OR I.D. XYLENE & DMT OR TPA (PD TPA & DMT) D001

SAMPLED	SPECIFIC GRAVITY	FLASH POINT DEG. F	PH	BTU/LB	TOTAL CHLORIDE ION PPM	% MOISTURE	REACTIVE SULFIDE PPM	REACTIVE CYANIDE PPM	REACTIVE SULFIDE PPM	REACTIVE CYANIDE PPM	REACTIVE SULFIDE PPM	REACTIVE CYANIDE PPM	REACTIVE SULFIDE PPM	REACTIVE CYANIDE PPM	REACTIVE SULFIDE PPM	REACTIVE CYANIDE PPM	%	NANOGRAM/L
3/01/81																		
TO	0.919	90	5.5	16076														
4/21/81																		
4/22/81																		
TO		75	6.5	9917														
6/12/81																		
9/11/81																		
TO				13251			10.89											
1/15/82																		
6/16/82																		
TO	1.005	>230	3.8	4112			79.28								< 0.1			
6/24/83																		
6/29/84																		
TO	1.022	>230	3.98	3480			81.90											
6/22/85																		
6/22/85																		
TO	1.520	>230	4.3	8535		3.28												
6/24/86																		
6/25/86	SOLID																	
TO	N/A	104	4.7	7908		17.36												
6/27/87																		
6/27/87	SOLID																	
TO	N/A	112	5.8	7310		19.05												
6/28/88																		
6/28/89	SOLID																	
TO	N/A	110	4.9	8750		6.32												
6/28/89																		

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(37)

WASTE SOURCE AND/OR I.D. XYLENE & DMT OR TPA (PD TPA & DMT) D001

SAMPLED	SPECIFICITY	PHYSICAL STATE	FLASH POINT	pH	BTU/LB	TOTAL ALKALINITY	TOTAL HALOGENS	MOISTURE	REACTIVE SULFIDE	CHLORIDE	REACTIVE CYANIDE	SETTLEABLE SOLIDS	BROMIDE	TOTAL ORGANIC CARBON	TOTAL ORGANIC HALOGEN	SPECIFIC GRAVITY	NITRATE
			DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
6/28/89 TO 7/9/90	SOLID		130	4.5	8630		5.86										
7/9/90 TO 6/24/91	0.889		92	6.4	17590		0.06										
6/24/91 TO 6/24/92	0.910		106	5.5	9170		0.84										

June, 1993
Revision No. 2

EXHIBIT C-IV-9

CAPE FEAR "NON-LISTED" AND OTHER HAZARDOUS WASTES

WASTE #
(56)

WASTE SOURCE AND/OR I.D. WASTE GLYCOL & PHOSPHORIC ACID (FIBERS CP & SOL. PREP.) D002

SAMPLED	SPECIFIC GRAVITY	FLASH POINT	pH	BTU/LB	TOTAL HALOGENS	MOISTURE	REACTIVE SULFIDE	REACTIVE CHLORIDE	CHLORIDE	SETTLEABLE SOLIDS	BALANCE @ 105°	CATION EXCHANGE	MERCURY	REACTIVE CYANIDE	REACTIVE AMMONIA	NORMAL PENTANE EXTRACTABLES
		DEG. F			PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
9/9/82	1.179	>230	0.81	7877												
6/16/82 TO 6/24/83	1.400	>230	1.3	3013												
6/25/83 TO 6/29/84	1.141	>230	1.6	6387												
6/29/84 TO 6/22/85	1.165	>230	1.4	7070												
6/22/85 TO 6/24/86	1.145	>230	1.6	2750												
6/25/86 TO 6/27/87	1.159	>230	1.7	4540												
6/27/87 TO 6/28/88	1.156	>230	1.5	6500												

State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27604
Division of Solid Waste Management
James B. Hunt, Jr., Governor
Telephone 919-733-2178
Jonathan B. Howes, Secretary

June 4, 1993

Mr. Marshall W. Humphrey
Site Environmental Manager
E. I. duPont de Nemours & Company
Cape Fear Plant
Post Office Box 2042
Wilmington, North Carolina 28402

Reference: E. I. duPont de Nemours & Company
NCD 047 369 046

Dear Mr. Humphrey:

The changes in the emergency coordinators at your facility have been processed as a Class 1 permit modification.

Within ninety (90) calendar days of this submission, the permittee must notify all persons on the attached facility mailing list with the exception of the United States Environmental Protection Agency and the State who have been notified.

Any comments should be directed to Helen Cotton at (919) 733-2178.

Sincerely,

Daniel L. Bius/for

William F. Hamner, Ph.D., Head
Permitting Branch
Hazardous Waste Section

WFH/HLC/mb/59.93

Enclosure

cc: Richard R. Campbell, US EPA, Region IV
Daniel L. Bius
Flint Worrell
Helen L. Cotton

E. I. DUPONT DE NEMOURS & COMPANY
NCD 047 369 046
MAILING LIST

Mr. G. Alan Farmer, Chief
RCRA Permitting Branch
Waste Management Division
US EPA, Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Mr. Jerome H. Rhodes, Chief
Hazardous Waste Section
Division of Solid Waste Management
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Mr. A. Preston Howard, Jr., Director
Division of Environmental Management
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Mr. Robert S. Parker
New Hanover County Health Director
2029 South 17th Street
Post Office Box 3785
Wilmington, North Carolina 28406

Mr Allen O'Neal
New Hanover County Manager
320 Chestnut Street, Suite 502
Wilmington, North Carolina 28401

HCL/mb/60.93

Cape Fear Plant
P.O. Box 2042
Wilmington, North Carolina 28402

October 27, 1992

Doug Holyfield
P. O. Box 27687
401 Oberlin Road
Raleigh, North Carolina 27611-7687

Subject: Hazardous Waste Pad

Dear Doug,

The Cape Fear Site is installing a hazardous waste pad cover to minimize rainwater from getting into the hazardous waste pad and to minimize hazardous waste drums from sun/heat exposure. To allow this job to be completed safely, we need to relocate all hazardous waste drums from the hazardous waste pad to a temporary storage area.

I have discussed this with Flint Worrell who has discussed this with the Permitting Section. They both have no problems with this plan.

The temporary storage location will be in an enclosed incinerator building which has secondary containment. Flint is very familiar with this area and will audit this area on November 12. The duration of the temporary storage is approximately 60 days.

Should you have questions, please call me at (919) 371-4223.

Sincerely,

Marshall W. Humphrey

Marshall W. Humphrey
Site Environmental Coordinator

MWH:gn

cc: Flint Worrell
Waste Management Specialist
Solid and Hazardous Waste Management BRanch
Wachovia Bank Building, Suite 606
225 Greer Street
Fayetteville, N.C. 28301

Region IV CM&E Form - Side A

EPA ID: NCD047369048

Submitted by: ____ Date: ____

Entered by: ____ Date: ____

Facility Name: DuPont Cape Fear Plant City: Phenix/Wilmington

VALUATION DATA: New: __ Change: __ Delete: __ (___ : Required)

Agency: 4 Date: Mo. 03 / Day 22 / Year 93 Type: CEI

Control Number — Data Entry Personnel

Person: 009 Reason:

Coverage Areas: (E: Evaluated NE: Not Evaluated NA: Not Applic. D:Del.)

Generators

Code	
GER	
GGR	E
GLB	E
GSQ	
GMR	
GOR	
GPT	E
GRR	E
GSC	

Transporters

Code	
TGR	
TMR	
TOR	
TRR	
TWD	

TSD's

Code		Code		Code	
DCH		DLB	E	DPB	
DCL		DLF		DPP	
DCP		DLT		DSI	
DFR		DMC		DTR	
DGS	E	DMR		DTT	
DGW		DOR		DWP	
DIN		DOT			

Compliance Schedule (TSD, Gen., Trans.)

FEA ___ CAS ___

Evaluation Comments:
(72) 1 : ____
2 : ____

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: __ Type: ___ Date (mdy) Determined: __/__/__ Class: __

Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__

Reg. Type: __ Reg. Description (30): ____

Comment (72): ____

#__ Agency: __ Type: ___ Date (mdy) Determined: __/__/__ Class: __

Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__

Reg. Type: __ Reg. Description (30): ____

Comment (72): ____

#__ Agency: __ Type: ___ Date (mdy) Determined: __/__/__ Class: __

Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__

Reg. Type: __ Reg. Description (30): ____

Comment (72): ____

Continue violation data on Side B if necessary -

State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
Hazardous Waste Section

SITE SAFETY PLAN (SSP) UPDATE FORM

(A) Facility Name: DuPont Cape Fear Plant EPA ID#: NCD 047 369 048

Address: State Road 1426 Phoenix Phone#: 919-371-4000 - 4545

Contact: Marshal Humphrey Phone#: 919-371 4000 - 4545

Facility Safety Designee: Marshal Humphrey

HWS Staff: L.F. Worrell Date: 3-22-93

(B) REVIEW AND CHANGES

SSP Reviewed: 1993 SSP Change:_____ (1) SSP Unchanged:_____

Comments:

(1) NOTE: Any changes made in the facility process descriptions or health and safety considerations section of the SSP must be shown on a new SSP.

(C) EMERGENCY INFORMATION

Ambulance: SAME Telephone #: —

Hospital: SAME Telephone #: —

Police: SAME Telephone #: —

Fire Department: SAME Telephone #: —

Fire and Emergency Signals Reviewed: 1993

Site Evacuation Plan Reviewed: 1993

SAFETY OFFICER:_____ DATE:_____

Region IV CM&E Form - Side A

EPA ID: NCD047369046

Submitted by: _____ Date: _____

Entered by: _____ Date: _____

Facility Name: Dupont E I De Nemours & Co Cape City: Phoenix

EVALUATION DATA: New: __ Change: __ Delete: __ (___ : Required)

Agency: S Date: Mo. 11 / Day 12 / Year 92 Type: 07H

Control Number Data Entry Personnel

Person: 009 Reason: 01

Coverage Areas: (E: Evaluated NE: Not Evaluated NA: Not Applic. D: Del.)

Generators: GER, GGR E, GLB, GSQ, GMR, GOR, GPT, GRR, GSC

Transporters: TGR, TMR, TOR, TRR, TWD

TSD's: DCH, DCL, DCP, DFR, DGS, DGW, DIN, DLB, DLF, DLT, DMC, DMR, DOR, DOT, DPB, DPP, DSI, DTR, DTT, DWP

Compliance Schedule (TSD, Gen., Trans.)

FEA ___ CAS ___

Evaluation Comments:
(72) 1 : ____
2 : ____

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: __ Type: ___ Date (mdy) Determined: __/__/__ Class: __

Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__

Reg. Type: __ Reg. Description (30): ____

Comment (72): ____

#__ Agency: __ Type: ___ Date (mdy) Determined: __/__/__ Class: __

Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__

Reg. Type: __ Reg. Description (30): ____

Comment (72): ____

#__ Agency: __ Type: ___ Date (mdy) Determined: __/__/__ Class: __

Priority: __ Branch: __ Person: ___ Seq. Number (Data Entry) ____

Return to Compliance: -- Scheduled -- __/__/__ --- Actual ---- __/__/__

Reg. Type: __ Reg. Description (30): ____

Comment (72): ____

Continue violation data on Side B if necessary -

DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES
DIVISION OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

ACTIVITY REPORT

Subject: DuPont E I De Nemours & Co Cape Fear Plant

Location: State Road 1426 **Date:** 11-12-92

Address: P.O. Box 2042 **Time Spent:** hour

City: Phoenix **State:** N.C. **Zip:** 28462

By Whom: Floyd Worrell

Persons Contacted: Marshall W Humphrey 919-546-6920
(owner, agent, tenant, manager, other)

Reason For Visit: Inspection of Temporary Storage Area.

Copies to:

Report: Inspection conducted on this date of the temporary storage located in the incinerator building. This area is an approved area than permanent storage. This area is in compliance with RCRA standards, Records, contanment alarm systems spill prevation equipment, well observed area.
* See attached letter

Activity Type: Check Most Appropriate

1. Complaint		5. Presentation	
2. Spill		6. Training	
3. Technical Assistance		7. Other	/
4. Meeting			

RH/dd/P20c:

DUPONT

Cape Fear Plant
P.O. Box 2042
Wilmington, North Carolina 28402

October 27, 1992

Doug Holyfield
P. O. Box 27687
401 Oberlin Road
Raleigh, North Carolina 27611-7687

Subject: Hazardous Waste Pad

Dear Doug,

The Cape Fear Site is installing a hazardous waste pad cover to minimize rainwater from getting into the hazardous waste pad and to minimize hazardous waste drums from sun/heat exposure. To allow this job to be completed safely, we need to relocate all hazardous waste drums from the hazardous waste pad to a temporary storage area.

I have discussed this with Flint Worrell who has discussed this with the Permitting Section. They both have no problems with this plan.

The temporary storage location will be in an enclosed incinerator building which has secondary containment. Flint is very familiar with this area and will audit this area on November 12. The duration of the temporary storage is approximately 60 days.

Should you have questions, please call me at (919) 371-4223.

