

**COMMERCIAL-SCALE DEMONSTRATION OF THE
LIQUID PHASE METHANOL (LPMEOH™) PROCESS**

ENVIRONMENTAL MONITORING REPORT NO. 7

For The Period

1 October - 31 December 1998

Prepared by

**Air Products and Chemicals, Inc.
Allentown, Pennsylvania**

and

**Eastman Chemical Company
Kingsport, Tennessee**

**for the
Air Products Liquid Phase Conversion Company, L.P.**

**Prepared for the United States Department of Energy
National Energy Technology Laboratory
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ACRONYMS AND DEFINITIONS

Acurex	-	Acurex Environmental Corporation (now ARCADIS, Geraghty & Miller)
Air Products	-	Air Products and Chemicals, Inc.
AFDU	-	Alternative Fuels Development Unit - The "LaPorte PDU"
Balanced Gas	-	A syngas with a composition of hydrogen (H ₂), carbon monoxide (CO), and carbon dioxide (CO ₂) in stoichiometric balance for the production of methanol
BOD	-	Biochemical Oxygen Demand
Carbon Monoxide Gas	-	A syngas containing primarily carbon monoxide (CO); also called CO Gas
Crude Grade Methanol	-	Underflow from rectifier column (29C-20), defined as 80 wt% minimum purity; requires further distillation in existing Eastman equipment prior to use
DME	-	dimethyl ether
DOE	-	United States Department of Energy
DOE-NETL	-	The DOE's National Energy Technology Laboratory (Project Team)
DOE-HQ	-	The DOE's Headquarters - Coal Fuels and Industrial Systems (Project Team)
DTP	-	Demonstration Test Plan - The four-year Operating Plan for Phase 3, Task 2 Operation
DVT	-	Design Verification Testing
Eastman	-	Eastman Chemical Company
EIV	-	Environmental Information Volume
EMP	-	Environmental Monitoring Plan
EMR	-	Environmental Monitoring Report
EPRI	-	Electric Power Research Institute
HAPs	-	Hazardous Air Pollutants
Hydrogen Gas	-	A syngas containing an excess of hydrogen (H ₂) over the stoichiometric balance for the production of methanol; also called H ₂ Gas
IGCC	-	Integrated Gasification Combined Cycle, a type of electric power generation plant
IGCC/OTM	-	An IGCC plant with a "Once-Thru Methanol" plant (the LPMEOH™ Process) added-on
KSCF	-	Thousand Standard Cubic Feet
KSCFH	-	Thousand Standard Cubic Feet per Hour
LaPorte PDU	-	The DOE-owned experimental unit (PDU) located adjacent to Air Products' industrial gas facility at LaPorte, Texas, where the LPMEOH™ process was successfully piloted
LDAR	-	Leak Detection and Repair
LPDME	-	Liquid Phase DME process, for the production of DME as a mixed coproduct with methanol
LPMEOH™	-	Liquid Phase Methanol (the technology to be demonstrated)
Main Plant Purge	-	Unreacted synthesis gas stream from LPMEOH™ process returned to Eastman's fuel gas header
mg/m ³	-	Milligrams per cubic meter
NEPA	-	National Environmental Policy Act
NPDES	-	National Pollutant Discharge Elimination System
OSHA	-	Occupational Safety and Health Administration
Partnership	-	Air Products Liquid Phase Conversion Company, L.P.
PDU	-	Process Development Unit
PFD	-	Process Flow Diagram(s)
ppbv	-	parts per billion (volume basis)
Project	-	Production of Methanol/DME Using the LPMEOH™ Process at an Integrated Coal Gasification Facility
psia	-	Pounds per Square Inch (Absolute)
psig	-	Pounds per Square Inch (gauge)
P&ID	-	Piping and Instrumentation Diagram(s)
RCRA	-	Resource and Conservation Recovery Act
Refined Grade Methanol	-	Distilled methanol, defined as 99.8wt% minimum purity; used directly in downstream Eastman processes
SCFH	-	Standard Cubic Feet per Hour
Sl/hr-kg	-	Standard Liter(s) per Hour per Kilogram of Catalyst

ACRONYMS AND DEFINITIONS (cont'd)

Syngas	-	Abbreviation for Synthesis Gas
Synthesis Gas	-	A gas containing primarily hydrogen (H ₂) and carbon monoxide (CO), or mixtures of H ₂ and CO; intended for "synthesis" in a reactor to form methanol and/or other hydrocarbons (synthesis gas may also contain CO ₂ , water, and other gases)
Tie-in(s)	-	the interconnection(s) between the LPMEOH™ Process Demonstration Facility and the Eastman Facility
TOC	-	Total Organic Carbon
TLV	-	Threshold Limit Value
TPD	-	Ton(s) per Day
WBS	-	Work Breakdown Structure
wt	-	Weight

1. Introduction

The Liquid Phase Methanol (LPMEOH™) Demonstration Project at Kingsport, Tennessee, is a \$213.7 million effort being conducted under a cooperative agreement between the U.S. Department of Energy (DOE) and Air Products Liquid Phase Conversion Company, L.P. (the Partnership). Air Products and Chemicals, Inc. (Air Products) and Eastman Chemical Company (Eastman) formed the Partnership to execute the Demonstration Project. A demonstration unit producing 80,000 gallons per day (260 tons-per-day (TPD)) of methanol from coal-derived synthesis gas (syngas) was designed, constructed, and began a four-year operational period in April of 1997 at a site located at the Eastman complex in Kingsport. The Partnership will own and operate the facility for the four-year demonstration period.

This project is sponsored under the DOE's Clean Coal Technology Program, and its primary objective is to "demonstrate the production of methanol using the LPMEOH™ Process in conjunction with an integrated coal gasification facility." The project will also demonstrate the suitability of the methanol produced for use as a chemical feedstock or as a low-sulfur dioxide, low-nitrogen oxides alternative fuel in stationary and transportation applications. The project may also demonstrate the production of dimethyl ether (DME) as a mixed coproduct with methanol, if laboratory- and pilot-scale research and market verification studies show promising results. If implemented, the DME would be produced during the last six months of the four-year demonstration period.

The LPMEOH™ process is the product of a cooperative development effort by Air Products and the DOE in a program that started in 1981. It was successfully piloted at a 10-TPD rate in the DOE-owned experimental unit at Air Products' LaPorte, Texas, site. This Demonstration Project is the culmination of that extensive cooperative development effort.

2. Project Description

The demonstration unit, which occupies an area of 0.6 acre, is integrated into the existing 4,000-acre Eastman complex located in Kingsport, Tennessee. The Eastman complex employs approximately 10,000 people. In 1983, Eastman constructed a coal gasification facility utilizing Texaco technology. The syngas generated by this gasification facility is used to produce carbon monoxide and methanol. Both of these products are used to produce methyl acetate and ultimately cellulose acetate and acetic acid. The availability of this highly reliable coal gasification facility was the major factor in selecting this location for the LPMEOH™ Process Demonstration. Three different feed gas streams (hydrogen gas or H₂ Gas, carbon monoxide gas or CO Gas, and Balanced Gas) are available from existing operations to the LPMEOH™ Demonstration Unit, thus providing the range of syngas ratios (hydrogen to carbon monoxide) needed to meet the technical objectives of the Demonstration Project.

For descriptive purposes and for design and construction scheduling, the project has been divided into four major process areas with their associated equipment:

- *Reaction Area* - Syngas preparation and methanol synthesis reaction equipment.
- *Purification Area* - Product separation and purification equipment.
- *Catalyst Preparation Area* - Catalyst and slurry preparation and disposal equipment.
- *Storage/Utility Area* - Methanol product, slurry, and oil storage equipment.

The physical appearance of this facility closely resembles the adjacent Eastman process plants, including process equipment in steel structures.

- *Reaction Area*

The reaction area includes feed gas compressors, catalyst guard beds, the reactor, a steam drum, separators, heat exchangers, and pumps. The equipment is supported by a matrix of structural steel. The most salient feature is the reactor, since with supports, it is approximately 84-feet tall.

- *Purification Area*

The purification area features two distillation columns with supports; one is approximately 82-feet tall, and the other 97-feet tall. These vessels resemble the columns of the surrounding process areas. In addition to the columns, this area includes the associated reboilers, condensers, air coolers, separators, and pumps.

- *Catalyst Preparation Area*

The catalyst preparation area consists of a building with a roof and partial walls, in which the catalyst preparation vessels, slurry handling equipment, and spent slurry disposal equipment are housed. In addition, a hot oil utility system is included in the area.

- *Storage/Utility Area*

The storage/utility area includes two diked lot-tanks for methanol, two tanks for oil storage, a slurry holdup tank, a trailer loading/unloading area, and an underground oil/water separator. A vent stack for safety relief devices is located in this area.