Sincerely,

Marshall W. Humphrey

Marshall W. Humphrey
Site Environmental Coordinator

MWH:gn

cc: Flint Worrell
Waste Management Specialist
Solid and Hazardous Waste Management BRanch
Wachovia Bank Building, Suite 606
225 Greer Street
Fayetteville, N.C. 28301

State of North Carolina
Department of Environment, Health, and Natural Resources
512 North Salisbury Street • Raleigh, North Carolina 27604
Division of Solid Waste Management
James B. Hunt, Jr., Governor
Telephone 919-733-2178
Jonathan B. Howes, Secretary

July 6, 1993

Mr. Marshall W. Humphrey
Site Environmental Manager
E. I. duPont de Nemours & Company
Cape Fear Plant
Post Office Box 2042
Wilmington, North Carolina 28402

Reference: E. I. duPont de Nemours & Company
NCD 047 369 046

Dear Mr. Humphrey:

The changes in the emergency coordinators at your facility were processed as a Class 1 permit modification June 4, 1993.

Within ninety (90) calendar days of this submission, the permittee must notify all persons on the attached facility mailing list with the exception of the United States Environmental Protection Agency and the State who have been notified. Disregard the previous sentence if notification has occurred.

Any comments should be directed to Helen Cotton at (919) 733-2178.

Sincerely,

Daniel L. Bius/for

William F. Hamner, Ph.D., Head
Permitting Branch
Hazardous Waste Section

WFH/HLC/mb/69.93

cc: Richard R. Campbell, US EPA, Region IV
Daniel L. Bius
Flint Worrell
Helen L. Cotton

E. I. DUPONT DE NEMOURS & COMPANY
NCD 047 369 046
MAILING LIST

Mr. G. Alan Farmer, Chief
RCRA Permitting Branch
Waste Management Division
US EPA, Region IV
345 Courtland Street, NE
Atlanta, Georgia 30365

Mr. Jerome H. Rhodes, Chief
Hazardous Waste Section
Division of Solid Waste Management
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Mr. A. Preston Howard, Jr., Director
Division of Environmental Management
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Mr. Michael U. Rhodes
Brunswick County Health Director
Post Office Box 9
Bolivia, North Carolina 28422

Mr. John Harvey
Brunswick County Manager
Government Center
Box 249
Bolivia, North Carolina 28422

HCL/mb/66.93

Flynn,
Please place
these pages in
duPont's applicat
Thanks
Helen

EXHIBIT I

NT CO., CAPE FEAR SITE
ENCY COORDINATORS

NAME	TITLE	HOME ADDRESS	WORK PHONE #	HOME PHONE #
M. A. May*	Hazardous Waste Coordinator	308 Sierra Drive Wilmington, NC	371-4610	791-6562
R. D. DeHaas*	Environmental Specialist	306 Stonewall Jackson Drive Wilmington, NC	371-4865	791-8396

*See Attached Exhibit II for Experience and Qualifications

EXHIBIT II

E. I. DU PONT CO., CAPE FEAR SITE
EMERGENCY COORDINATORS

A. Position Title: Site Hazardous Waste Coordinator

Name: M. A. May

Position Responsibilities and Duties:

- Planning Responsibilities:

  (a) Provide guidance to the Plant in segregating wastes to minimize disposal costs.

  (b) Keep the Plant appraised of all disposal rules.

  (c) Coordinate, to insure compliance with RCRA & DOT regulations, off-plant processing of all new waste streams.

  (d) Forecast waste stream volumes and assign disposal priorities (forecast calculations to be done by specialist in Textile Fibers and Chemicals Departments).

  (e) Keep Plant Management informed of status of waste disposal.

  (f) Become familiar with and stay up-to-date on all hazardous waste and other waste management regulations.

- Coordinator Other Responsibilities:

  (a) Train contractor Waste Handling Supervisor and follow-up on contractor Hazardous Waste Handling Training Program.

  (b) Audit container management, hazardous waste storage area, hazardous waste storage tank and incinerator operations.

  (c) Audit off-site treatment, storage and disposal facilities handling Du Pont, Cape Fear Plant wastes.

  (d) Maintain records and files as follows:

    (1) Personnel training

    (2) Shipment manifests

    (3) Facility inspection

    (4) Waste storage

    (5) Waste sampling

    (6) Hazardous waste management facility operating records

(e) Prepare annual report and submit to the Department of Human Resources.

- Hazardous Waste Coordinator Procedural (Contract Administration) Responsibilities:

  (a) Assure the completeness and technical accuracy of Waste Characterization information.

  (b) Minimize Du Pont's risk/exposure

    (1) Clear and oversee all plant contact with disposal contractors.

    (2) Assure all waste sent off-plant is covered by valid contract and TSD facility has valid RCRA Permit.

    (3) Assure waste manifest information agrees with information in corresponding disposal contracts.

    (4) Assure waste hauler has necessary permits in states requiring them.

  - Reports to Area Superintendent, Manufacturing Support.

Experience and Qualifications:

- Thirty-three (33) years experience in chemical plant operations.

- Twenty (20) years experience in shipping hazardous materials in accordance with DOT Regulations, and over twelve (12) years experience in shipping hazardous wastes in accordance with RCRA.

- Attended several seminars on DOT and RCRA hazardous material hazards, solid and liquid packaging, labeling requirements, etc.

- Eleven (11) years experience in conducting site hazardous material audits.

- Responsibilities include all Site hazardous waste operations with the support of Du Pont Environmental Management Specialists/Engineers.

Dupont Cape Fear Plant Brunswick Co.

3-22-93 CEI Unannounced

Contacts: Marshal Humphrey Env. Safety

Check financial with Jenny Copp

NCD 047 369 048

919 371-4000

Areas: DMT, TPH, Raw

DMT Plant \ Chemical Business

TPH Plant /

Staple - Business

Continuous yarn Business

Also have business mgrs.

fibre

New Pad up

finding up

All days - manifests

313 Emissions Reduction from TPH operation

Plant Mgr - Site mgr. Ron Burger for site 9 mos.

Permit for intermediate waste oils

Spills / Problems

Not Resp.

Cat. A

Jan. 92

Cat. B oil spills Any Not

Category C Any

Closure Plan - Post Closure - fin. Dollars - addresses the storage unit

EPA Oil Response Plan

Haz. Material Sp. Resp Plan

Clean Land's Harbor

Southeast Remediation

Waste Min. Plan in-Sans updated

Training - Co. Incin. Building

Emerg. Coor. - Cliff Black / Bob Dehaus & Alman

Trainer of HW - Al Alman

Signs Manifest - Al Alman / Scott Franciolo / S & F

Inspection - Gary

New Pad - 100,000. or Ransom Const. Corp.

Permit Renewal

TSDF's DuPont Pontchartrain LA LAD 001 890 367

H 00002

Methylene Chloride F001

Paint Waste Mat

F003, F005

D008 D018

D006 D007

D008 D035

INCIN.

0001 1/7/93

Chem. Waste Mgmt.

1200830

Alabama

filter Cake

Non Haz.

DS11 finish oil

Sep. oil water / Lees-side

Douglas Battery

566 Battery Dr.

Winston Salem 27117

Batteries

Lube Oil

Rileys

48,000 closure cost only

Decorating River

Closure - Annual

Dupont 3-22-93

TO:
C. T. BLICK
T. L. DAVIS
J. M. EDENFIELD
B. R. HAMMOND
P. E. HOWARD
M. W. HUMPHREY
W. B. LUPTON
M. A. MAY
J. MCLAWHORN
J. B. MCLAWHORN
W. C. NORRIS III
J. G. RICHARDSON
C. R. ROBINSON
H. I. SHADE

FROM: STEPHANIE MOORE

WASTE HANDLING REPORT DECEMBER 1992

Attached is the DECEMBER 1992 Waste Handling Report for Cape Fear.

Attachment

Incineration Operation - INCINERATORS OPERATION CEASED ON 3/6/92

			ON-SITE DISPOSAL						
	POUNDS COLLECTED		POUNDS INCINERATED		POUNDS LANDFILLED		POUNDS OFF-SITE DISPOSAL		1990 POUNDS COLLECTED
WASTE # Items	MTD	YTD	MTD	YTD	MTD	YTD	MTD	YTD	YTD
73 CAPE FEAR TRASH	129M	1,632M	0	385M	-	-	129M	1221M	78M
68 FLY BOTTOM ASH	4,935M	46,237M	0	0	4,935M	46,237M	-	-	16,000M

					1992		1992		
	1992 POUNDS COLLECTED		1992 POUNDS INCINERATED		ON-SITE DISPOSAL POUNDS LANDFILLED		POUNDS OFF PLANT DISPOSAL		1990 POUNDS COLLECTED*
ITEM	MTD	YTD	MTD	YTD	MTD	YTD	MTD	YTD	YTD
NON-HAZARDOUS WASTES*	628M	10,448M	0	769M	40M	860M	663M	8,532M	29,850M
HAZARDOUS WASTES	3M	304M	0	0	0	0	0	59M	184M

* THESE TOTALS EXCLUDE WASTE #68 FLY BOTTOM ASH

REGULATED WASTE (LISTED)
(HAZARDOUS WASTE PAD)

Plant Waste No.	Listed Hazardous Waste	January	February	March	April	May	June	July	August	September	October	November	December	Total
								POUNDS						
3.	Methanol Mixture Flammable Liquid, N.O.S. UN 1993 (F002,D001)	520	260	520	260	260	4764	260	2342	260	260	0	260	9968
								POUNDS						
15.	Tetrachloroethylene Mixture Hazardous Waste Liquid, N.O.S. ORM-E,NA 9189 (F002)	3425	2741	3083	3083	3083	3400	2398	2056	2741	2398	2398	2056	32864
								POUNDS						
18.	Paint Thinning Liquid, Flammable Liquid, N.O.S. UN 1993 (F003 & 5, D001,5,6,7,9)	1017	339	0	339	339	339	339	1017	339	0	339	339	4746
								POUNDS						
27H.	Lube Oil/Hydraulic fluid (Mixed with a variety of Halogenated Solvents	0	0	0	0	0	0	0	0	0	0	0	0	0
								POUNDS						
54.	Freon 11 & Lube Oil Mixture Hazardous Waste Liquid, N.O.S. ORM-E, NA 9189(F001)	0	0	0	0	0	0	0	0	0	0	0	0	0
								POUNDS						
57.	Freon 12 &/or 22 & Lube Oil Mixture (F001)	0	0	393	0	393	393	393	0	393	0	0	0	1964

REGULATED WASTE (NON LISTED)
(HAZARDOUS WASTE PAD)

Plant Waste No.	"Non-Listed Hazardous Waste	January	February	March	April	May	June	July	August	September	October	November	December	Total
							POUNDS							
5.	Acetic Acid & Xylene, Flammable Liquid,N.O.S., UN 1993 (D001,2)	455	455	0	0	0	0	0	455	0	0	0	0	1364
							POUNDS							
6.	Agitene Waste Solvent N.O.S. NA 1993 (D001)	698	0	0	349	698	349	0	0	0	698	0	0	2792
							POUNDS							
21.	Methanol Flammable Liquid UN 1230 (D001)	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
30.	Gasoline Mixture Flammable Liquid NA 1257 (D001)	0	367	2936	0	367	1101	734	0	367	734	0	0	6605
							POUNDS							
37.	Xylene Mixture Flammable Liquid, NA 1257 (D001)	0	0	0	0	0	0	232437	***	***	***	***	***	232437
							POUNDS							
56.	Glycol & Phosphoric Acid Corrosive Material, UN 1805 (D002)	0	0	0	0	0	0	0	0	0	0	0	0	0

*** FIGURES ARE NOT AVAILABLE

REGULATED WASTE (NON-LISTED)
(HAZARDOUS WASTE PAD)

Plant Waste No.	"Non-Listed" Hazardous Waste (E. P. Toxic)	January	February	March	April	May	June	July	August	September	October	November	December	Total
							POUNDS							
12.	Precipitator Ash ORM-E NA 9189 (D007)	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
24.	Ethylene Glycol (D004)	0	0	0	0	0	0	0	0	13899	0	0	0	13899

NON-REGULATED (NON-LISTED)
INCINERATED ON-SITE

Plant Waste No.	"Non-Listed" Non-RCRA Waste	January	February	March	April	May	June	July	August	September	October	November	December	Total
							POUNDS							
13.	Fuel Oil No. 6	852	1705	2131	426	426	0	1279	0	426	0	852	0	8097
							POUNDS							
20.	CP Boilout Waste	3436	3007	10738	5584	2148	859	5154	5584	430	4295	6013	4295	51112
							POUNDS							
23.	Hotwell Waste	13010	8006	8006	11509	14512	6505	15012	16013	10008	11009	7506	7006	128102
							POUNDS							
27N.	Lube Oil & Hydraulic fluid	15725	366	10240	6948	3657	2926	9508	9143	9143	16091	4751	1097	89599
							POUNDS							
31.	X-Ray Developer	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
38.	TEG Rinsewater	0	0	0	0	0	0	0	729	0	0	0	0	729
							POUNDS							
39.	Lunchroom Cooking Oil	586	200	586	2327	586	401	1171	200	385	771	586	586	8384
							POUNDS							
45.	Finish Oil Base & Emul.	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
47I.	Waste DMT	417	0	417	834	0	0	0	***	***	***	***	***	1668
							POUNDS							
48.	Diesel Fuel & Water	0	0	0	0	0	0	0	0	1251	0	0	0	1251
							POUNDS							
49.	Trim Tank	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
52.	DMT Ditch Waste	0	0	0	0	0	0	318104	***	***	***	***	***	318104
							POUNDS							
58.	Polyethylene Glycol	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
74.	Sandblast	0	0	0	0	0	0	22768	***	***	***	***	***	22768
							POUND							
79.	DS-11 Filter Cake	4987	2602	22335	20817	40983	32743	65703	53126	69172	30358	21684	85652	450160
							POUNDS							
87.	Oily Rags/Oil Filters	6505	10625	417	7506	5004	10008	12093	7923	6255	10425	6672	7089	90522
							POUNDS							
*90.	Misc. Spills, etc.	0	0	2085	0	0	0	0	417	0	0	0	0	2502

* See Incinerator report for description of this waste for the month a number is reported

NON-REGULATED (NON-LISTED)
INCINERATED ON-SITE

Plant Waste No.	"Non-Listed" Non-RCRA Waste	January	February	March	April	May	June	July	August	September	October	November	December	Total
							POUNDS							
36.	Kinston Waste Liquid	31108	0	0	0	0	0	0	0	0	0	0	0	31108
							POUNDS							
42.	Separated Yarn Finish	138944	68267	132518	57826	24094	44173	60236	94771	60236	75977	77905	115652	950599
							POUNDS							
59.	Waynesboro Finish Oil	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
60.	Cooper River Finish Oil	0	0	0	0	0	0	0	0	0	0	0	0	0
							M POUNDS							
73.	Cape Fear Trash	191.9	189.6	152.4	72.5	104.4	103.8	88.4	148.1	257.4	197.5	129.0	85.9	1720.9
							POUNDS							
82.	Kinston Trash	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
83.	Camden Trash	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
84.	Florence Trash	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
85.	Waynesboro Lycra	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
86.	Fayetteville Butacite	0	0	0	0	0	0	0	0	0	0	0	0	0

*** FIGURES ARE NOT AVAILABLE

NON-REGULATED (NON-LISTED)
LANDFILLED ON-SITE

Plant Waste No.	"Non-Listed" Non-RCRA Waste	January	February	March	April	May	June	July	August	September	October	November	December	Total
							POUNDS							
34.	Incinerator Ash (North)	42,380	23,520	0	0	0	0	0	0	0	0	0	0	65900
							POUNDS							
35.	Incinerator Ash (South)	42,380	23,520	0	0	0	0	0	0	0	0	0	0	65900
							POUNDS							
47L.	Waste DMT	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
63.	Polymer/String Waste	0	0	0	60420	48500	48380	16260	0	0	0	0	0	173560
							M POUNDS							
68.	Fly/Bottom Ash	5183.7	4808.5	4306.6	3606.1	3587.5	4410	3727.5	3237.5	3937.5	4497.5	4935.0	1812.5	51049.9
							POUNDS							
70.	Asbestos Containing Material	60580	29460	53760	68320	28620	47120	21500	14700	19600	21060	7500	7610	379860
							POUNDS							
76.	Insulation	35190	36980	27780	45800	20560	44260	47980	22940	28680	40860	19880	18780	389690
							POUNDS							
77.	Straps	4740	3060	1640	1620	800	1480	750	760	2700	2040	11380	1280	32250
							POUNDS							
78.	Glass/Aerosol Cans	0	1880	7000	620	1880	480	500	0	960	640	1110	0	15400
							POUNDS							
88.	Rubble	6240	48340	0	0	0	0	0	29220	14920	0	0	0	98720

NON-REGULATED (NON-LISTED)
OFF-PLANT DISPOSAL

Plant Waste No.	"Non-Listed" Non-RCRA Waste	January	February	March	April	May	June	July	August	September	October	November	December	Total
							POUNDS							
8.	Terephthalic Acid	0	0	0	0	0	0	0	0	0	0	0	0	0
							POUNDS							
9.	MPT Side Cut	0	0	0	0	0	0	1735	***	***	***	***	***	1735
							POUNDS							
10.	Boiler Ash	417	0	1668	0	0	0	5204	1251	***	***	***	***	8510
							POUNDS							
11.	Esterifier Sludge	834	0	2085	0	0	0	99830	***	***	***	60680	7089	
							POUNDS							
22.	Titanium Dioxide and Ethylene Glycol Slurry	1251	1251	3753	5838	2919	4587	6672	7506	10425	834	3553	4170	52759
							M POUNDS							
61.	DS-11 Finish	1246.0	893.7	1424.0	784.5	582.2	0	0	0	0	494.9	269.2	0	5803.6
							POUNDS							
65.	Medical Waste	0	0	0	0	0	0	0	0	0	0	0	0	0

*** FIGURES ARE NOT AVAILABLE

FLINT: FYI

REPLACES
JIMMY RICHARDSON ⟷
CLIFF BLICK

DUPONT

Cape Fear Site

MARSHALL W. HUMPHREY
Environmental Coordinator

Du Pont Fibers
Wilmington, NC 28402

Business (919) 371-4223
Home (919) 675-3759

REPLACES
DOD MAYS

⟷

DUPONT

1051 PARKWOOD DR. N.E.
LELAND, NC 28451
HOME: 371-2676
BUSINESS: 371-4117

CLAUDE R. ROBINSON, JR.
CONTRACTS SPECIALIST
CONTRACT COORDINATOR

E.I. DUPONT DE NEMOURS & COMPANY (INC.)
CAPE FEAR SITE
P.O. BOX 2042
WILMINGTON, NC 28402

↑

↓ SAME OFFICE

DUPONT

(919) 371-4117

LUEBELL F. MONROE
CONTRACTS COORDINATOR ASSISTANT

E.I. DUPONT DE NEMOURS & COMPANY (INC.)
CAPE FEAR SITE
P.O. BOX 2042
WILMINGTON, NC 28402

Region IV CM&E Form - Side A

EPA ID: NCD047369046

Submitted by: ____ Date: ____

Entered by: ____ Date: ____

Facility Name: DuPont Cape Fear Site City: Phoenix

EVALUATION DATA: New: __ Change: __ Delete: __ (——— : Required)

Agency: S Date: Mo. 09 / Day 25 / Year 92 Type: CEI

Control Number Data Entry Personnel

Person: 009 Reason:

Coverage Areas: (E: Evaluated NE: Not Evaluated NA: Not Applic. D:Del.)

Generators		Transporters		TSD's					
GER		TGR		DCH		DLB	E	DPB	E
GGR	E	TMR		DCL	E	DLF		DPP	E
GLB	E	TOR		DCP		DLT		DSI	
GSQ		TRR		DFR	E	DMC	E	DTR	
GMR		TWD		DGS	E	DMR	E	DTT	
GOR				DGW		DOR		DWP	
GPT	E			DIN		DOT			
GRR	E								
GSC									

Compliance Schedule (TSD, Gen., Trans.)

FEA CAS

Evaluation Comments: (72) 1 : ____

2 : ____

VIOLATION DATA: New: __ Change: __ Delete: __

#__ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ____

Comment (72): ____

#__ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ____

Comment (72): ____

#__ Agency: Type: Date (mdy) Determined: / / Class:

Priority: Branch: Person: Seq. Number (Data Entry)

Return to Compliance: -- Scheduled -- / / --- Actual ---- / /

Reg. Type: Reg. Description (30): ____

Comment (72): ____

Continue violation data on Side B if necessary -

State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
Hazardous Waste Section

SITE SAFETY PLAN (SSP) UPDATE FORM

(A) **Facility Name:** Dupont Circle Fear Site **EPA ID#:** NCD 047 369 046

Address: P.O. Box 2041 **Phone#:** 919 371-4224

Contact: Cliff Block **Phone#:** 919 371-4224

Facility Safety Designee: MARSHALL Humphrey

HWS Staff: Fleet Wornell **Date:** 9-25-92

(B) **REVIEW AND CHANGES**

SSP Reviewed: 1992 **SSP Change:** _____ (1) **SSP Unchanged:** _____

Comments: _____

(1) **NOTE: Any changes made in the facility process descriptions or health and safety considerations section of the SSP must be shown on a new SSP.**

(C) **EMERGENCY INFORMATION**

Ambulance: SAME **Telephone #:** —

Hospital: SAME **Telephone #:** —

Police: SAME **Telephone #:** —

Fire Department: SAME **Telephone #:** —

Fire and Emergency Signals Reviewed: 1992

Site Evacuation Plan Reviewed: 1992

SAFETY OFFICER: _____ **DATE:** _____

RCRA INSPECTION REPORT

1) **FACILITY INFORMATION**

Dupont Company Cape Fear Site
P.O. Box 2042, SR1426
Phoenix N.C. 28451
NCD 047 369 046 Brunswick County

2) **FACILITY CONTACT**

Marshall Humphries - RCRA Contact
Ron Burger - plant manager

3) **SURVEY PARTICIPANTS**

Marshall Humphries RCRA Contact
Dodd May - Contracts
Al Mays manifests Shipping
Flint Worrell - NC Waste mgmt. Specialist

4) **DATE OF INSPECTION**

September 25th 1992

5) **PURPOSE OF SURVEY**

Compliance Evaluation Inspection

6) **FACILITY DESCRIPTION**

Dupont Cape Fear site is located on the Cape Fear River north of Wilmington in the Navassa Community. At this Dupont TPA DMT, Dacron polyester Resin and Dacron polyester fiber is produced. Dupont has a storage permit since the late 80's. Areas of accumulation are Chemicals Administration Building - Lab Wastes, blending (2) solvents (2) Imtro Area accumulation of paint Related wastes, (3) Construction area Truck shop Maintenance, gas, solvents (4) Paint shop Construction Area - paint Related waste (5) Secure Storage pad Permit Area. TSDF is E.I DuPont Pontchartrain Works La Place LAD001890369. Treatment include INCIN BIODL WCTOX CLOSED CARBN. Employees 2000 people including contractors.

DII324

7) **WASTE MINIMIZATION**

ADVANCED - Clean

8) **SITE DEFICIENCIES**

None

10) **RECOMMENDATIONS**

(1) Storage Area Check Containers - Rec.
(2) All waste over Containment

11) **SIGNED**

[signature] — **INSPECTOR / REVIEWER**

Marshall Humphries — **FACILITY CONTACT**

9-25-92 — **DATE**

SECTION 7 - CHEM[illegible] HAZARDS Item 710-6

HAZARDOUS SUBSTA[illegible] PROCEDURE

[illegible]ACHMENT II

[illegible] Date: 3-1-92
Category [illegible]

[illegible] 3-1-92

[illegible] Release ~5 Min

[illegible] Ground

[illegible] C.P.
[illegible] gasket
[illegible] area.

[illegible]ation

[illegible] sewer ✓

Pertinent Facts: [illegible] closure or [illegible] Failed [illegible] gallons of ethylene [illegible] onto the floor [illegible] gallons [illegible] storm sewer [illegible] valved off. Area has been cleaned up.

Recommendations: Responsibility Completion Date

Replace defective [illegible] assembly & gasket C.B. Ward 3-1-92

Investigated by: C.B. Ward

Approved: Area

Cape Fear Site
December 1991

SECTION 7 - CHEMICAL HAZARDS

Item 710-6

HAZARDOUS SUBSTANCE SPILL/RELEASE REPORTING PROCEDURE

ATTACHMENT II

Report Date: 3-1-92

TO: J.G. RICHARDSON
C.T. BLICK
M.W. HUMPHREY
K.E. SMITH
FIBERS SAFETY OFFICE

Category (See Back)
A
B ✓
C

FROM: C. B. Ward
AREA: YARN CP

ENVIRONMENTAL INCIDENT REPORTING SYSTEM

1. Chemical name of substance released Ethylene Glycol
2. Quantity released (Lbs) 90 lbs (8 to 10 Gals) 3. Date of release 3-1-92
4. Time of release 0647 5. Duration of release ~5 Min.
6. Release was into: Air _____ Surface water _____ Sewer ✓ Ground _____
7. Is released chemical a (Attachment I) hazardous substance? YES
8. Is the reportable quantity exceeded? YES
9. Description of release (include location and equipment involved) Yarn CP 4th Floor, PP 26 Pot filter, defective door/gasket. Allowed release of ~ 100 gallons of Ethylene Glycol into Area.
10. Release caused by: Standard Practice Violation _____ Design or Fabrication _____ Inadequate Procedure _____ Maintenance _____ Lack of Awareness _____ Malfunction ✓ Others _____
11. Final Result of Release (check one): contained _____ went into process sewer ✓ went into drain ✓ went into air _____
12. Pertinent Facts: PP Pot Filter door closure or gasket failed and, Released ~ 100 gallons of Ethylene Glycol onto the floor (plastic lined ceiling). ~ 10 gallons ran into storm sewer under roll-up door ledge. Defective filter was valved off. Area has been cleaned up.
13. Recommendations: Responsibility Completion Date

Replace defective Door closing assembly & gasket — C. B. Ward — 3-1-92

Investigated by: C. B. Ward, _____, _____ Approved: _____ Area

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 9

To Flint Worrell	From Wilm. RO
Co.	Co.
Dept.	Phone #

Cape Fear Site
December 1991

SECTION ... CHEMICAL HAZARDS Item 710-8

HAZARDOUS MATERIALS INCIDENT REPORT PROCEDURE

ATTACHMENT III

... INCIDENT ... MANAGEMENT
(INITIAL REPORT - ATTACH COPY W. ORIGINAL)

1. Summary of the incident.

See attached

2. Actions taken to respond to and control the release.

See attached

3. Any known or anticipated acute or chronic health risks associated with the release.

None

4. Where appropriate, advice regarding medical attention necessary for exposed individuals.

Yes See attached

5. Attach map or sketch, if appropriate, to the report.

Yes

Item 710-10

WORK SHEET

Ethylene Glycol

(8 - 10 gallons)