3. Process Description

The LPMEOH™ Demonstration Unit is integrated with Eastman's coal gasification facility. A simplified process flow diagram is included in Appendix A. Syngas is introduced into the slurry reactor, which contains a slurry of liquid mineral oil with suspended solid particles of catalyst. The syngas dissolves through the mineral oil, contacts the catalyst, and reacts to form methanol. The heat of reaction is absorbed by the slurry and is removed from the slurry by steam coils. The methanol vapor leaves the reactor, is condensed to a liquid, sent to the distillation columns for removal of higher alcohols, water, and other impurities, and is then stored in the day tanks for sampling before being sent to Eastman's methanol storage. Most of the unreacted syngas is recycled back to the reactor with the syngas recycle

compressor, improving cycle efficiency. The methanol will be used for downstream feedstocks and in off-site fuel testing to determine its suitability as a transportation fuel and as a fuel for stationary applications in the power industry.

Demonstration Test Plan

Following the start-up of the LPMEOH™ Demonstration Unit, a four-year test plan is being performed by Air Products and Eastman. The goals of the Test Plan are structured to meet the commercialization objectives for the LPMEOH™ Process. Excerpts from Commercialization Objectives from the program Statement of Work are included here to provide the global perspective of the Demonstration Plan:

"Primary Objective

The primary objective of the Project is to demonstrate the commercial scale production of methanol using the LPMEOH™ Process...

The LPMEOH™ Process technology is expected to be commercialized as part of an IGCC electric power generation system. Therefore, the Project incorporates the commercially important aspects of the operation of the LPMEOH™ Process which would enhance IGCC power generation. These important aspects of LPMEOH™ Process integrations are:

- The coproduction of electric power and of high value liquid transportation fuels and/or chemical feedstocks from coal. This coproduction requires that the partial conversion of synthesis gas to storable liquid products be demonstrated.
- Using an energy load following operating concept which allows conversion of off-peak energy, at attendant low value, into peak energy commanding a higher value. The load-following concept makes use of gasifier capacity that is under utilized during low-demand periods by using the LPMEOH™ Process to convert the excess synthesis gas to a storable liquid fuel for use in electric power generation during the peak energy periods. This operating concept requires that on/off and synthesis gas load following capabilities be demonstrated...

During operation, the instrumentation system will allow for the collection of *engineering data, analysis and reporting which will be done by on-site technical personnel*. Typical reporting will include on-stream factors, material and energy balances, reactor and equipment performance, comparison with laboratory and LaPorte Alternative Fuels Development Unit (AFDU) results, conversion efficiencies and catalyst activity...

Secondary Objective

A secondary objective of the Project is to demonstrate the production of DME (Dimethyl ether) as a mixed coproduct with methanol...

Subject to Design Verification Testing (DVT), the Partnership proposes to enhance the Project by including the demonstration of the slurry reactor's capability to produce DME as a mixed co-product with methanol...

DVT is required to address issues such as catalyst activity and stability and to provide data for engineering design and demonstration decision making...

At the conclusion of the DVT Steps, a joint Partnership/DOE decision will be made regarding continuation of the methanol/DME demonstration. Timing of the final decision must ensure that the necessary design, procurement, construction and commissioning can be completed to allow for (Phase 3, Task 2.2) operation at the end of the primary LPMEOH™ process demonstration period."

The full Demonstration Test Plan (issued September 1996) provides details in the strategy and conditions to be tested during the four-year operating period.

4. Environmental Monitoring Plan (EMP) Description

Air Products Liquid Phase Conversion Company, L.P., has constructed and is operating the 260 ton-per-day Liquid Phase Methanol (LPMEOH™) Demonstration Unit at the Eastman Chemical facility in Kingsport, Tennessee. As specified in the Cooperative Agreement, the Partnership developed an Environmental Monitoring Plan (EMP) (issued August 1996) which describes in detail the environmental monitoring activities to be performed during the operation of the LPMEOH™ Demonstration Unit. The purpose of the EMP is to: 1) document the extent of compliance monitoring activities, i.e., those activities required to meet permit requirements, 2) confirm the specific environmental impacts predicted in the National Environmental Policy Act documentation, and 3) establish an information base for the assessment of the environmental performance of the technology for future commercialization.

The EMP describes three categories of environmental monitoring which are performed as a result of the operation of the LPMEOH™ Demonstration Unit. Details of streams internal to the demonstration unit are available in the Technical Progress Reports for the Project.

4.1 Eastman Reporting of Publicly Available Technical Data

As defined in the Statement of Work for the Demonstration Project, Eastman will provide data on three areas of operation of the Chemicals-from-Coal complex (refer to Table 4.1 for a breakdown of the streams to be monitored):

- 1) Gasifier material balance data
- 2) 10C-30 Guard Bed operating data
- 3) Wastewater and alcohols to wastewater treatment system

This technical information provides information from Eastman's existing facilities to provide an overall assessment of the LPMEOH™ technology. A Special Topical Report will provide this information. Updates, if any, are included in Quarterly EMRs if a significant change occurs.

4.2 Compliance Monitoring

Four areas of compliance monitoring have been identified to satisfy the permit requirements for the demonstration unit (Table 4.2):

- 1) Combined Vapor Flow from Demonstration Unit to Boiler
- 2) Fugitive Emissions
- 3) Particulate Emissions
- 4) Wastewater Treatment System Outlet Stream

Each of these sources is monitored at a frequency mandated by the relevant permit or industrial hygiene practice. The EMRs will include the results of any compliance monitoring generated during the reporting period.

4.3 Supplemental Monitoring

Three areas of supplemental monitoring have been identified in the EMP (Table 4.3):

Summary of Major Material Balance Streams for Demonstration Unit

The major feed streams (CO Gas, H₂ Gas, Balanced Gas) and product flows (Refined Grade Methanol, Crude Grade Methanol, Main Plant Purge) are provided as a summary table of the cumulative stream flows for the reporting period.

Solid/Liquid Discharges

Four other streams can be generated from the demonstration unit:

- 1) Compressor and Pump Lubricants
- 2) Oil Recovered in Oil/Water Separator
- 3) Spent Catalyst
- 4) 29C-40 Guard Bed Adsorbent

Any quantities generated during the reporting period are included in the EMR.

Noise

The EMP identified that a noise survey around the 29K-01 Recycle Compressor was planned during the initial start-up of the demonstration unit.

TABLE 4.1

LPMEOH™ DEMONSTRATION UNIT

**PUBLICLY AVAILABLE TECHNICAL DATA FROM EASTMAN
CHEMICALS-FROM-COAL COMPLEX**

Environmental Media

General Parameters

Coal	Pressure, Temperature, Coal Analysis
Oxygen to Gasifier	Pressure, Temperature, %O ₂
Water to Gasifier	Pressure, Temperature
Waste Water from Gasifier	Pressure, Temperature, Total Organic Carbon
Clean Synthesis Gas from Gasifier	Pressure, Temperature, Flow
Sulfur Recovered from Gasifier	Pressure, Temperature, Flow, %S
Carbon Dioxide from Gasifier	Pressure, Temperature, Flow, %CO ₂
Slag from Gasifier	Pressure, Temperature, Flow
Balanced Gas from 10C-30 Guard Bed	Pressure, Temperature, Flow, Composition
Wastewater and Alcohols to Wastewater Treatment System	Flow, Composition, BOD

TABLE 4.2

LPMEOH™ DEMONSTRATION UNIT

COMPLIANCE MONITORING

Environmental Media

General Parameters

Combined Vapor Flow from Demonstration
Unit to Boiler

Composition

Fugitive Emissions

Leak Detection and Repair (LDAR)
Report, Volatile Organic Carbon (VOC),
Background Ambient CO Concentration

Particulate Emissions

Threshold Limit Value (TLV)

Wastewater Treatment System Outlet
Stream

Flow, Total Organic Carbon, pH

TABLE 4.3**LPMEOH™ DEMONSTRATION UNIT
SUPPLEMENTAL MONITORING**

<u>Environmental Media</u>	<u>General Parameters</u>
CO Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
H ₂ Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Balanced Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Main Vapor Purge from LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Refined Grade Methanol	Cumulative Flow for Quarter
Crude Grade Methanol	Cumulative Flow for Quarter
Compressor and Pump Lubricants	Weight or Volume
Oil Recovered in Oil/Water Separator	Weight or Volume
Spent Catalyst	Weight, Weight% Solids
29C-40 Guard Bed Adsorbent	Weight or Volume
Noise Survey for 29K-01 Recycle Compressor	dBa

5. Project Summary

Synthesis gas was first introduced to the LPMEOH™ Demonstration Unit on 02 April 1997. The nameplate capacity of 80,000 gallons of methanol per day (260 tons-per-day) was achieved on 06 April 1997. During the reporting period, availability for the LPMEOH™ Demonstration Unit was 100%, and the plant completed the longest continuous campaign to date (94 days) on 27 October 1998. Table 5.1 summarizes the onstream time and outages of the LPMEOH™ Demonstration Unit during the reporting period.