3-1-92

~0647

~2 minutes

SEVER ✓ GROUNDS

None

c wash contaminated

PHONE: 919-371-4333

NATIONAL RESPONSE CENTER

Cape Fear Site
December 1991

Item 710-9

ATTACHMENT IV

ATION
40 CFR 300.94
any EXTREMELY HAZARDOUS
sults in EXPOSURE to persons
mation is for the state and
delay to the extent the

919-[illegible]-0376 - BUSINESS
910-[illegible]-2438 - RESIDENCE

919-733-3867 - WORKDAYS
800-662-7956 - NON-WORKDAYS
919-762-3361 - AFTER 6 P.M. WORKDAYS
9-919-899-2337 - BEEPER

9-395-3900 (DAYS) MON. - FRI.
FAX. 9-[illegible]-2004 - OTHER HOURS

9-1-800-424-8802

NAME:

[illegible] ISLAND NC 28451
[illegible]INGTON, NC 284[illegible]

ACES:

[illegible] This call is to relay
[illegible] reporting requirements.
believe it warrants an emergency
[illegible] Work Sheet)

[illegible], NC. We have a hazardous
response from Title and other
emergency release includes a Title
a Superfund (CERCLA) Hazardous
[illegible]: (From Work Sheet)

DUPONT

Better things for better living

The World of DuPont

4 **ENDURING**

FROM 1802...A TRADITION OF CONSISTENTLY HIGH QUALITY

5 **DYNAMIC**

TWO CENTURIES OF CHANGE, DISCOVERY, AND GROWTH

6 **COMPETITIVE**

STRATEGY FOR THE 1990S AND BEYOND

9 **INNOVATIVE**

A CASCADE OF NEW PRODUCTS THROUGH SCIENCE AND TECHNOLOGY

10 **RESOURCEFUL**

DUPONT RESEARCH AND DEVELOPMENT ENHANCE THE QUALITY OF LIFE

12 **RESPONSIBLE**

A COMMITMENT TO SAFETY, HEALTH, AND ENVIRONMENTAL EXCELLENCE

15 **COLLEGIAL**

A RICH DIVERSITY OF HUMAN TALENT

16 **CARING**

A STRONG SENSE OF SOCIAL RESPONSIBILITY...SINCE 1802

18 **INSPIRED**

NEW IDEAS AND CONSTANT VALUES SHAPE THE FUTURE

20 **MARKETS SERVED**

BETTER THINGS FOR BETTER LIVING

Pictured here is one of the original houses of the du Pont family. Reprinted on the overlay is the letter that President Thomas Jefferson wrote to the founder of DuPont in 1811, praising the quality of the blasting powder that was being used to clear the land at Monticello, President Jefferson's estate in Virginia.

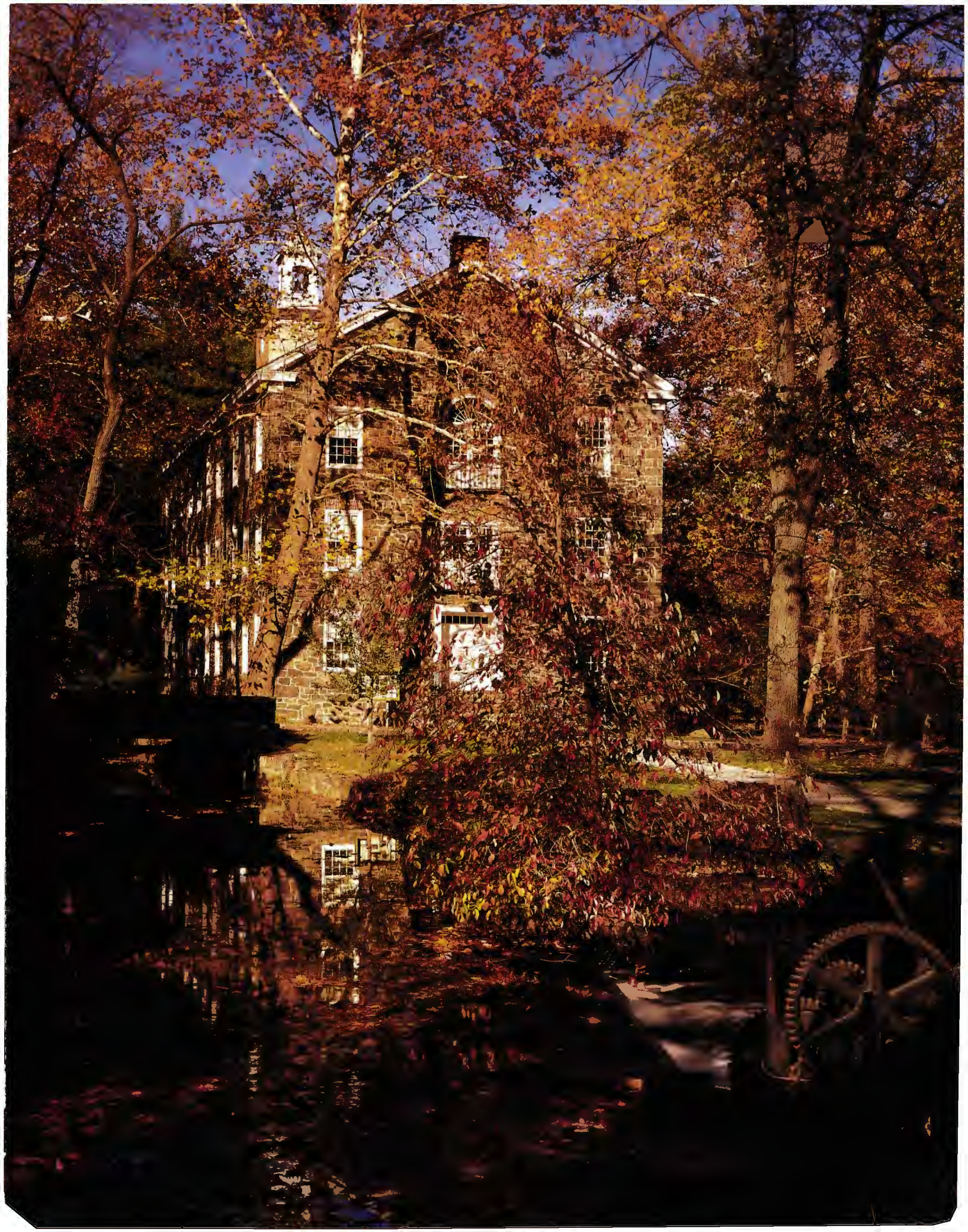
Today, DuPont people make a variety of high-value products for industry including polymers, chemicals, fibers, and petroleum products...products for agriculture, electronics, transportation, apparel, food, aerospace, construction, and health care, to name a few. DuPont people serve customers in these and other industries every day, offering "better things for better living"—now and for generations to come—as the company prepares to begin its third century of scientific, technological, commercial, and social achievement.

Historical photographs generously provided by Pictorial Collections of The Hagley Museum & Library, Wilmington, Delaware.

Dear Sir Monticello Nov. 2. 11.

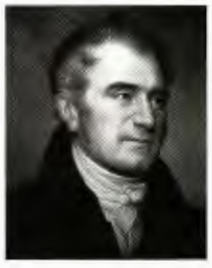
I recieved, some time since, the keg of powder, you forwarded for me, and I have been daily expecting you would be so kind as to send on the note of the cost that I might remit it to you. the object of the present is to pray you to forward me another quarter of a hundred, comprehending half a doz. canisters of shooting powder as before, & the rest proper for blowing rock, of which I have much to do, & to send a note of the cost of both parcels, which shall be immediately remitted you. both qualities have been found of very superior ~~quality~~ kind, and having distributed the canisters among the merchants & gentlemen of this quarter, I presume it will occasion calls on you from them. accept the assurance of my great esteem & respect.

E. I. Dupont Th. Jefferson



ENDURING

FROM 1802...A TRADITION OF CONSISTENTLY HIGH QUALITY



DuPont is one of the oldest continuously operating industrial enterprises in the world.

The company was established in 1802 near Wilmington, Delaware, by a French immigrant, Eleuthère Irénée du Pont de Nemours, to produce black powder. E. I. du Pont had been a student of Antoine Lavoisier, the father of modern chemistry, and he brought with him to America some new ideas about the manufacture of consistently reliable gun and blasting powder. His product ignited when it was supposed to, in a manner consistent with hoped-for results. This was greatly appreciated by the citizens of the fledgling republic, including Thomas Jefferson, who wrote thanking du Pont for the quality of his powder, which was being used to clear the land at Monticello. Many other heroes of early America owed their success, and lives, to the dependable quality of DuPont's first product.

In the two centuries since E. I. du Pont set up his "manufactory" in Delaware, the company has metamorphosed many times, evolving far from its original business while retaining the commitment to consistent high quality and "better things for better living" as DuPont approaches its third century.

1802

Company is founded in Wilmington, Delaware, USA, by Eleuthère Irénée du Pont de Nemours.

The company is capitalized at $36,000 with 18 shares at $2,000 each.

1804

First shipments under the DuPont label.

1805

First exports, to Spain.

1811

President Thomas Jefferson becomes a DuPont "spokesman."

DYNAMIC

TWO CENTURIES OF CHANGE, DISCOVERY, AND GROWTH

The success of any business over a long period of time depends in a major way on the willingness and ability of the enterprise to adapt to changing circumstances. Perhaps because of DuPont's foundation in science, with its emphasis on discovery, change is very much a part of the culture of DuPont. The company's facility for transforming or "reinventing" itself is an important reason why it is still a major force after almost 200 years.

The first transformation began at the start of the twentieth century when the company lost its competitive advantage in gunpowder due to burgeoning competition. Shareholders voted to sell the assets to the highest bidder, but three great-grandsons of the founder—Thomas Coleman du Pont, Alfred I. du Pont, and Pierre Samuel du Pont—offered to buy and operate the firm, issuing notes and stock in a new corporation. The offer was accepted and in 1902 the company was restructured to look for new business and create new products through research. DuPont's research organization dates to this time, with the foundation of the Eastern Laboratory for scientific research, in New Jersey. Eastern was one of the first industrial research laboratories in the United States. Construction of the Experimental Station, just outside Wilmington, Delaware, quickly followed the opening of Eastern. The "Ex Station," as it became known, originally had responsibility for process research but, by 1909, had expanded into new fields such as the investigation of synthetic fibers. This period marked the beginning of DuPont's transition from an explosives manufacturer to a diversified chemical company.

In the period 1911 to 1914 there were several restructurings in response to trade and political pressures. These included the spinoff of parts of DuPont businesses into two new independent corporations: Hercules Powder Company and Atlas Powder Company.

The biggest shock came in the severe economic recession of 1920–21. To achieve greater efficiency, the company responded with a massive reorganization into autonomous operating departments, monitored and coordinated by a central corporate office. This central office became the classic form of corporate management: board of directors, executive committee, chief executive officer, and finance committee. Following the reorganization, the company embarked on an expansion phase, with a number of acquisitions during the 1920s in the United States and licensing agreements and joint ventures in Europe and Japan. A subsidiary, DuPont Rayon de Mexico, was formed, followed by joint ventures in Argentina and Brazil.

By World War II, DuPont had developed a strong foundation in polymer science which led to several important and profitable businesses: fibers, films, plastic resins, and finishes. DuPont scientists provided many outstanding proprietary products, and people lined up to get them. This was especially true in the postwar period when much of the world's industrial infrastructure outside of the United States was in ruins. DuPont continued to expand. In the last half of the 1950s, the company established several subsidiaries in Europe and undertook a large construction program in 10 countries. In the next decade, more than 20 international subsidiaries and joint ventures were formed in Europe, Latin America, and the Asia/Pacific region.

In response to growing international competition in the 1970s and 1980s, the company put more emphasis on marketing, and it sought growth through diversification. During the 1980s, DuPont invested more than $10 billion in over 50 acquisitions and joint ventures in its diversification efforts. A major part of this investment is attributable to the purchase in 1981 of Conoco, a fully integrated oil, gas, and coal company with operations around the world.

A driving force behind the international expansion of DuPont in the last half of the 20th century has been the recognition that, to grow share in regional markets, the company needed to build facilities within those markets, to serve customers locally.

Over the decades, DuPont science and technology have provided the world with thousands of products, including many that have become household names. The old advertisements shown here illustrate "better things for better living" in earlier times.

In the 1930s a number of DuPont inventions brought a cascade of new products, including nylon stockings. Production of "nylons" was interrupted by World War II, and when stores began carrying the flattering legwear after the war, women lined up to get them. In some places, there were near-riots.

1902

Going, going, gone (almost)—company is saved by three cousins and reorganized; Eastern Laboratory formed.

1903

Experimental Station established; DuPont begins the transition to a diversified chemical company.

1904

Formal pension plan established; organized safety program started.

1909

First investigation of synthetic fibers launched.

1911

Safety committees established in plants to promote injury prevention.

1911–1914

Restructurings; Hercules and Atlas spun off.

COMPETITIVE

STRATEGY FOR THE 1990S AND BEYOND

As DuPont moves through the last decade of the twentieth century and toward its third century, it is emphasizing five areas of transformation: competing globally; sharpening the business focus; increasing productivity; committing to safety, health, and environmental excellence; and empowering people.

A major element in the strategy is to focus resources on businesses in which DuPont has core competencies, which have a competitive advantage or could be developed to have a competitive advantage. The most obvious example of this focus was the 1993 transaction in which DuPont acquired ICI's nylon business and ICI acquired DuPont's acrylics business. This further strengthened the company's position in the global nylon business while divesting a business that no longer fit its portfolio.

The giant Heidrun oil field in the Norwegian sector of the North Sea is being developed using a tension leg platform, technology developed by Conoco to bring within reach petroleum deposits beneath the seabed in very deep waters.

Another major factor in the transformation of the 1990s was the focus on reducing costs and improving productivity. This was necessary to give the company the flexibility for competitive pricing and to grow market share and earnings.

The globalization trend continued vigorously in the 1990s, with new plants opening in Spain, Singapore, Korea, Taiwan, and China, and a major technical service center opening in Japan. In 1994, a Conoco joint venture began producing oil from the Ardalin Field in the Russian Arctic—the first major oil field brought into production by a Russian/Western partnership since dissolution of the Soviet Union.

- Manufacturing and Processing
- Sales and Distribution
- Petroleum Exploration and/or Production
- Petroleum Refining and/or Marketing
- Minerals
- Research and Development

GLOBAL ACTIVITIES

ARGENTINA	CZECH REPUBLIC
AUSTRALIA	DENMARK
AUSTRIA	DUBAI
BELGIUM	FINLAND
BRAZIL	FRANCE
CANADA	GERMANY
CHINA	HONG KONG
COLOMBIA	HUNGARY

Advanced composite materials developed by DuPont will help rebuild highway, bridge, and tunnel systems, with lightweight, high-strength structures offering longer service life, less maintenance, and other features including a greater resistance to earthquakes, such as this prototype bridge designed for California.

DuPont corporate headquarters are located in Wilmington, Delaware (above).

Worldwide business headquarters are placed close to major customers and market centers—e.g., automotive headquarters are in Detroit, the electronics business is headquartered in Tokyo, and the worldwide petroleum operations are based in Houston, Texas. DuPont operates 200 manufacturing and processing facilities in more than 40 countries.

This DuPont Lycra® spandex facility in Singapore is part of a major expansion of manufacturing capacity in the fast-growing Asia/Pacific region.

INDIA
INDONESIA
IRELAND
ITALY
JAPAN
LUXEMBOURG
MALAYSIA
MEXICO
NETHERLANDS
NEW ZEALAND
NIGERIA
NORWAY
PHILLIPINES
POLAND
PORTUGAL
PUERTO RICO
REPUBLIC OF KOREA
RUSSIA
SINGAPORE
SOUTH AFRICA
SPAIN
SWEDEN
SWITZERLAND
TAIWAN
THAILAND
TRINIDAD & TOBAGO
TURKEY
UNITED KINGDOM
UNITED STATES
VENEZUELA
VIETNAM

Aerial view shows the new sulfonylurea herbicides plant at Loon-Plage, France. Business headquarters for DuPont Agricultural Products in Europe, the Middle East, and Africa are in Paris.

1919

Start of insurance plan for employees.

1920–21

More restructuring, expansion in Europe, Asia, Latin America.

1923

President's Prize established for accident-free record.

1925

New health program includes periodic medical examinations for all employees.

1927

Fundamental research program launched, laying the foundation for many products; start of the twentieth century "materials revolution."

1930s

More expansion; new products blossom.

DuPont Corian®

DuPont Mylar®

DuPont Cordura®

DuPont Teflon® and
DuPont SilverStone®

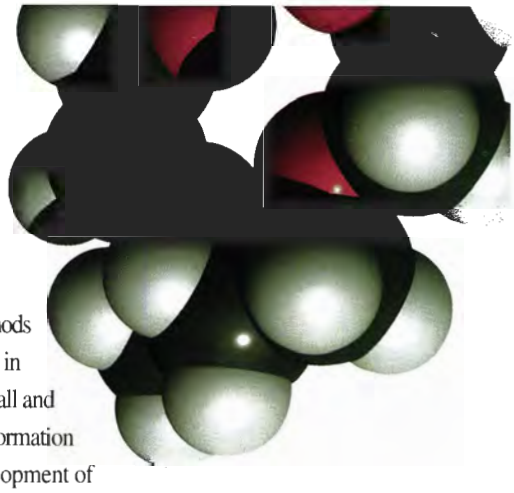
DuPont Stainmaster®

DuPont Kevlar®

DuPont produces many materials that are familiar household brand names.

INNOVATIVE

A CASCADE OF NEW PRODUCTS THROUGH SCIENCE AND TECHNOLOGY



Much of DuPont's success can be traced to new products derived from the company's expertise in science and technology.

DuPont is especially noted for its work in polymer chemistry. The company first began to process and sell polymer-based materials more than 100 years ago, when it commercialized cellulose nitrate in the form of smokeless gunpowder. This began a journey of scientific discovery that led to other chemical modifications of cellulose and into the emerging science of polymers. Along the way, over the next three decades, DuPont became an important supplier of a number of cellulose-based products including fibers (rayon), plastics (celluloid and cellulose acetate butyrate), finishes (nitrocellulose lacquers for automotive and other uses), and films (cellophane). A major milestone was passed in 1926 when a DuPont research scientist discovered how to make cellophane moisture-proof. This converted an attractive but limited product into a widely useful material that revolutionized the packaging industry. It also taught DuPont the importance of innovation in materials.

However, the next important breakthrough in materials science came as a result of fundamental rather than applied research. The head of research noted at the time: "We are including in the budget for 1927 an item of $20,000 to cover what may be called, for want of a better name, pure science or fundamental research work...the sort of work we refer to...has the object of establishing or discovering new scientific facts." In a short time the group that had been put together under this budget had developed an understanding of radical polymerization and established the basic principles for condensation polymerization and the structure of condensation polymers. This led to the invention and commercialization of nylon in 1938—the beginning of the modern materials revolution. (Prior to that it yielded neoprene synthetic rubber in 1933.) Many synthetic materials cascaded from DuPont research after that, forming the basis for many global businesses and products including household names such as Teflon® fluoropolymer resins and SilverStone® certified non-stick finishes, Stainmaster® flooring systems, Kevlar® aramid fiber, Nomex® aramid fiber and paper, Lycra® spandex fiber, Sontara® spunlaced fabric, Mylar® polyester film, Tyvek® spunbonded olefin, Cordura® nylon fiber, and Corian® solid surface material for sinks and countertops.

Recent inventions have yielded new methods of forming and treating synthetic materials in the adaptation of laser technology to cut small and intricate shapes in metal spinnerets for the formation of synthetic fiber. These have enabled development of synthetic fibers that mimic the best qualities of natural fiber while retaining the benefits of synthetics—products such as Coolmax® textile fabric that wicks moisture and Thermax® textile fabric that retains heat but also "breathes," and ultrafine textile materials such as MicroMattique® microdenier polyester fiber for designer fashions.

Although many better-known DuPont inventions relate to fibers, the company's roots in organic and inorganic chemistry and in materials science have led to a much broader scope of discovery and development. The results touch people's daily lives in many ways, all over the world. For example, the publication you are reading now was produced using a variety of DuPont products. Many of the food packaging improvements in safety, freshness, ease of use, and recyclability are the result of DuPont innovations. In crop protection products (a major DuPont business), development of the sulfonylurea family of herbicides offers farmers ease of application, highly specific weed control, and improved environmental protection.

The integration of DuPont's research competencies provides a unique strength and the potential for new product offerings. For example, a DuPont machine that speeds the process of "fingerprinting" bacteria with great precision integrates microbiology, biochemistry, instrument engineering, and process engineering. The rapid introduction of Suva® refrigerants as alternatives to chlorofluorocarbons (CFCs) for refrigeration and air conditioning was made possible through a combination of traditional strengths in fluorine chemistry and chemical process engineering with computer modeling, simulation, and visualization techniques.

In recent times, DuPont has built a major new research competency in biotechnology. This new strength is being integrated with strengths in organic chemistry, in pursuit of renewable resources, less expensive routes to many of DuPont's current products and, in general, processes and products that are part of the natural environmental cycle.

Pictured here is Dr. Wallace H. Carothers, the inventor of nylon, in his laboratory at DuPont's Experimental Station. Dr. Carothers' work in polymerization set in motion the modern materials revolution that continues to this day in the development of products that replicate nature yet add specific characteristics such as fire resistance, insulation, and light weight plus strength.

These products are all around us, at home or at work. Most of the surfaces a person touches in cars, trains, and planes are DuPont products as are, increasingly, materials in the engines and control systems.

1931

DuPont introduces Freon® refrigerants to replace flammable liquids; also announces neoprene, the first general purpose synthetic rubber.

1933

X-ray films.

1937

Lucite® acrylic resins.

1938

DuPont introduces nylon fiber, Teflon® fluorocarbons, and Butacite® resin sheeting for safety glass.

1940s

DuPont nylon, neoprene and other products contribute significantly to the war effort.

1955–1960

Helping to rebuild Europe, DuPont undertakes huge expansion with a construction program in 10 countries that lays the groundwork for the company's continuing growth in the European market.

RESOURCEFUL

DuPont Research and Development Enhance the Quality of Life

DuPont invests over $1 billion a year on research and development. The budget includes the kind of fundamental research that led to the discovery of nylon, while focusing considerable effort on process improvements. Much of this effort is linked in some way to environmental stewardship, either directly, in response to a specific environmental challenge such as the gigantic R&D undertaking that led to introduction of the Suva® line of CFC alternative refrigerants, or indirectly, as for example, through the drive for ever-higher yields in manufacturing processes (as yields go up, waste goes down). An area of great interest is more economically efficient and environmentally benign catalytic processes.

Although DuPont's Conoco energy unit is involved in selling to the ultimate end user—the consumer—in the form of branded gasoline, lubricants, and other more specialized petroleum products, much of the company's non-energy business is in providing materials from which other companies fabricate a finished product. Consequently, DuPont research is increasingly being aimed at developing materials and systems to help its customer companies achieve competitive advantage. In new product research, materials substitution remains an important interest. Just as DuPont polymers replaced or augmented natural fibers in many applications,

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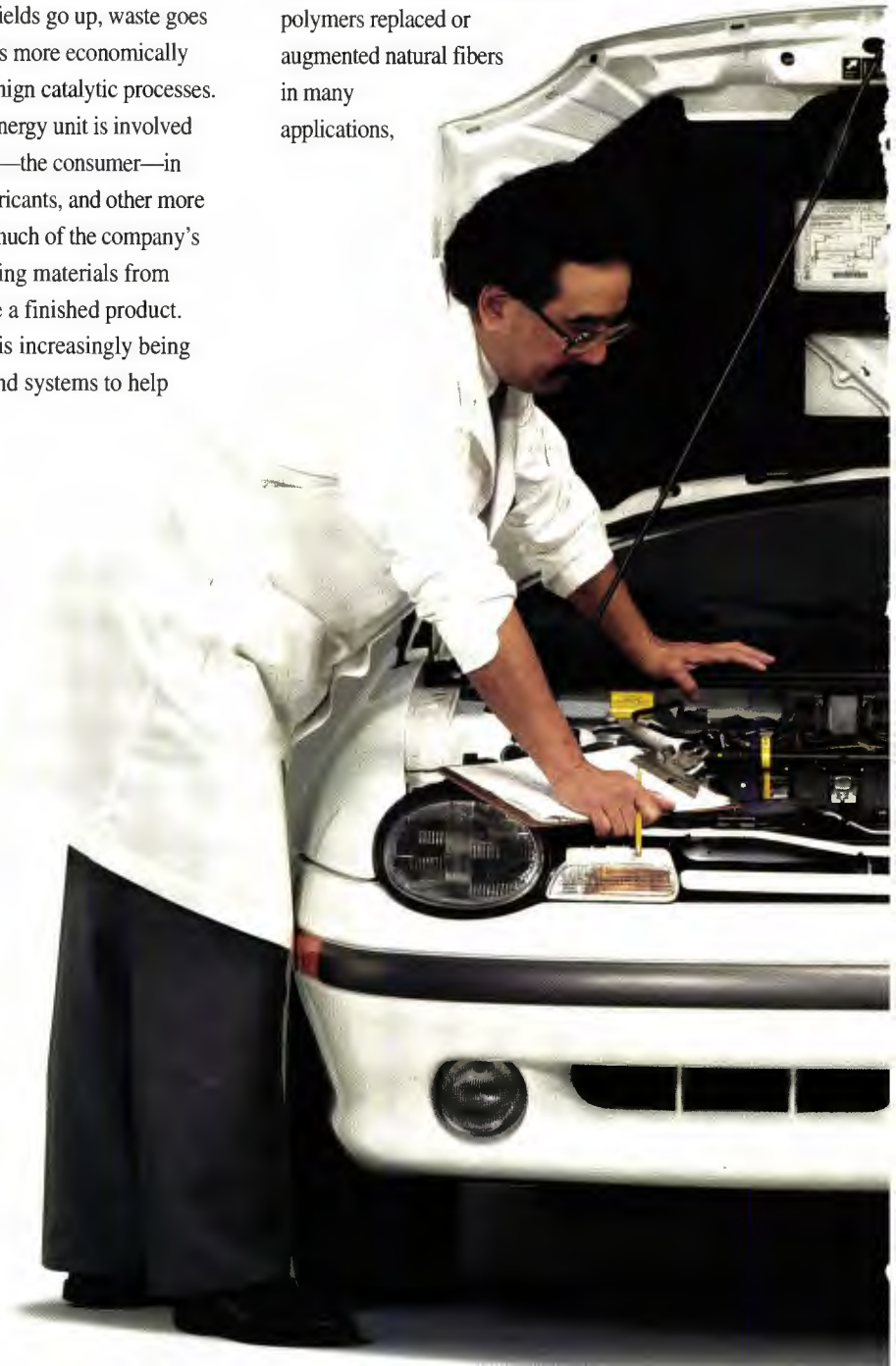


1960s

DuPont introduces Lycra® spandex fiber, electronic materials for microcircuits, Nomex® and Kevlar® aramid fibers for fire and police protection, among many other products.