6. Updates on Eastman “Chemicals-from Coal” Facility Publicly Available Technical Data

6.1 Gasifier Facility

As defined in Section 7.1 of the Environmental Monitoring Plan, publicly available technical data from the Eastman “Chemicals-from-Coal” facility, which includes data on the streams associated with the Gasifier facility, will be issued in a Special Topical Report. If a significant change in gasifier facility operation (e.g., feedstock change, equipment modifications or additions, etc.) occurs, then an update will be provided in a future EMR.

6.2 10C-30 Catalyst Guard Bed

As defined in Section 7.1 of the Environmental Monitoring Plan, publicly available technical data on the trace impurities entering and leaving the Catalyst Guard Bed will be issued in a Special Topical Report.

During the reporting period, there was no change of adsorbent or process change related to the operation of the 10C-30 Catalyst Guard Bed. If a significant change occurs, then an update will be provided in a future EMR.

6.3 Wastewater and Alcohols to Wastewater Treatment System

The report on publicly available technical data from the Eastman “Chemicals-from-Coal” facility, which includes data on the streams associated with the wastewater and alcohols to the Wastewater Treatment System, will be issued in a Special Topical Report. This will consist of a comparison of the flow, composition, and BOD load of this stream before and after the addition of the LPMEOH™ Demonstration Unit.

Table 5.1

Summary of LPMEOH™ Demonstration Plant Onstream Time and Outages - October/December 1998

Operation Start	Operation End	Operating Hours	Shutdown Hours	Reason for Shutdown
10/1/98 00:01	10/27/98 14:30	637.5	15.4	Syngas Outage
10/28/98 05:55	11/1/98 14:10	104.3	1.0	Syngas Outage
11/1/98 15:10	11/3/98 13:15	46.1	163.8	Power / Syngas Outage
11/10/98 09:05	11/24/98 08:40	335.6	9.0	Syngas Outage
11/24/98 17:40	11/24/98 23:05	5.4	1.6	Syngas Outage
11/25/98 00:40	12/16/98 11:35	514.9	190.7	Syngas Outage
12/24/98 10:20	12/31/98 23:59	181.6		End of Reporting Period
Total Operating Hours			1825.4	
Syngas Available Hours			1825.4	
Plant Availability, %			100.00	

7. Compliance Monitoring

7.1 Combined Vapor Flow from Demonstration Unit to Boiler

A sample of the header gas from the LPMEOH™ Demonstration Unit must be analyzed as part of the Boiler and Industrial Furnace regulations within RCRA. Sampling is currently required every three years. During the development of the EMP, it was anticipated that the new tie-in from the LPMEOH™ Demonstration Unit to the Eastman fuel header would require testing as a new source. After the EMP was published, it was determined that the new tie-in was not considered a significant change and did not require testing. Therefore, with the current sampling schedule, the next sample will be taken in February of 2000.

No activity occurred during the reporting period.

7.2 Fugitive Emissions

7.2.1 Leak Detection and Repair (LDAR)

No activity occurred during the reporting period. The next report on Leak Detection and Repair at the LPMEOH™ Demonstration Unit is scheduled for the first quarter of calendar year 1999.

7.2.2 Ambient Carbon Monoxide Background Concentration

This one-time study was completed in June of 1998, and documents the concentration of CO that is encountered by a LPMEOH™ operations person during the course of a normal day of plant operations. The report on this study is included in Environmental Monitoring Report No. 5. Both the time-weighted average and the peak values for CO were below the established limits by the Tennessee Operational Health and Safety Administration.

7.3 Particulate Emissions

This one-time study was completed in July of 1997, and documents the exposure level to particulate emissions that is encountered by a LPMEOH™ operations person during the catalyst charging process. The report on this study is included in Environmental Monitoring Report No. 1. Some engineering modifications to the catalyst loading system are planned to reduce the dust concentration and potential personnel exposure.

7.4 Wastewater Treatment System Outlet Stream

The reports on the outfall from the Wastewater Treatment System (Discharge Number 002) for the reporting period is attached in Appendix B. There were no permit excursions.

A process stream within the existing Eastman facility which is impacted by the operation of the LPMEOH™ Demonstration Unit contains the byproduct alcohols and water which are generated in parallel with the production of methanol. This stream is sent to the Eastman

Wastewater Treatment System. As noted in Section 6.3, a comparison of the flow, composition, and BOD load of this stream before and after the addition of the LPMEOH™ Demonstration Unit will be included in a Special Topical Report on publicly available technical data from the Eastman "Chemicals-from-Coal" facility.

8. Supplemental Monitoring

8.1 Total Synthesis Gas Use and Methanol Production

Table 8.1 contains the summary of the major process flows to and from the LPMEOH™ Demonstration Unit for the reporting period. Approximately 4,960,000 gallons (16,370 tons) of methanol (Refined and Crude Grades) were produced during the reporting period.

8.2 Oil/Water Separator

A total of 12,000 pounds of oil was removed from the Oil/Water Separator during the reporting period. In addition, a total of 80,684 pounds of oil was recovered from other equipment within the existing Eastman complex. This material has been incinerated for energy recovery.

8.3 Compressor and Pump Lubricants

No material was generated during the reporting period.

8.4 Spent Catalyst Slurry

No spent catalyst slurry was generated during the reporting period.

8.5 29C-40 Catalyst Guard Bed Spent Adsorbent

No material was generated during the reporting period.

8.6 Noise

The results of noise dosimetry measurements of the entire LPMEOH™ Demonstration Unit were reported in Environmental Monitoring Report No. 1. The results of an area noise survey at each platform of the LPMEOH™ Demonstration Unit and around the 29K-01 Recycle Compressor were reported in Environmental Monitoring Report No. 2. No additional surveys were performed during the reporting period.

Table 8-1

**Synthesis Gas Use and Methanol Production - October/December 1998
LPMEOH™ Demonstration Unit**

	October 1998	November 1998	December 1998	Total
Consumption, KSCF				
Balanced Gas	540,521.9	363,912.1	348,803.0	1,253,237.0
CO Gas	80.4	8,072.8	496.2	8,649.4
H ₂ Gas	0.0	0.0	0.0	0.0
Production, Tons				
Crude Methanol	2,534.7	1,699.8	1,620.8	5,855.3
Refined Methanol	4,400.8	3,156.6	2,963.9	10,521.3
Total Purge Gas, KSCF	65,286.7	49,921.4	56,405.4	171,613.5

9. Compliance

9.1 Compliance with Permit Limits

There were no excursions outside permit limits associated with the operation of the LPMEOH™ Demonstration Unit.

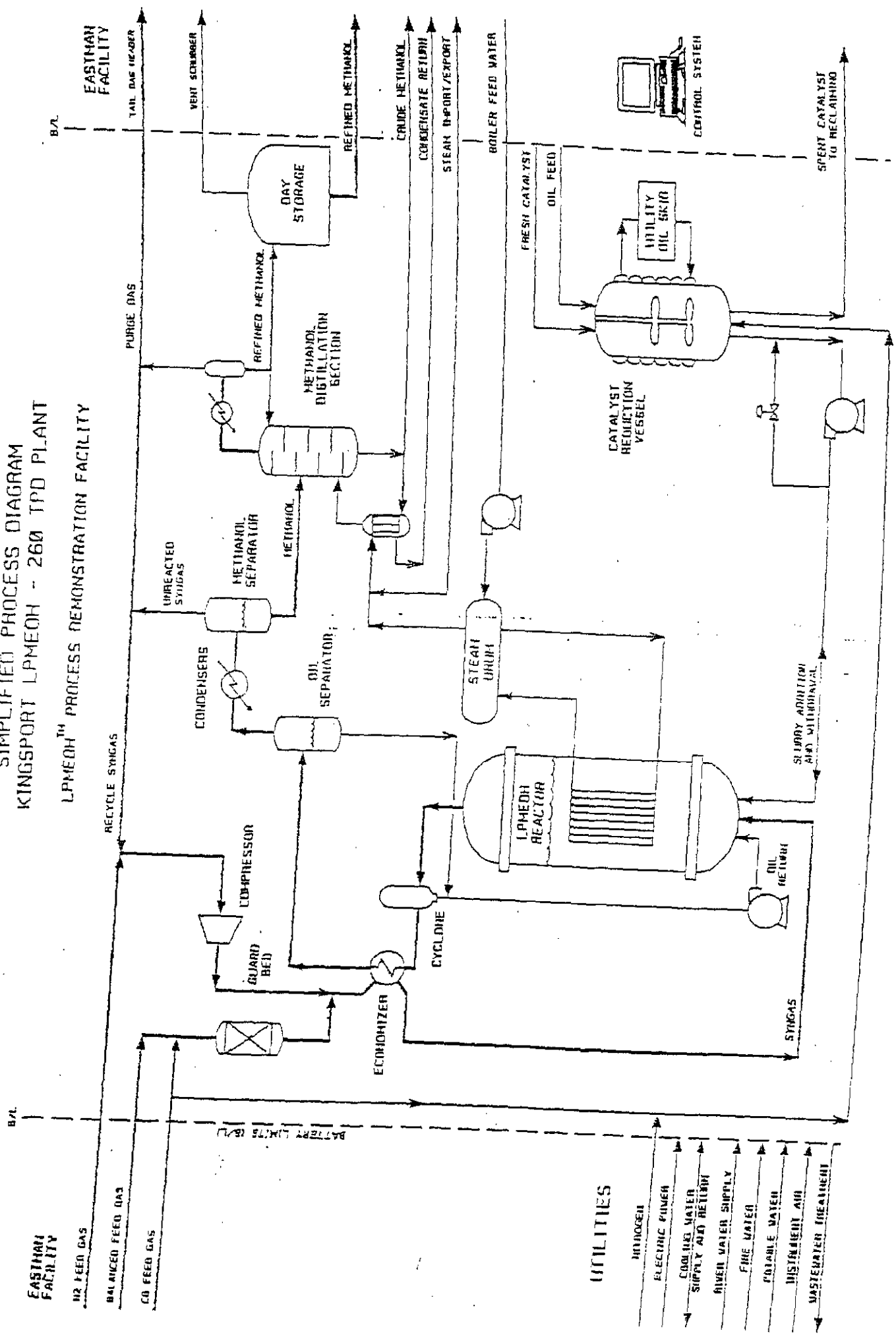
10. Problems and Recommendations

There have been no significant problems arising in the environmental area.

APPENDICES

APPENDIX A - SIMPLIFIED PROCESS FLOW DIAGRAM

SIMPLIFIED PROCESS DIAGRAM
KINGSPORT LPMEOH - 260 TPD PLANT
LPMEOH™ PROCESS DEMONSTRATION FACILITY



**APPENDIX B - NPDES REPORTS FOR WASTEWATER TREATMENT SYSTEM
OUTLET STREAM**

PERMITTEE NAME/ADDRESS:
 TN EASTMAN DIVISION
 DIVISION OF EASTMAN CHEMICAL CO.
 P.O. BOX 1993
 KINGSPOST, TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 MAJOR DISCHARGE MONITORING REPORT (DMR)
 TN0002640
 PERMIT NUMBER

FORM APPROVED
 OMB No. 2040-0004

INDUSTRIAL PROCESS WASTEWATER
 EFFLUENT

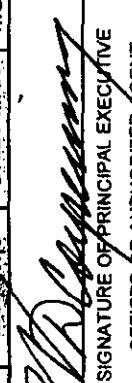
MONITORING PERIOD
 FROM 98-10-01 TO 98-10-31

Location: SULLIVAN COUNTY TN 37662-5393

DISCHARGE NUMBER

** NO DISCHARGE **

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	(3 Card Only) (46-53)			Quantity or Loading (54-61)			(4 Card Only) (38-45)			Quantity or Concentration (54-61)			NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)
	AVERAGE	MINIMUM	MAXIMUM	UNIT	MINIMUM	AVERAGE	MAXIMUM	UNIT	MINIMUM	AVERAGE	MAXIMUM	UNIT			
PH	MEASUREMENT	*****	*****		6.8	*****		*****	7.8	*****	(12)	0	CONTINUOUS	N/A	
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****		6.0	*****		*****	9.0	*****	SU	0	CONTINUOUS	RECORDER	
SOLIDS, TOTAL SUSPENDED	MEASUREMENT	3.729	8.673	(26)	*****	*****		*****	*****	*****		0	31/31	Composite	
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	1111	DAILY MAX	LBS/DAY	*****	*****		*****	*****	*****	****	0	DAILY	COMPOSITE	
NITROGEN, AMMONIA TOTAL (AS N)	MEASUREMENT	< 50	249	(26)	*****	*****		*****	1	*****	(19)	0	31/31	Composite	
00610 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6000	DAILY MAX	LBS/DAY	*****	*****		*****	61	*****	MG/L	0	DAILY	COMPOSITE	
CYANIDE, TOTAL (AS CN)	MEASUREMENT	BDL	BDL	(26)	*****	*****		*****	BDL	*****	(19)	0	1/7	Grab	
00720 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	14.51	DAILY MAX	LBS/DAY	*****	*****		*****	0.419	*****	MG/L	0	WEEKLY	GRAB	
CHROMIUM, TOTAL (AS CR)	MEASUREMENT	4.02	5.35	(26)	*****	*****		*****	0.025	*****	(19)	0	1/7	Composite	
01034 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1251	DAILY MAX	LBS/DAY	*****	*****		*****	0.100	*****	MG/L	0	WEEKLY	COMPOSITE	
COPPER, TOTAL (AS CU)	MEASUREMENT	< 1.25	2.36	(26)	*****	*****		*****	0.010	*****	(19)	0	1/7	Composite	
01042 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1251	DAILY MAX	LBS/DAY	*****	*****		*****	0.100	*****	MG/L	0	WEEKLY	COMPOSITE	
LEAD, TOTAL (AS PB)	MEASUREMENT	BDL	BDL	(26)	*****	*****		*****	BDL	*****	(19)	0	1/7	Composite	
01051 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1003	DAILY MAX	LBS/DAY	*****	*****		*****	0.690	*****	MG/L	0	WEEKLY	COMPOSITE	
NAME / TITLE PRINCIPAL EXECUTIVE OFFICER	 H. H. Holliman, President Tennessee Eastman Division														
TYPED OR PRINTED	OFFICER OR AUTHORIZED AGENT														
COMMENT AND EXPLANATION OF ANY VIOLATIONS	(Reference all attachments here) In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance. EPA FORM 3320-1 (REV.9-88) Previous editions may be used.														
TELEPHONE	(423) 229-2000														
AREA CODE NUMBER	98 - 11 - 11														
YEAR, MO, DAY	98 - 11 - 11														

PERMITTEE NAME/ADDRESS:
 TN EASTMAN DIVISION
 DIVISION OF EASTMAN CHEMICAL CO.
 P.O. BOX 1993
 KINGSPOORT, TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 MAJOR
 DISCHARGE MONITORING REPORT (DMR)
 TN0002640
 002 G
 PERMIT NUMBER
 DISCHARGE NUMBER

FORM APPROVED
 OMB No. 2040-0004

Facility: TN EASTMAN - KINGSPORT
 INDUSTRIAL PROCESS WASTEWATER
 EFFLUENT

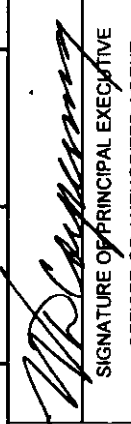
Location: SULLIVAN COUNTY TN 37662-5393

MONITORING PERIOD

FROM 98 - 10 - 01 TO 98 - 10 - 31

** NO DISCHARGE [] **

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT REQUIREMENT	Quantity or Loading (38-45)			Quantity or Concentration (54-61)			NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)	
		AVERAGE (46-53)	MINIMUM (38-45)	AVERAGE (46-53)	MAXIMUM (54-61)	UNIT (19)	UNIT (19)				
NICKEL, TOTAL (AS NI)	SAMPLE MEASUREMENT PERMIT REQUIREMENT	7.90	*****	0.038	0.051	(26)	(19)	0	1/7	Composite	
01067 2 0 0 EFFLUENT NET VALUE	SAMPLE MEASUREMENT PERMIT REQUIREMENT	422.84 MON AVG	***** DAILY MAX	1.690 MON AVG	3.980 DAILY MAX	LBS/DAY	MG/L		WEEKLY	COMPOSITE	
ZINC, TOTAL (AS ZN)	SAMPLE MEASUREMENT PERMIT REQUIREMENT	15.07	*****	0.074	0.082	(26)	(19)	0	1/7	Composite	
01092 2 0 0 EFFLUENT NET VALUE	SAMPLE MEASUREMENT PERMIT REQUIREMENT	158.00 MON AVG	***** DAILY MAX	0.635 MON AVG	1.270 DAILY MAX	LBS/DAY	MG/L		WEEKLY	COMPOSITE	
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT PERMIT REQUIREMENT	23.49	*****	*****	*****	(03)		0	Continuous	N/A	
50050 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT PERMIT REQUIREMENT	REPORT MON AVG	REPORT DAILY MAX	*****	*****	MGD	****		CONTINUOUS	RECORDER	
BOD, CARBONACEOUS 05 DAY, 20C	SAMPLE MEASUREMENT PERMIT REQUIREMENT	1.223	*****	*****	*****	(26)		0	31/31	Composite	
80082 2 W 0 EFFLUENT NET VALUE	SAMPLE MEASUREMENT PERMIT REQUIREMENT	6000 MON AVG	***** DAILY MAX	*****	*****	LBS/DAY	****		DAILY	COMPOSITE	
	SAMPLE MEASUREMENT PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT PERMIT REQUIREMENT										
NAME / TITLE PRINCIPAL EXECUTIVE OFFICER		SIGNATURE OF PRINCIPAL EXECUTIVE			OFFICER OR AUTHORIZED AGENT			TELEPHONE			DATE
H. H. Holliman, President Tennessee Eastman Division								(423) 229-2000			98 - 11 - 11
TYPED OR PRINTED								AREA CODE NUMBER			YEAR MO DAY