1964

DuPont begins first entry into pharmaceuticals with Symmetrel,® an anti-viral agent.

1970s

Global competition hits home; DuPont emphasizes marketing as well as creating better things for better living.

1972

DuPont calls for industry-wide research initiative to investigate the impact of chlorofluorocarbons (CFCs) on the atmosphere.

1976

The company makes a public commitment to stop production of CFCs if ozone/health links are established.

RESPONSIBLE

A Commitment to Safety, Health, and Environmental Excellence

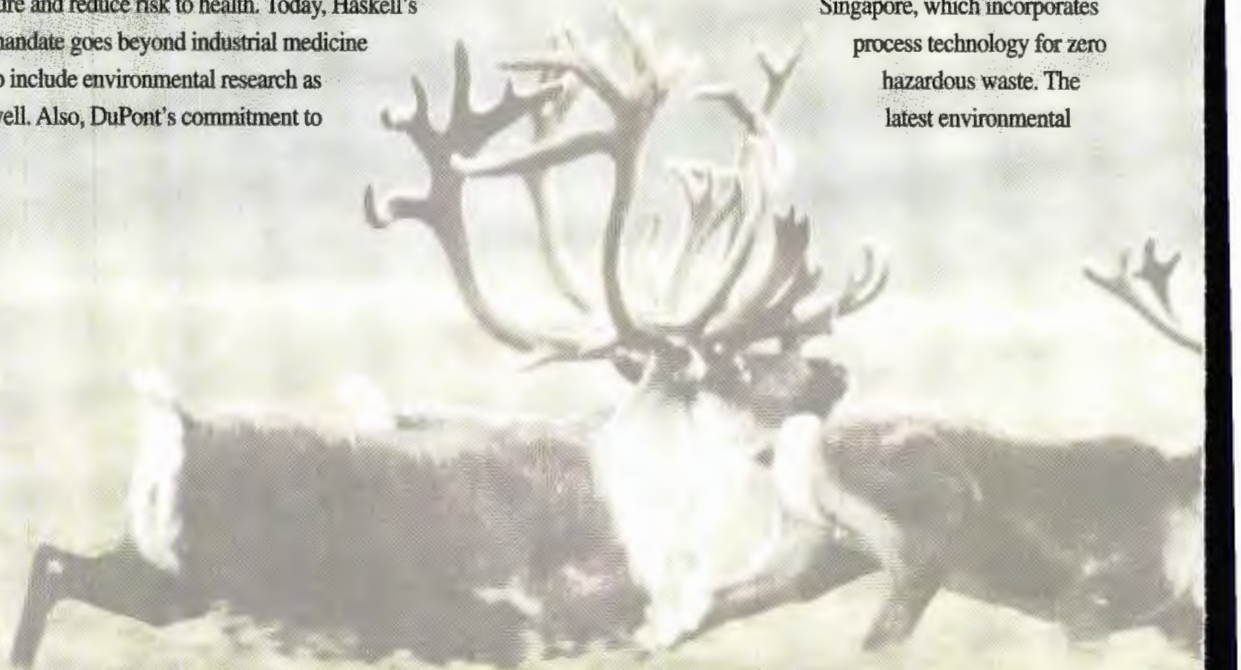
At DuPont, safety, health, and environmental (SHE) excellence is considered an integral part of business excellence. SHE goals are built into strategic and operational planning as vital elements in the overall success of the company, its individual businesses, and affiliates.

Safety has always been part of the DuPont culture since the earliest days when there was no margin of error for careless acts, and each individual was responsible not only for his or her own safety, but the safety of colleagues. This concept of individual and collective responsibility, coupled with the belief that all accidents are preventable, has been the guiding principle ever since. The goal is zero injuries. And there is zero tolerance for safety incidents of any kind. As a result, DuPont has established a leadership position in industrial safety, a superior record, and a global reputation for excellence in safety management.

Health has also been a major concern at DuPont since early times, leading to the establishment in 1935 of one of the world's first industrial medicine facilities, the Haskell Laboratory for Toxicology and Industrial Medicine, near Newark, Delaware. Over the years Haskell has collected toxicity information on thousands of substances, an invaluable body of data to help measure and reduce risk to health. Today, Haskell's mandate goes beyond industrial medicine to include environmental research as well. Also, DuPont's commitment to employee health goes far beyond the original concerns of industrial medicine, in promoting the general health of employees, through wellness programs and preventive medicine.

As part of its commitment to environmental stewardship, DuPont has set for itself goals that go beyond what the law requires, and employee performance is measured opposite those goals as part of the career planning process. Although goals are set, DuPont people are given the freedom to develop their own solutions. Experience shows that one central solution does not fit all local challenges, even when conditions seem similar. However, when a problem is overcome, the technology and other aspects of the solution then become part of the global Corporate Environmental Plan data base, which is a resource available to all DuPont sites.

The underlying philosophy is "an ounce of prevention is worth a pound of cure"—a point of view borne out by DuPont studies of its own operations that show that an end-of-pipe solution is twice as likely to cost more than prevention. Prevention is more readily achieved in new plant construction in which waste prevention is built into the engineering design, as in DuPont's new adipic acid nylon intermediate plant in Singapore, which incorporates process technology for zero hazardous waste. The latest environmental

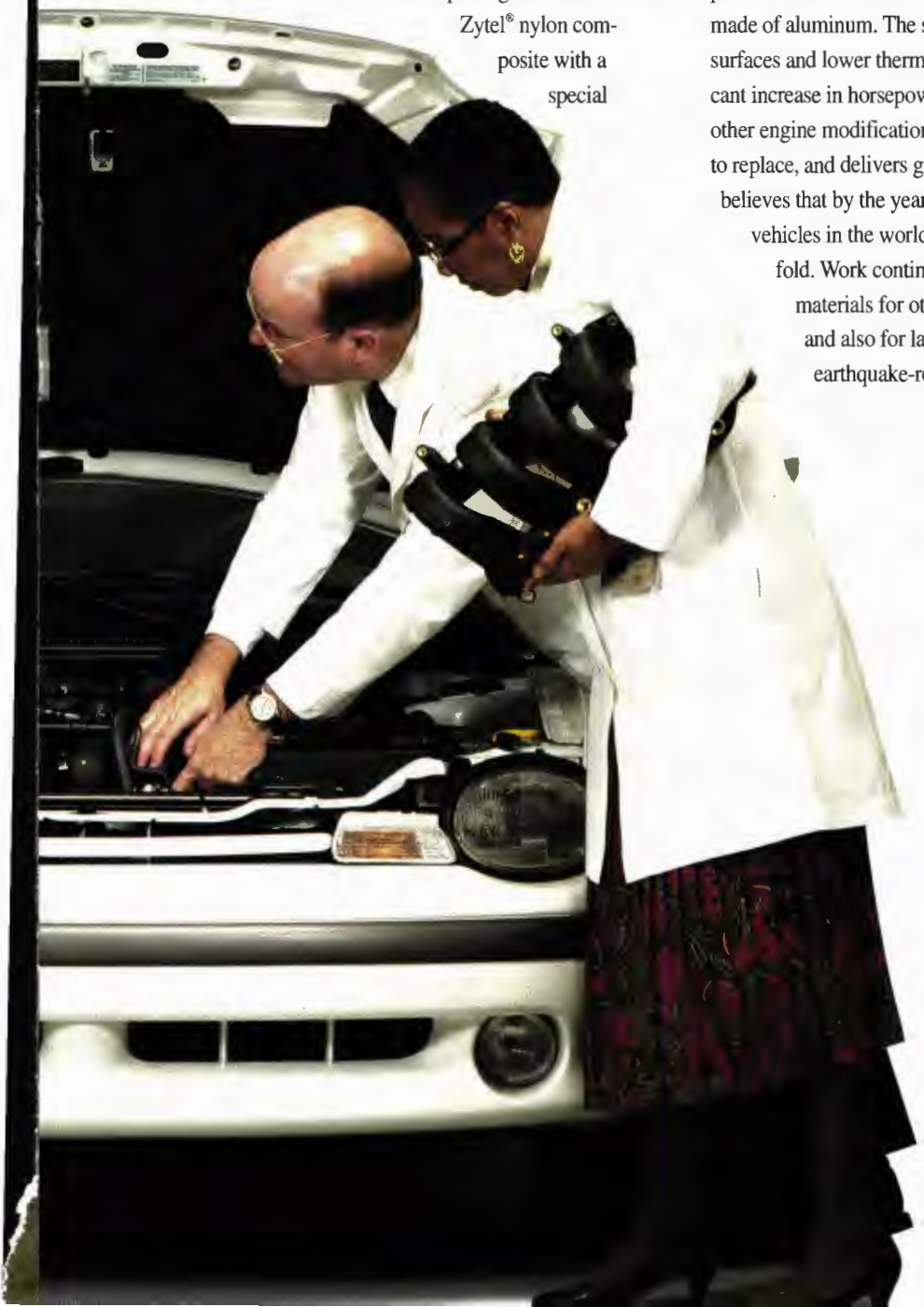


3.

DuPont fundamental or "discovery" research is continuing across a spectrum of disciplines.

1. *Work on the characteristics of plants suggests that certain weeds may be used for "mining" due to their ability to absorb specific metals. One potential use is for cleaning up urban sites that have been contaminated by lead.*
2. *The company is part of a superconductivity consortium in Japan working on high-temperature superconductivity.*
3. *DuPont is working on diamond vapor deposition technology which could lead to such developments as television sets only a couple of inches thick that can be hung on a wall, and other advances in electronic display, including avionics.*

now more advanced polymer products are beginning to replace or augment metal. For example, DuPont has developed a glass-reinforced Zytel® nylon composite with a special blend of tougheners and other additives that offers a 50–60 percent weight reduction over a comparable metal part—an automotive air intake manifold traditionally made of aluminum. The smooth inner contours and surfaces and lower thermal conductivity give a significant increase in horsepower and torque without any other engine modification. It is easier to install, easier to replace, and delivers greater performance. DuPont believes that by the year 2000 the majority of the new vehicles in the world will have this kind of manifold. Work continues on the development of materials for other automotive applications and also for larger scale applications such as earthquake-resistant bridges for California.



Today, DuPont advanced materials can be found in ever-increasing uses, from aerospace to high-performance athletic shoes and longer-lasting golfballs.

DuPont products for the automotive industry are found in wheels, safety air bags, panels, fascias, fenders, and finishes. Under the hood, DuPont materials improve exhaust manifolds and timing belt covers. Gasoline and other petroleum products, including propane gas, round out the DuPont/Conoco offering.

technology is included in planning for all new DuPont plants, worldwide.

DuPont people are breaking new ground in environmental technology in many ways, on a continuing basis. For example, DuPont researchers and engineers developed a methanolysis process that "unzips" waste polyester products all the way back to their original molecules so they can be recycled and reused over and over again—a popcorn bag can become a cassette tape, and then a seat belt, and then somebody's shirt, and then maybe a popcorn bag again. DuPont people are inventing and reinventing processes to use more environmentally benign raw materials, and finding ways to keep reducing waste—for environmental reasons and because it is good business practice. DuPont studies of 115 plant locations show that in case after case, when a team examines a whole production process in a voluntary effort to find ways to make environmental improvements, the end result is a more efficient system and an economic cost benefit.

The company believes there is a need for cooperation throughout industry to promote good environmental practices. DuPont follows the codes of the global chemical industry's Responsible Care program. Responsible Care includes guidelines and systems setting standards and measuring progress in safety, health, and environmental stewardship.

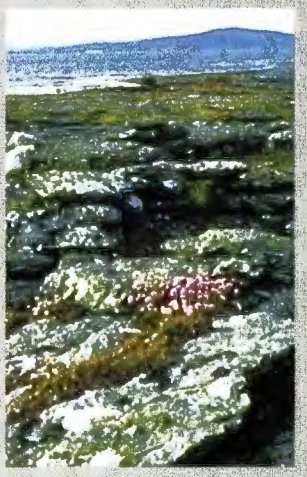
DuPont was a founding member of the Business Council for Sustainable Development, a group of international business leaders who believe environmental protection and economic development must be part of the same package, with common goals now and for future generations. DuPont further believes that sustainable development starts at the local level. Its philosophy is that local communities—human and natural—must be healthy in order to achieve true sustainability.

As part of its commitment to the concept of environmental and economic interdependence, DuPont has long believed in preserving green space and natural areas in those communities where it has industrial facilities. Since the mid-1980s DuPont has made donations of about 40,000 acres of land for conservation. The company was the driving force in creating the Wildlife Habitat Enhancement Council, a U.S. organization that assists corporations in developing and managing undeveloped and buffer properties for wildlife, and is one of its most active members. DuPont has established wildlife habitat programs on many thousands of acres at sites around the world.

The commitment to sustainable development was moved to a new level in 1994 with creation of DuPont's Land Legacy program, whereby surplus properties are systematically identified for preservation because of ecological or cultural value and donated outright or protected by easement or other means.

For a comprehensive review of DuPont's environmental progress, write to "DuPont Environmental Progress Report," 1007 Market Street, Nemours Building, Room 9519, Wilmington, DE 19801-9989.