Forms by WindowChem(707)864-0845;pn11090.v5 01/4/98

(Reference all attachments here)

COMMENT AND EXPLANATION OF ANY VIOLATIONS
 In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPC-C-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

PERMITTEE NAME/ADDRESS:
 TN EASTMAN DIVISION
 DIVISION OF EASTMAN CHEMICAL CO.
 P.O. BOX 1993
 KINGSFORT, TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 DISCHARGE MONITORING REPORT (DMR)
 MAJOR (SUBR 06)
 F - FINAL
 TN0002640
 002 G
 DISCHARGE NUMBER

FORM APPROVED
 OMB No. 2040-0004

INDUSTRIAL PROCESS WASTEWATER
 EFFLUENT

MONITORING PERIOD

FROM 98-11-01 TO 98-11-30

Location: SULLIVAN COUNTY TN 37662-5393

Facility: TN EASTMAN - KINGSFORT

** NO DISCHARGE **

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	(3 Card Only) (46-53)			(4 Card Only) (38-45)			Concentration (54-61)			NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)
	AVERAGE	MINIMUM	MAXIMUM	UNIT	MINIMUM	AVERAGE	MAXIMUM	UNIT				
PH	MEASUREMENT	*****	*****	*****	7.0	*****	*****	(12)	0	Continuous	N/A	
00400 1 0 0 EFFLUENT GROSS VALUE	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	CONTINUOUS	RECORDER	
SOLIDS, TOTAL SUSPENDED	MEASUREMENT	1,884	7,116	(26)	*****	*****	*****	SU	0	30/30	Composite	
00530 1 0 0 EFFLUENT GROSS VALUE	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	DAILY	COMPOSITE	
NITROGEN, AMMONIA TOTAL (AS N)	MEASUREMENT	< 64	335	(26)	*****	*****	*****	(19)	0	30/30	Composite	
00810 2 0 0 EFFLUENT NET VALUE	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	DAILY	COMPOSITE	
CYANIDE, TOTAL (AS CN)	MEASUREMENT	BDL	BDL	(26)	*****	*****	*****	(19)	0	1/7	Grab	
00720 2 0 0 EFFLUENT NET VALUE	MEASUREMENT	BDL	BDL	(26)	*****	*****	*****	*****	0	WEEKLY	GRAB	
CHROMIUM, TOTAL (AS CR)	MEASUREMENT	2.41	2.81	(26)	*****	*****	*****	*****	0	1/7	Composite	
01034 2 0 0 EFFLUENT NET VALUE	MEASUREMENT	< 0.87	1.52	(26)	*****	*****	*****	*****	0	WEEKLY	COMPOSITE	
COPPER, TOTAL (AS CU)	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	1/7	Composite	
01042 2 0 0 EFFLUENT NET VALUE	MEASUREMENT	BDL	BDL	(26)	*****	*****	*****	*****	0	1/7	Composite	
LEAD, TOTAL (AS PB)	MEASUREMENT	BDL	BDL	(26)	*****	*****	*****	*****	0	WEEKLY	COMPOSITE	
01051 2 0 0 EFFLUENT NET VALUE	MEASUREMENT	*****	*****	*****	*****	*****	*****	*****	0	WEEKLY	COMPOSITE	

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER
 H. H. Holliman, President
 Tennessee Eastman Division

OFFICER OR AUTHORIZED AGENT
 (Signature)
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER

TELEPHONE
 (423) 229-2000

AREA CODE NUMBER
 98 - 12 - 10

YEAR
 MO
 DAY

COMMITTEE UNDER FEDERALITY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER THE
 DIRECTION OR SUPERVISION OF AN EMPLOYEE OF THE AGENCY AND THAT THE EMPLOYEE HAS BEEN TRAINED TO
 PROPERLY OBTAIN AND EVALUATE THE INFORMATION SUBMITTED BASED ON A KNOWLEDGE OF THE PERSON OR PERSONS
 WHO MANAGE THE FACILITY OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR OBTAINING THE INFORMATION. THE
 INFORMATION SUBMITTED IS TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM
 AWARE THAT THESE REPRESENTATIONS ARE SUBJECT TO PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY
 OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

(Reference all attachments here)

COMMENT AND EXPLANATION OF ANY VIOLATIONS

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV. 9-88) Previous editions may be used. (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

PERMITTEE NAME/ADDRESS:
 TN EASTMAN DIVISION
 DIVISION OF EASTMAN CHEMICAL CO.
 P.O. BOX 1993
 KINGSPOST, TN 37662-5393
 Facility: TN EASTMAN - KINGSPOST
 Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 MAJOR DISCHARGE MONITORING REPORT (DMR)
 (SUBR 06)
 F - FINAL
 INDUSTRIAL PROCESS WASTEWATER EFFLUENT
 MONITORING PERIOD
 FROM 98-11-01 TO 98-11-30
 ** NO DISCHARGE **

FORM APPROVED
 OMB No. 2040-0004

PARAMETER (32-37)	Quantity or Loading (4 Card Only)			Quantity or Concentration (54-67)			NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)
	AVERAGE (46-53)	MAXIMUM (54-61)	UNIT (38-45)	AVERAGE (46-53)	MAXIMUM (54-61)	UNIT (38-45)			
NICKEL, TOTAL (AS NI)	6.42	8.50	(26)	0.031	0.041	(19)	0	1/7	Composite
01067 2 0 0 EFFLUENT NET VALUE	9.20	10.61	(26)	0.043	0.048	(19)	0	1/7	Composite
ZINC, TOTAL (AS ZN)	25.07	28.20	(03)	*****	*****	*****	0	Continuous	N/A
01092 2 0 0 EFFLUENT NET VALUE	829	1,630	(26)	*****	*****	*****	0	30/30	Composite
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	*****	*****	MGD	*****	*****	*****	0	CONTINUOUS	RECORDER
50050 1 0 0 EFFLUENT GROSS VALUE	*****	*****	MGD	*****	*****	*****	0	DAILY	COMPOSITE
BOD, CARBONACEOUS 05 DAY, 20C	*****	*****	LBS/DAY	*****	*****	*****	0	*****	*****
80082 2 W 0 EFFLUENT NET VALUE	*****	*****	LBS/DAY	*****	*****	*****	0	*****	*****

NAME / TITLE: PRINCIPAL EXECUTIVE OFFICER
 H. H. Holliman, President
 Tennessee Eastman Division
 TYPED OR PRINTED

COMMENT AND EXPLANATION OF ANY VIOLATIONS
 In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.
 EPA FORM 3320-1 (REV.9-88) Previous editions may be used.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT
 OFFICER OR AUTHORIZED AGENT
 (423) 239-2000
 AREA CODE NUMBER
 TELEPHONE
 DATE
 98 - 12 - 10
 YEAR MO DAY

PERMITTEE NAME/ADDRESS:
 TN EASTMAN DIVISION
 DIVISION OF EASTMAN CHEMICAL CO.
 P.O. BOX 1993
 KINGSPORT, TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 MAJOR (SUBR 06)
 DISCHARGE MONITORING REPORT (DMR)
 002 G
 DISCHARGE NUMBER

FORM APPROVED
 OMB No. 2040-0004

INDUSTRIAL PROCESS WASTEWATER
 EFFLUENT

MONITORING PERIOD
 FROM 98 - 12 - 01 TO 98 - 12 - 31

Location: SULLIVAN COUNTY TN 37662-5393

Facility: TN EASTMAN - KINGSPORT

** NO DISCHARGE [] **

NOTE: Read instructions before completing this form

PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) (46-53)			(4 Card Only) (38-45)			Quantity or Concentration (54-61)			NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)
		AVERAGE	MINIMUM	MAXIMUM	UNIT	MINIMUM	AVERAGE	MAXIMUM	UNIT				
PH	MEASUREMENT	*****	6.8	*****	*****	*****	*****	8.0	(12)	0	Continuous	N/A	
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	6.0 MINIMUM	*****	*****	*****	*****	9.0 MAXIMUM	SU	0	CONTINUOUS	RECORDER	
SOLIDS, TOTAL SUSPENDED	MEASUREMENT	1,675	*****	3,987	*****	*****	*****	*****	*****	0	19/31	Composite	
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	*****	*****	0	WEEKLY	COMPOSITE	
NITROGEN, AMMONIA TOTAL (AS N)	MEASUREMENT	< 61	*****	408	*****	*****	*****	1.9	(19)	0	10/31	Composite	
00610 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	61.0 DAILY MAX	MG/L	0	WEEKLY	COMPOSITE	
CYANIDE, TOTAL (AS CN)	MEASUREMENT	< 2.11	*****	< 2.11	*****	*****	*****	< 0.010	(19)	0	1/31	Grab	
00720 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0.048 MON AVG	MG/L	0	ONCE/MONTH	GRAB	
CHROMIUM, TOTAL (AS CR)	MEASUREMENT	3.87	*****	3.87	*****	*****	*****	0.018	(19)	0	1/31	Composite	
01034 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0.050 MON AVG	MG/L	0	ONCE/MONTH	COMPOSITE	
COPPER, TOTAL (AS CU)	MEASUREMENT	1.67	*****	1.67	*****	*****	*****	0.008	(19)	0	1/31	Composite	
01042 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0.100 DAILY MAX	MG/L	0	ONCE/MONTH	COMPOSITE	
LEAD, TOTAL (AS PB)	MEASUREMENT	< 8.75	*****	< 8.75	*****	*****	*****	< 0.040	(19)	0	1/31	Composite	
01051 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	*****	*****	*****	*****	*****	*****	0.580 DAILY MAX	MG/L	0	ONCE/MONTH	COMPOSITE	
NAME / TITLE PRINCIPAL EXECUTIVE OFFICER	<p><i>H. H. Holliman</i> SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER</p>												
H. H. Holliman, President Tennessee Eastman Division	<p>OFFICER OR AUTHORIZED AGENT</p>												
TYPED OR PRINTED	<p>TELEPHONE</p>												
	<p>(423) 229-2000</p>												
	<p>AREA CODE NUMBER</p>												
	<p>YEAR MO DAY</p>												
	<p>99 - 01 - 13</p>												

Form by WinDocChem(70)864-0845.ppt(05/05 01/4/196)

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER THE DIRECTION OR SUPERVISION OF A PERSON WHOSE NAME AND TITLE ARE SHOWN HEREIN AND WHO IS RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION SUBMITTED. I AM NOT PROVIDING THIS INFORMATION TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN PERMISSION OF THE PERSON WHOSE NAME AND TITLE ARE SHOWN HEREIN.

COMMENT AND EXPLANATION OF ANY VIOLATIONS
 (Reference all attachments here)

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV. 9-88) Previous editions may be used. (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

PERMITTEE NAME/ADDRESS:

TN EASTMAN DIVISION
 DIVISION OF EASTMAN CHEMICAL CO.
 P.O. BOX 1983
 KINGSPOBT, TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)
 TN0002640
 PERMIT NUMBER
 MAJOR (SUBR 06)
 002 G
 DISCHARGE NUMBER
 F - FINAL

FORM APPROVED
 OMB No. 2040-0004

INDUSTRIAL PROCESS WASTEWATER
 EFFLUENT

MONITORING PERIOD

FROM 98 - 12 - 01 TO 98 - 12 - 31

Location: SULLIVAN COUNTY TN 37662-5393

Facility: TN EASTMAN - KINGSPORT

** NO DISCHARGE [] **

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	Quantity or Loading (4 Card Only) (38-45)			Quantity or (46-53)		Concentration (54-61)		NO. EX (62-63)	Frequency of Analysis (64-68)	Sample Type (69-70)
	AVERAGE (46-53)	MAXIMUM (54-61)	UNIT (26)	MINIMUM (38-45)	AVERAGE (46-53)	UNIT (19)	MAXIMUM (54-61)			
NICKEL, TOTAL (AS NI) 01067 2 0 0	4.73	4.73	(26)	*****	0.022	0.022	(19)	0	1/31	Composite
EFFLUENT NET VALUE	MON AVG	DAILY MAX	LBS/DAY	*****	1.090 MON AVG	3.980 DAILY MAX	MG/L	0	ONCE/MONTH	COMPOSITE
ZINC, TOTAL (AS ZN)	14.89	14.89	(26)	*****	0.068	0.068	(19)	0	1/31	Composite
01092 2 0 0	13.677 MON AVG	277.54 DAILY MAX	LBS/DAY	*****	0.636 MON AVG	1.270 DAILY MAX	MG/L	0	ONCE/MONTH	COMPOSITE
EFFLUENT NET VALUE	MON AVG	DAILY MAX	LBS/DAY	*****	*****	*****	MG/L	0	CONTINUOUS	N/A
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	24.2	27.8	(03)	*****	*****	*****	MGD	0	CONTINUOUS	RECORDER
50050 1 0 0	REPORT MON AVG	REPORT DAILY MAX	MGD	*****	*****	*****	MGD	0	19/31	Composite
BOD, CARBONACEOUS 05 DAY, 20C	702	1,218	(26)	*****	*****	*****	LBS/DAY	0	WEEKLY	COMPOSITE
80082 2 W 0	6000 MON AVG	13000 DAILY MAX	LBS/DAY	*****	*****	*****	LBS/DAY	0	*****	*****
EFFLUENT GROSS VALUE	MON AVG	DAILY MAX	LBS/DAY	*****	*****	*****	LBS/DAY	0	*****	*****
MEASUREMENT										
PERMIT REQUIREMENT										
SAMPLE										
MEASUREMENT										
PERMIT REQUIREMENT										
SAMPLE										
MEASUREMENT										
PERMIT REQUIREMENT										
SAMPLE										
MEASUREMENT										
PERMIT REQUIREMENT										
SAMPLE										

NAME / TITLE PRINCIPAL EXECUTIVE OFFICER
 H. H. Holliman, President
 Tennessee Eastman Division

TELEPHONE
 (423) 229-2000

DATE
 99 - 01 - 13

OFFICER OR AUTHORIZED AGENT
 SIGNATURE OF PRINCIPAL EXECUTIVE
H. H. Holliman

AREA CODE NUMBER
 (423) 229-2000

YEAR MO DAY
 99 - 01 - 13

FORMS BY WINDOWCHEM(07)084-0845.ppt 11/08/99, v3.01-14/198

COMPLY 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 DUTY AS THE PERSON OR PERSON WHO MANAGES 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 THESE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

(Reference all attachments here)


COMMENT AND EXPLANATION OF ANY VIOLATIONS

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV.9-88) Previous editions may be used. (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

*** NO DISCHARGE [] ***
 NOTE: Read instructions before completing this form.

MONITORING PERIOD
 FROM 98 - 10 - 01 TO 98 - 12 - 31


PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) (46-53)		Loading Unit	Quantity or (54-61)		Quality or (46-53)		Concentration (54-61)		NO. EX (62-63)	Frequency of analysis (64-66)	Sample Type (69-70)
		Average	Maximum		Minimum	Average	Maximum	Unit					
CARBON TETRACHLORIDE	SAMPLE MEASUREMENT	<0.18	<0.18	(26)	<0.001	<0.001	*****	*****	(19)	0	1/Quarter	Grab	
32102 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	8.30 DAILY MAX	8.30 DAILY MAX	LBS/DAY	0.018 MON AVG	0.038 DAILY MAX	*****	*****	MGL	0	QUARTERLY	GRAB	
1,2-DICHLOROETHANE	SAMPLE MEASUREMENT	<0.18	<0.18	(26)	<0.001	<0.001	*****	*****	(19)	0	1/Quarter	Grab	
32103 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	46.17 DAILY MAX	46.17 DAILY MAX	LBS/DAY	0.068 MON AVG	0.211 DAILY MAX	*****	*****	MGL	0	QUARTERLY	GRAB	
CHLOROFORM	SAMPLE MEASUREMENT	<0.18	<0.18	(26)	<0.001	<0.001	*****	*****	(19)	0	1/Quarter	Grab	
32106 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	10.05 DAILY MAX	10.05 DAILY MAX	LBS/DAY	0.021 MON AVG	0.046 DAILY MAX	*****	*****	MGL	0	QUARTERLY	GRAB	
TOLUENE	SAMPLE MEASUREMENT	<0.18	<0.18	(26)	<0.001	<0.001	*****	*****	(19)	0	1/Quarter	Grab	
34010 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	17.43 DAILY MAX	17.43 DAILY MAX	LBS/DAY	0.026 MON AVG	0.080 DAILY MAX	*****	*****	MGL	0	QUARTERLY	GRAB	
ACENAPHTHYLENE	SAMPLE MEASUREMENT	<0.18	<0.18	(26)	<0.001	<0.001	*****	*****	(19)	0	1/Quarter	Grab	
34200 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	3.016 DAILY MAX	3.016 DAILY MAX	LBS/DAY	0.006 MON AVG	0.016 DAILY MAX	*****	*****	MGL	0	QUARTERLY	GRAB	
ACENAPHTHENE	SAMPLE MEASUREMENT	<0.18	<0.18	(26)	<0.001	<0.001	*****	*****	(19)	0	1/Quarter	Grab	
34205 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	1.022 DAILY MAX	1.022 DAILY MAX	LBS/DAY	0.022 MON AVG	0.069 DAILY MAX	*****	*****	MGL	0	QUARTERLY	GRAB	
ACRYLONITRILE	SAMPLE MEASUREMENT	<0.18	<0.18	(26)	<0.001	<0.001	*****	*****	(19)	0	1/Quarter	Grab	
34215 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6.248 DAILY MAX	6.248 DAILY MAX	LBS/DAY	0.098 MON AVG	0.242 DAILY MAX	*****	*****	MGL	0	QUARTERLY	GRAB	
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	H. H. Holliman, President SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT 												
Tennessee Eastman Division	AREA CODE NUMBER (423) 229-2000 TELEPHONE DATE YEAR MO DAY 99 - 01 - 13												