Near Corpus Christi, Texas, DuPont operates the world's largest HFC-134A plant, producing environmentally superior alternatives to chlorofluorocarbon refrigerants (CFCs).



Conoco Norway, Inc. helped restore the wildlife habitat at the Tungenese lighthouse in Norway.

1981

DuPont becomes the "white knight" in a merger battle, acquires Conoco and Consolidation Coal in a friendly takeover, approximately doubling company assets and revenues.

1982

DuPont Pharmaceutical Company is formed.

1983

The headquarters of Conoco are moved from Stamford, Connecticut, to Wilmington, Delaware.

1986

The company reorganizes, forms new departments to align with markets served.

1987

DuPont plays a leading role in establishing the Montreal Protocol, an international agreement of nations to phase out CFC production; Charles J. Pedersen, chemist, is awarded the Nobel Prize for Chemistry.

"I help a growing number of customers throughout the Asia/Pacific region."

—I. K. Park,
Technical Service Representative,
Ti-Pure® at Ulsan, Korea

"Lycra® is such a dynamic material, it makes everything look, feel, and wear better."

—Sandra Guldemann,
Marketing Specialist,
Paris, France

"It's how you use technology that's important—like making better sneakers, for example."

—Rich Gould,
Chemist and Marketing Specialist,
Wilmington, Delaware

DuPont employees invent, develop, and market products used in daily life all over the world. For example, Ti-Pure® is a white pigment used in paper, paint, and other materials; Lycra® spandex is used in sports attire and everyday wear; while Kevlar® aramid fiber is used in safety wear and also in a wide range of industrial uses where strength and light weight are important, and in consumer products such as sneakers.

DuPont is a science- and technology-based company. It recognizes scientific and technological achievements by employees through special honors and awards, including the Lavoisier Lifetime Achievement Award, pictured here.

Charles Pedersen, shown below, was awarded the 1987 Nobel Prize for Chemistry, for discovery of the crown ether molecule. Mr. Pedersen spent a lifetime of research at DuPont.

COLLEGIAL

A RICH DIVERSITY OF HUMAN TALENT

With fewer layers of management, the people of DuPont have more responsibility and freedom to directly contribute to business performance than at any other time in the history of the company. DuPont seeks to provide the best possible working environment, conducive to creative thinking and action, in an atmosphere of collegiality.

DuPont's worldwide reputation as a good place to work is reflected in thousands of job applications received annually from all over the world. In Japan, students listed DuPont as the Number One foreign chemical company in terms of career choice.

The company has 3,000 employees with disabilities worldwide and benefits from their inspiration as well as professional and technical skills, in jobs ranging from engineering to business analysts to secretaries to international business managers. DuPont has earned international recognition for a series of race and gender awareness programs, for its pioneering work/life programs, and for its management of an ethnically and geographically diverse work force. In the United States, DuPont is consistently among *Working Mother* magazine's top 50 companies, has been listed in *Child* magazine's compilation of "30 Great Companies for Working Dads" and named by *The Wall Street Journal* as one of the "Best Employers for Women and Parents." The DuPont mentoring program has become a "best practices" benchmark for a number of other companies, and U.S. government agencies have studied DuPont to learn more about mentoring, skill building, basic training, senior leadership training for diversity management, and affirmative action.

After years of actively encouraging women and minorities in science and engineering studies, as well as in law, accounting, business administration, and communications, DuPont has succeeded in achieving a rich diversity of human talent—a winning global team to respond to the coming challenges of its third century.

1989

DuPont scientist George Levitt, who discovered the environment-friendly sulfonylurea herbicides, gets the American Chemical Society's Award for Creative Invention; David A. Dixon receives the Leo Hendrik Baekland Award for pioneering work in the application of supercomputers to solve chemical problems; DuPont directors approve a 3-for-1 stock split.

1990

The company and Merck agree to form a joint venture, DuPont-Merck Pharmaceutical Company.

1991

DuPont introduces its first substitute compounds to replace CFC-based refrigerants, under the Suva® trade name—also, Ultra-Vision® X-ray film and screen system that improves diagnostic capability, MicroMattique® microdenier polyester fibers for designer fashions, and other fine fibers; DuPont and Rheinbraun AG of Germany form a joint venture to operate Consolidation Coal.

DuPont was one of the original corporate sponsors of Space Center Houston, where children can experience simulated space travel, and see how math and science relate to space flight and other things they think are "neat" and interesting to do.

DuPont employees in Spain celebrate Earth Day in the community by cleaning a local beach.

Girl Scouts are among many organizations sponsored by DuPont. Pictured above, two future scientists work on a lab project that will help them win merit badges.

CARING

A STRONG SENSE OF SOCIAL RESPONSIBILITY...SINCE 1802

Since 1802, DuPont has been driven by a strong sense of social responsibility. In the early days, this was manifested in a few simple rules: the principals in the company did not ask employees to do work they would not do themselves; they would be active members of the community; and they would be good neighbors. The du Ponts lived with their families at the plant site on the banks of the Brandywine River, just outside Wilmington, Delaware. The du Pont men worked in the mills alongside employees, and they initiated all new procedures themselves. That meant they were more likely to suffer death or injury than anybody else if things went wrong. This was the beginning of the DuPont safety culture, but it was also part of a broader concern for people and a willing acceptance of social responsibility. For instance, DuPont was one of the first companies in the world to institute a medical program for employees. It built houses and schools for employees and provided recreation facilities. It was also one of the first companies to set up industrial medical research facilities.

Today, the concern for people and willing acceptance of social responsibility are manifested in many ways. One is the company's deep commitment to fair and equitable treatment for employees. Another is the commitment to maintain its reputation as a pacesetter in safety, health, and environmental matters. Still others are the company's efforts to involve employees in decision-making and to encourage people to develop to their fullest potential.

DuPont is still very much a part of the community... all over the world. In villages throughout Africa, the company is helping fight the guinea worm disease, which attacks people through their drinking water. Millions of lives are being saved through gifts of simple filters made of a special nylon monofilament fiber.

The company prides itself on being a global enterprise that is viewed as a local business and a member of the community wherever it does business. This concept is the driving force behind a corporate philanthropic program that recognizes the special needs of the communities in which DuPont and its subsidiaries and affiliated companies operate around the world. The company contributes some $30 million a year in philanthropic programs supporting education, improving the quality of life, and enhancing the economic vitality of local communities. This includes support to environmental programs, the arts, health and human service organizations, and community and civic activities.

A major part of the budget is dedicated to quality

DuPont plants "partner" with local schools, donating equipment and services, while DuPont volunteers help in classrooms.

Good neighbor projects like this one helping rid poor nations of the guinea worm disease, which is spread through drinking contaminated water. Millions of lives are being saved in Africa.

DuPont representatives work with farmers around the world to improve food supplies. At left, farmer in West Java, Indonesia, is pleased with his bumper rice crop.

education at all levels, but
universities that are
In addition to these
relationships with
of the global scientific commu
of research interest with DuPont scientists. Pre-
math and science programs also receive special attention.
For example, each year DuPont brings top science teachers from around the United States to Delaware for an intensive three-week workshop. At the workshop, DuPont scientists work closely with the teachers on polymer chemistry and biotechnology to develop programs for use in their classrooms and to pass on to other science teachers.

A resource kit developed by Conoco in the U.K. and DuPont in Switzerland to help teach schoolchildren about nature and the environment is in use in schools throughout Europe. The program, "Understanding Our Environment," has won wide recognition for its comprehensive, innovative approach using videos, slides, printed material, and hands-on experiments. The company underwrote and copyrighted the package, which has been adapted for use in the United States in cooperation with the National Science Teachers Association.

The benefits of DuPont financial support are greatly
by the voluntary work of DuPont people in a wide range of community and educational activities, including
to supply and rebuild storm-damaged communities, cleaning up beaches, teaching high school science and math, and taking science shows to elementary schools. In recent years, DuPont has funded a matching grant program that enables DuPont sites worldwide to put in place environmental and educational programs in their communities. DuPont plants are encouraged to adopt schools or work with school districts in providing mentors and speakers, and also by donating surplus equipment. Local residents are also invited to visit the plants to learn more about the products and how they are made.

DuPont's commitment to the minority business community is formalized in the company's TEMPO (To Encourage Minority Purchasing Opportunities) program, which is dedicated to an increasingly efficient and effective working partnership with minority suppliers to create more opportunities leading to more business for both sides of the partnership. Under the aegis of TEMPO, DuPont purchases between $300 million and $400 million of goods and services from minority suppliers annually to meet the needs of plant and office sites around the world.

1992

Agreement is announced for DuPont to acquire worldwide nylon business of ICI; Electronics worldwide headquarters is moved to Japan; an agreement is reached with the People's Republic of China to cooperate on research, manufacturing, and marketing in China; DuPont accelerates its deadline for phaseout of CFCs from year-end 1999 to year-end 1995.

1993–1994

DuPont continues restructuring program, completes purchase of ICI's nylon operations; forms alliance with Asahi of Japan to grow nylon business in Asia, enters into joint venture to manufacture electronic materials in China with plant startup in 1995, and announces numerous other alliances and projects in Asia; Remington Arms is sold; Conoco begins oil production in the Russian Arctic.

2002

DuPont celebrates its 200th birthday.

INSPIRED

NEW IDEAS AND CONSTANT VALUES SHAPE THE FUTURE

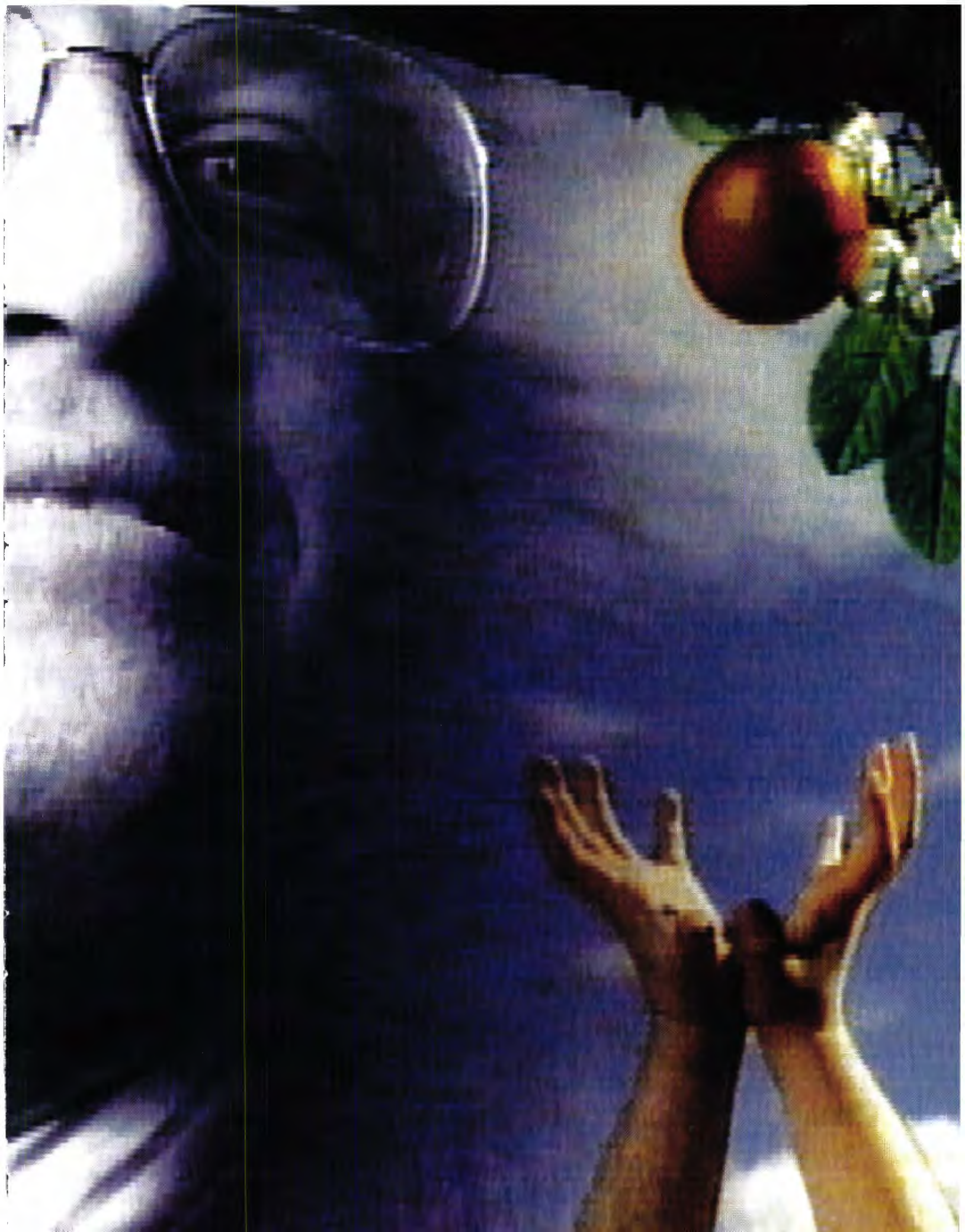
The DuPont that has emerged from the company's transformation of the 1990s has often been described by people inside and outside the company as "the new DuPont." This characterization is only partly apt, because while DuPont has changed, there are many things that remain the same. The core competency in science and technology, the commitment to safety, the concern for people, the feeling of community, the emphasis on personal and corporate integrity, the future focus, and indeed the willingness to change—these are not "new" characteristics; they are the constant forces in DuPont culture.