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV. 9-88) Previous editions may be used. (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

PAGE 1 OF 8

PARAMETER (32-37)	(3 Card Only) (46-53)		Quantity or (54-61)		Loading		(4 Card Only) (38-45)		Quality or (46-53)		Concentration (54-61)		NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
	Average	Maximum	Average	Maximum	Unit	Unit	Minimum	Maximum	Average	Maximum	Unit	Unit			
ANTHRACENE	MEASUREMENT	<0.18	<0.18	<0.18	(26)								0	1/Quarter	Grab
34220 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	DAILY MAX	LBS/DAY				0.00082	0.00162	MG/L	MG/L		QUARTERLY	GRAB
BENZENE, DISSOLVED	MEASUREMENT	<0.18	<0.18	<0.18	(26)								0	1/Quarter	Grab
34235 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	DAILY MAX	LBS/DAY				0.037	0.0735	MG/L	MG/L		QUARTERLY	GRAB
BENZO (K) FLUORANTHENE	MEASUREMENT	<0.18	<0.18	<0.18	(26)								0	1/Quarter	Grab
34242 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	DAILY MAX	LBS/DAY				0.008	0.016	MG/L	MG/L		QUARTERLY	GRAB
BENZO (A) PYRENE	MEASUREMENT	<0.18	<0.18	<0.18	(26)								0	1/Quarter	Grab
34247 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	DAILY MAX	LBS/DAY				0.008	0.016	MG/L	MG/L		QUARTERLY	GRAB
CHLORO BENZENE	MEASUREMENT	<0.18	<0.18	<0.18	(26)								0	1/Quarter	Grab
34301 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	DAILY MAX	LBS/DAY				0.015	0.028	MG/L	MG/L		QUARTERLY	GRAB
CHRYSENE	MEASUREMENT	<0.18	<0.18	<0.18	(26)								0	1/Quarter	Grab
34320 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	DAILY MAX	LBS/DAY				0.00082	0.00162	MG/L	MG/L		QUARTERLY	GRAB
DIETHYL PHTHALATE	MEASUREMENT	<0.18	<0.18	<0.18	(26)								0	1/Quarter	Grab
34336 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	DAILY MAX	LBS/DAY				0.008	0.016	MG/L	MG/L		QUARTERLY	GRAB
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	H. H. Holliman, President Tennessee Eastman Division TYPED OR PRINTED														
COMMENT AND EXPLANATION OF ANY VIOLATIONS	(Reference all attachments here) In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance. EPA FORM 3320-1 (REV. 9-88) Previous editions may be used.														
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER														
OFFICER OR AUTHORIZED AGENT	(423) 229-2000 AREA CODE NUMBER														
TELEPHONE	99 - 01 - 13 YEAR MO DAY														

MAJOR
(SUBR 06)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

PERMITTEE NAME/ADDRESS:

TN EASTMAN DIVISION
DIVISION OF EASTMAN CHEMICAL CO.
P.O. BOX 1993
KINGSPORT, TN 37662-5393
Facility: TN EASTMAN - KINGSPORT
Location: SULLIVAN COUNTY TN 37662-5393

DISCHARGE MONITORING REPORT (DMR)
002 Q
DISCHARGE NUMBER

TN0002640
PERMIT NUMBER

F - FINAL
PROCESSED WW QUARTERLY REPORT
EFFLUENT

*** NO DISCHARGE ***

NOTE: Read instructions before completing this form.

MONITORING PERIOD
FROM 98 - 10 - 01 TO 98 - 12 - 31

PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) (46-53)		Quantity or (54-61)		Loading Unit	(4 Card Only) (38-45)		Quality or (46-53)		Concentration (54-61)	Unit	NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
		Average	Maximum	Maximum	Minimum		Average	Maximum							
DIMETHYL PHTHALATE	MEASUREMENT	*****	<0.18	(26)	*****	<0.001	(19)	0	1/Quarter	Grab					
34341 2 0 0	PERMIT REQUIREMENT	4.15 MON AVG	10.27 DAILY MAX	LBS/DAY	*****	0.019 MON AVG	MG/L	0	QUARTERLY	GRAB					
FLUORANTHENE	MEASUREMENT	*****	<0.18	(26)	*****	<0.001	(19)	0	1/Quarter	Grab					
34376 2 0 0	PERMIT REQUIREMENT	5.48 MON AVG	14.88 DAILY MAX	LBS/DAY	*****	0.025 MON AVG	MG/L	0	QUARTERLY	GRAB					
FLUORENE	MEASUREMENT	*****	<0.18	(26)	*****	<0.001	(19)	0	1/Quarter	Grab					
34381 2 0 0	PERMIT REQUIREMENT	0.179 MON AVG	0.354 DAILY MAX	LBS/DAY	*****	0.0082 MON AVG	MG/L	0	QUARTERLY	GRAB					
HEXACHLOROBUTADIENE	MEASUREMENT	*****	<1.29	(26)	*****	<0.007	(19)	0	1/Quarter	Grab					
34391 2 0 0	PERMIT REQUIREMENT	4.37 MON AVG	10.71 DAILY MAX	LBS/DAY	*****	0.020 MON AVG	MG/L	0	QUARTERLY	GRAB					
HEXACHLOROETHANE	MEASUREMENT	*****	<1.47	(26)	*****	<0.008	(19)	0	1/Quarter	Grab					
34396 2 0 0	PERMIT REQUIREMENT	11.80 MON AVG	11.80 DAILY MAX	LBS/DAY	*****	0.021 MON AVG	MG/L	0	QUARTERLY	GRAB					
METHYL CHLORIDE	MEASUREMENT	*****	<0.18	(26)	*****	<0.001	(19)	0	1/Quarter	Grab					
34418 2 0 0	PERMIT REQUIREMENT	13.74 MON AVG	41.52 DAILY MAX	LBS/DAY	*****	0.086 MON AVG	MG/L	0	QUARTERLY	GRAB					
METHYLENE CHLORIDE	MEASUREMENT	*****	<0.18	(26)	*****	<0.001	(19)	0	1/Quarter	Grab					
34423 2 0 0	PERMIT REQUIREMENT	13.74 MON AVG	19.45 DAILY MAX	LBS/DAY	*****	0.040 MON AVG	MG/L	0	QUARTERLY	GRAB					
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER H. H. Holliman, President Tennessee Eastman Division TYPED OR PRINTED OFFICER OR AUTHORIZED AGENT SIGNATURE OF PRINCIPAL EXECUTIVE (423) 229-2000 AREA CODE NUMBER 99 - 01 - 13 YEAR MO DAY															

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV. 9-88) Previous editions may be used.

(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

PERMITTEE NAME/ADDRESS:
 TN EASTMAN DIVISION
 DIVISION OF EASTMAN CHEMICAL CO.
 P.O BOX 1993
 KINGSPOST, TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 DISCHARGE MONITORING REPORT (DMR)
 002 Q
 DISCHARGE NUMBER