However, in many ways DuPont is new and different. Jobs are less structured. People on production lines plan and implement process improvements. People from DuPont manufacturing sites meet with their counterparts at customer plants to find out how to do a better job. DuPont people with new ideas for new products and businesses are encouraged to commercialize these businesses, and then run them.

What has always set DuPont apart is the quality of the people, people committed to making life easier and better for everybody, proud to be a part of an enterprise making "better things for better living." That was true in 1802. And it is just as true today, as DuPont moves toward its third century of innovation through science and technology.

A new idea in school lunches—pizza wrapped in DuPont Mylar® polyester film.

"There is nothing artificial about a moment of inspiration," says DuPont scientist Vinay Chowdry. Dr. Chowdry developed a machine that can track bacteria, to help keep foods fresher.



MARKETS SERVED

BETTER THINGS FOR BETTER LIVING

Better things for better living. This is a commitment that unites DuPont people around the world: discovering, improving, manufacturing, and marketing products that touch every aspect of people's lives.

DuPont is among the top 50 industrial companies worldwide with annual sales of about $40 billion. A research- and technology-based global chemical and energy company, DuPont operates 200 manufacturing and processing facilities in more than 40 countries worldwide.

DuPont is a diverse, global community of about 110,000 people, more than 30 percent of whom work outside the United States. The company serves worldwide markets in the aerospace, apparel, automotive, agriculture, construction, energy, health care, packaging, and printing and publishing industries, among others.

APPAREL

Today, DuPont is the world's leading supplier of man-made fibers for clothing, ranging from everyday wear to protective apparel. Many products containing nylon and Dacron® polyester fiber are well-known to consumers. Lycra® brand spandex fiber, only by DuPont, brings fit and comfort through freedom of movement to a variety of clothing styles from exercise and swimwear to evening and business clothing. DuPont Coolmax® and Thermax® textile fibers provide needed warmth and cooling during strenuous exercise, and DuPont's innovative new MicroMattique® microdenier polyester fibers give fashion apparel the look and feel of silk, but are far easier to care for.

CONSTRUCTION

DuPont products bring aesthetics, strength, and value to commercial and residential construction. Ti-Pure® titanium dioxide white pigment provides whiteness, opacity, and protection from ultraviolet rays in house paints and vinyl siding. Butacite® window interlayer protects against injury from broken glass while at the same time enhancing security and ultraviolet screening. Tyvek® spunbonded olefin housewrap protects wall systems by blocking air and water. Mylar® polyester solar films are used to reduce heat uptake through windows, and reflecting Mylar® film is used to enhance fluorescent lighting systems. Rynite® polyester resin is used in electronic ballasts, which reduce energy consumption and are used in lighting fixtures and sockets. Tefzel® ethylene and tetrafluoroethylene film is used in solar greenhouses. Its surface is self-cleaning and increases the amount of energy that permeates the film. Tedlar® polyvinyl fluoride film protects home siding from fading and weathering. Corian® solid surface material for sinks and countertops gives residential and commercial surfaces durability and elegance. Hypalon® synthetic rubber provides durable, weather-resistant protection for low-maintenance roofing systems. Electrical wiring in high-rise construction is protected by insulation made of DuPont Teflon® fluoropolymer resin.

Suva® refrigerants are used in air conditioners and refrigerators as alternatives to chlorofluorocarbons (CFCs), which have been linked to ozone depletion.

Fasloc® bolts and mine sealants are used in anchored bolt systems for mine roof supports.

ELECTRONICS

DuPont has been a materials supplier to the electronics industry for more than 60 years, providing high-reliability products, including the computer, telecommunications, consumer, automotive, industrial, instrument, military, and medical equipment segments. To meet the challenges of the printed wiring board industry for high density and high yields, DuPont offers phototools, photoimageable resists, and solder masks. Its family of flexible laminates can assume curved and irregular shapes allowing circuitry to fit in tight places. High-precision photomasks give fine-edge accuracy to high-density computer chips. Hybrid microcircuits made with DuPont thick films allow the miniaturization and high reliability of custom circuitry. Mylar® film is used in flexible circuits where cost is a key design goal. Kapton® polyimide film is used in flexible circuits in hard disk drives providing long flex endurance, as well as in loudspeaker voice coils to extend speaker life and improve sound reproduction. Teflon® fluoropolymer resin provides suspension insulation properties for data and communications cable. Tedlar® polyvinyl fluoride film is used as a release film on printed circuit boards. New products such as Zytel® HTN (high-temperature nylon) and Zenite® LCP (liquid crystal polymers) facilitate miniaturization of surface-mount technology components.

ENERGY

DuPont's energy subsidiary, Conoco, is one of the world's largest producers of oil and natural gas. Operating in more than 20 countries, Conoco and its affiliates are engaged in exploration, production, refining, distribution, and retail marketing of energy products.

Conoco's widely recognized expertise in technological innovation, safety performance, and environmental protection has made it a global leader in developing new energy reserves. The company is one of the major explorers and producers in the North Sea. Farther north, in the Norwegian Sea, it is developing its largest-ever offshore project, the giant Heidrun oil field. Conoco was the first Western company to become a partner in the development of new petroleum reserves in Russia and also has important production operations offshore Dubai and Indonesia.

Conoco operates four refineries in the United States, and the company's refinery in the United Kingdom is recognized as one of the most advanced and efficient refineries in the world. Motor fuels and lubricants sold under the Conoco name in the United States and under the Jet, SECA, and JK names in Europe and Asia/Pacific reach consumers through a network of more than 7,000 retail stations.

Conoco is also one of the world's leading suppliers of petroleum cokes used in the manufacture of aluminum and steel, and numerous specialty products used in oil and gas drilling, processing, and pipeline operations.

FOOD

As the world's population grows, agricultural productivity is a critical factor in human welfare and economic stability.

DuPont is one of the world's largest producers of crop protection products, most notably a unique class of herbicides called sulfonylureas. Products such as Accent,® Londax,® Classic,® Harmony,® and Ally,™ protect the world's major crops—corn, soybeans, rice, and wheat. These low-application-rate products are used in small amounts, sometimes a few grams per hectare.

DuPont products also help bring food from the farm to the table. Suva® refrigerants prevent food spoilage during shipping and in the grocery store. Surlyn® ionomer resin tightly seals meat, cheese, cookie, and snack food packages to protect the contents from air and moisture and extend food freshness. Mylar® films are used to package and protect foodstuffs. Microwave trays made of Crystar® polyester terephthalate and Selar® PT barrier resins keep food fresh and are approved by the U.S. Food & Drug Administration.

Tedlar® polyvinyl fluoride films and Teflon® fluoropolymer resins are used in food processing equipment where they provide ease of handling and high purity.

HEALTH CARE

A stream of innovative medical technologies will be needed to meet the increasing global demand for quality, cost-effective health care. As an industry leader, DuPont provides a growing line of advanced diagnostic and therapeutic products.

DuPont medical imaging products include UltraVision® films, which provide radiologists with 40 percent greater resolution than conventional X-ray film products. New Linx® digital imaging systems transmit images for diagnosis in remote locations throughout health care networks. A constantly evolving line of Sorvall® research centrifuges and Nen® detection products aid life science research.

DuPont Analyst®, aca®, and Dimension® clinical chemistry systems provide physicians in small clinics or large hospitals with economical, fast, accurate results from up to 95 diagnostic tests from blood serum and other body fluids.

DuPont-Merck, a fast-growing joint venture with Merck Pharmaceuticals, provides therapeutic products for the treatment of heart disease, cancer, arthritis, diabetes, and pain. The joint venture also supplies injectable imaging agents for the diagnosis of cardiovascular and other diseases.

HOME PRODUCTS

DuPont-certified Comforel® pillows, comforters, and mattress pads help provide a comfortable night's sleep. In kitchens around the world, Teflon®, SilverStone®, SilverStone® Xtra, SupraSelect,™ and Autograph® non-stick finishes make cooking and cleaning up easier on stovetop cookware and oven bakeware. Mylar® films provide high-quality bases for audio and video recording. Teflon® fabric protector saves apparel and home furnishings from stains and soil and is also water repellent.

Dacron® polyester fiberfill is the leading brand used in many applications, including upholstered furniture, mattresses, and sleeping bags.

DuPont flooring products include durable Antron Legacy™ nylon for commercial carpet, and an expanded family of Stainmaster® stain-resistant carpeting for homes around the world, including Stainmaster Xtra Life™ and Stainmaster Grand Luxura.™

LEISURE

DuPont products bring better things to work and play. Tough DuPont Surlyn® ionomer resins cover more than half a billion golf balls each year, and Ludox® colloidal silica is used for casting golf clubs. Delrin® acetal resin gives toughness to ski bindings, while Kevlar® aramid fiber adds rugged flexibility to skis. Cordura® nylon withstands rugged conditions in backpacks, luggage, and outdoor clothing. Zytel® ST (super tough) nylon provides strength and toughness needed for frames and wheel cores on in-line skates, ice hockey skates and sticks, and backpack frames, while Terathane® polytetramethylene ether glycol is used in the manufacture of in-line skate wheels. Hytrel® polyester elastomer foam provides improved resilience and durability in athletic footwear. Dacron® polyester and Kevlar® aramid fibers and Mylar® polyester film are used to make strong, low-stretch sails for recreational sailing or for the rigorous demands of yacht racing. Oxone® potassium monopersulfate is used in swimming pool shock treatment and also in denture cleaners.

PRINTING & PUBLISHING

In the rapidly changing field of printing and publishing, DuPont products supply traditional processes as well as direct digital imaging. Crosfield® electronic imaging products are used in a variety of electronic prepress operations. DuPont Waterproof® system allows color-offset proofing that uses tap-water processing for high productivity and reduced environmental impact. Graphic arts films and pressroom systems meet needs in conventional processes. In package printing, Cyrel® photopolymer plates print everything from snack food packages to gift wrap.

SAFETY

DuPont materials protect people and save lives. Fire-resistant clothing made with Nomex® aramid fiber protects fire fighters, and electrical and petroleum workers. Bullet-resistant vests made with Kevlar® aramid fiber save the lives of law enforcement officers. Kevlar® aramid fiber is also used for protective apparel that provides cut resistance for many industrial uses, such as gloves for auto workers and glass manufacturers. Garments of Tyvek® non-woven fabric provide protection for workers in agricultural, manufacturing, and service industries. Sontara® spunlaced fabric outfits doctors' offices and hospitals with sterile, nonabsorbent surgical clothing and accessories.

DuPont also offers services such as safety and training, seminars and consulting, environmental remediation, and wastewater treatment.

TRANSPORTATION

DuPont has played a role in the evolution of transportation since the early days of automaking and today sells more than 100 product lines used in land, sea, and air transportation.

The company is a major world supplier of automotive paints and finishes, including environmentally desirable water-borne finishes and powder coatings. Bexloy® automotive engineering resins make automotive body panels up to 50 percent lighter for improved durability and fuel economy.

Inside the car, passengers are protected with air bags of DuPont nylon, air bag doors based on Hytrel® polyester elastomer, and laminated glass windshields made with Butacite® polyvinyl butyral interlayer. Carpeting of nylon and upholstery of Dacron® polyester fibers make for durable, attractive interiors. Automobile air conditioners represent the biggest market segment for Suva® refrigerants.

Under the hood, the engine mounts of neoprene give a smooth ride to even high-powered sports cars. Transmission seal rings made of Vespel® custom-made fabricated parts help reduce manufacturing and warranty costs. Zytel® nylon resin molds into lightweight, heat-resistant intake manifolds, and fuel lines of Viton® fluoroelastomer and Teflon® fluoropolymer can withstand corrosive fuel blends. Circuits made from Pyralux® flexible composites and Kapton® polyimide film can survive the "under-hood" environment. Kevlar® pulp is used in powertrain applications including engine gaskets, transmission paper, and disk brakes. Krytox® lubricants are used in automotive bearing grease. Nafion® perfluorinated ion exchange membranes are used for fuel cells.

In the air, DuPont advanced composites bring light weight and superior performance to structures and panels. Wire and cable insulation systems using Teflon® and Tefzel® fluoropolymer resins and Kapton® and Oasis™ composite film protect complex electrical systems. Nomex® aramid fiber for carpeting and upholstery and interior panels protected with Tedlar® polyvinyl fluoride film offer ease of maintenance, light weight, and flame resistance to cabin interiors. Vespel® parts help gas turbine engines run longer at elevated temperatures.

Through Conoco, the company supplies a broad range of lubricants and fuels to all sectors of the transportation market, including the aerospace and marine industries.

VALUES

Uniting all of DuPont's businesses
are the values that shape the way we operate.

DuPont is a discovery company. Building on
a long record of innovation, DuPont is committed to using
science and technology to improve everyday life.

Excellence in science, technology, and engineering
has also helped make the company a leader in
environmental stewardship, with goals that in many cases
go well beyond those required by law, wherever
in the world DuPont does business.

One of DuPont's best-known values is our
commitment to safety—protecting employees and
neighboring communities. The company is widely
recognized as the world leader in industrial safety.

Integrity in all aspects of business and everyday life,
based on a strict code of ethics, is the foundation
of DuPont's reputation as a premier company from the
perspectives of customers, investors, employees, suppliers,
and the communities in which we do business.
DuPont is a good company to buy from, invest in,
work for, sell to, and have as a neighbor.

DUPONT