MAJOR (SUBR 06)
 F - FINAL
 PROCESSED WW QUARTERLY REPORT
 EFFLUENT

FORM APPROVED
 OMB No. 2040-0004

Facility: TN EASTMAN - KINGSPOST
 Location: SULLIVAN COUNTY TN 37662-5393

MONITORING PERIOD
 FROM 98 - 10 - 01 TO 98 - 12 - 31

*** NO DISCHARGE ***
 NOTE: Read instructions before completing this form.

PARAMETER (92-37)	(3 Card Only) (46-53)		Quantity or (54-61)		Loading Unit	(4 Card Only) (38-45)		Quality or (46-53)		Concentration (54-61)		NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
	Average	PERMIT REQUIREMENT	Maximum	DAILY MAX		Minimum	Average	Maximum	Unit	Minimum	Maximum			
NITROBENZENE	*****	MEASUREMENT	<0.18		(26)	*****		*****		<0.001	(19)	0	1/Quarter	Grab
34447 2 0 0 EFFLUENT NET VALUE	590 MON AVG	PERMIT REQUIREMENT	1488 DAILY MAX		LBS/DAY	*****		0.027 MON AVG		0.068 DAILY MAX	MGL		QUARTERLY	GRAB
PHENANTHRENE	*****	MEASUREMENT	<0.18		(26)	*****		*****		<0.001	(19)	0	1/Quarter	Grab
34461 2 0 0 EFFLUENT NET VALUE	*****	PERMIT REQUIREMENT	0.354 DAILY MAX		LBS/DAY	*****		0.00082 MON AVG		0.00162 DAILY MAX	MGL		QUARTERLY	GRAB
PYRENE	*****	MEASUREMENT	<0.18		(26)	*****		*****		<0.001	(19)	0	1/Quarter	Grab
34469 2 0 0 EFFLUENT NET VALUE	*****	PERMIT REQUIREMENT	0.354 DAILY MAX		LBS/DAY	*****		0.00082 MON AVG		0.00162 DAILY MAX	MGL		QUARTERLY	GRAB
TETRACHLOROETHYLENE	*****	MEASUREMENT	<0.18		(26)	*****		*****		<0.001	(19)	0	1/Quarter	Grab
34475 2 0 0 EFFLUENT NET VALUE	481 MON AVG	PERMIT REQUIREMENT	12.24 DAILY MAX		LBS/DAY	*****		0.022 MON AVG		0.066 DAILY MAX	MGL		QUARTERLY	GRAB
1,1 - DICHLOROETHANE	*****	MEASUREMENT	<0.18		(26)	*****		*****		<0.001	(19)	0	1/Quarter	Grab
34496 2 0 0 EFFLUENT NET VALUE	481 MON AVG	PERMIT REQUIREMENT	12.89 DAILY MAX		LBS/DAY	*****		0.022 MON AVG		0.059 DAILY MAX	MGL		QUARTERLY	GRAB
1,1 - DICHLOROETHYLENE	*****	MEASUREMENT	<0.18		(26)	*****		*****		<0.001	(19)	0	1/Quarter	Grab
34501 2 0 0 EFFLUENT NET VALUE	360 MON AVG	PERMIT REQUIREMENT	5.46 DAILY MAX		LBS/DAY	*****		0.016 MON AVG		0.025 DAILY MAX	MGL		QUARTERLY	GRAB
1,1,1 - TRICHLOROETHANE	*****	MEASUREMENT	<0.18		(26)	*****		*****		<0.001	(19)	0	1/Quarter	Grab
34506 2 0 0 EFFLUENT NET VALUE	459 MON AVG	PERMIT REQUIREMENT	11.80 DAILY MAX		LBS/DAY	*****		0.021 MON AVG		0.054 DAILY MAX	MGL		QUARTERLY	GRAB
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	<p><i>H. H. Holliman</i></p> <p>SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER</p>													
H. H. Holliman, President	<p>OFFICER OR AUTHORIZED AGENT</p>													
Tennessee Eastman Division	<p>TELEPHONE (423) 229-2000</p>													
TYPED OR PRINTED	<p>AREA CODE NUMBER (423) 229-2000</p>													
COMMENT AND EXPLANATION OF ANY VIOLATIONS	<p>YEAR MO DAY 99 - 01 - 13</p>													

REFERENCE all attachments here

IN ADDITION TO TAKING REASONABLE STEPS TO PREVENT INSTANCES OF NONCOMPLIANCE THROUGH THE IMPLEMENTATION OF SPCC AND SPCC-TYPE PLANS, EMPLOYEE TRAINING, ETC. WHEN A POTENTIALLY SIGNIFICANT INSTANCE OCCURS, WE NOTIFY THE DIVISION AND PROVIDE INFORMATION CONCERNING THE STEPS TAKEN OR PLANNED TO REDUCE, ELIMINATE, AND PREVENT RECURRENCE OF THE INSTANCE.

EPA FORM 3320-1 (REV. 9-88) PREVIOUS EDITIONS MAY BE USED.

(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

MONITORING PERIOD
 FROM 98 - 10 - 01 TO 98 - 12 - 31

*** NO DISCHARGE [] ***
 NOTE: Read instructions before completing this form.

PARAMETER (32-37)	MEASUREMENT REQUIREMENT	(3 Card Only) (45-53)		Quantity or (54-61)		Loading Unit	(4 Card Only) (38-45)		Quality or (46-53)		Concentration (54-61)		NO EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
		Average	Maximum	Minimum	Maximum		Average	Maximum	Unit	Unit					
1,1,2 - TRICHLOROETHANE	SAMPLE MEASUREMENT	*****	<0.18	*****	(26)	*****	<0.001	*****	<0.001	(19)	0	1/Quarter	Grab		
34511 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	*****	LBS/DAY	*****	0.054	*****	MON AVG	DAILY MAX	0	QUARTERLY	GRAB		
BENZO (A) ANTHRACENE	SAMPLE MEASUREMENT	*****	<0.18	*****	(26)	*****	<0.001	*****	<0.001	(19)	0	1/Quarter	Grab		
34526 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	*****	LBS/DAY	*****	0.016	*****	MON AVG	DAILY MAX	0	QUARTERLY	GRAB		
1,2 - DICHLOROBENZENE	SAMPLE MEASUREMENT	*****	<0.18	*****	(26)	*****	<0.001	*****	<0.001	(19)	0	1/Quarter	Grab		
34536 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	*****	LBS/DAY	*****	0.163	*****	MON AVG	DAILY MAX	0	QUARTERLY	GRAB		
1,2 - DICHLOROPROPANE	SAMPLE MEASUREMENT	*****	<0.18	*****	(26)	*****	<0.001	*****	<0.001	(19)	0	1/Quarter	Grab		
34541 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	*****	LBS/DAY	*****	0.230	*****	MON AVG	DAILY MAX	0	QUARTERLY	GRAB		
1,2 - TRANS - DICHLOROETHYLENE	SAMPLE MEASUREMENT	*****	<0.18	*****	(26)	*****	<0.001	*****	<0.001	(19)	0	1/Quarter	Grab		
34546 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	*****	LBS/DAY	*****	0.054	*****	MON AVG	DAILY MAX	0	QUARTERLY	GRAB		
1,2,4 - TRICHLOROBENZENE	SAMPLE MEASUREMENT	*****	<0.18	*****	(26)	*****	<0.001	*****	<0.001	(19)	0	1/Quarter	Grab		
34551 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	*****	LBS/DAY	*****	0.140	*****	MON AVG	DAILY MAX	0	QUARTERLY	GRAB		
1,3 - DICHLOROPROPYLENE, TOTAL WEIGHT	SAMPLE MEASUREMENT	*****	<0.36	*****	(26)	*****	<0.002	*****	<0.002	(19)	0	1/Quarter	Grab		
34561 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	MON AVG	DAILY MAX	*****	LBS/DAY	*****	0.044	*****	MON AVG	DAILY MAX	0	QUARTERLY	GRAB		
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER H. H. Holliman, President Tennessee Eastman Division TYPED OR PRINTED SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT (423) 229-2000 AREA CODE NUMBER 99 - 01 - 13 YEAR MO DAY															

COMMENT AND EXPLANATION OF ANY VIOLATIONS
 (Reference all attachments here)
 In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.
 EPA FORM 3320-1 (REV. 9-88) Previous editions may be used.
 (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)
 PAGE 5 OF 8

PERMITTEE NAME/ADDRESS:
 TN EASTMAN DIVISION
 DIVISION OF EASTMAN CHEMICAL CO.
 P O BOX 1993
 KINGSPOST, TN 37662-5393

Facility: TN EASTMAN - KINGSPOST
 Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
 DISCHARGE MONITORING REPORT (DMR)
 002 Q
 DISCHARGE NUMBER

MAJOR (SUBR 06)
 F - FINAL
 PROCESSED WW QUARTERLY REPORT
 EFFLUENT

FORM APPROVED
 OMB No 2040-0004

MONITORING PERIOD
 FROM 98 - 10 - 01 TO 98 - 12 - 31


*** NO DISCHARGE [] ***
 NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) (46-53)		(4 Card Only) (38-45)		Quality or (46-53)		Concentration (54-61)		NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
		Average	Maximum	Minimum	Maximum	Average	Maximum	Unit	Unit			
1,3 - DICHLOROBENZENE	PERMIT REQUIREMENT	6.77 MON AVG	<0.18 DAILY MAX	*****	*****	*****	<0.001	(19)	0	1/Quarter	Grab	
1,4 - DICHLOROBENZENE	PERMIT REQUIREMENT	3.28 MON AVG	6.12 DAILY MAX	*****	*****	0.016 MON AVG	0.028 DAILY MAX	(19)	0	1/Quarter	Grab	
2 - CHLOROPHENOL	PERMIT REQUIREMENT	6.77 MON AVG	21.41 DAILY MAX	*****	*****	0.031 MON AVG	0.098 DAILY MAX	(19)	0	1/Quarter	Grab	
2 - NITROPHENOL	PERMIT REQUIREMENT	8.96 MON AVG	15.08 DAILY MAX	*****	*****	0.041 MON AVG	0.069 DAILY MAX	(19)	0	1/Quarter	Grab	
2,4 - DICHLOROPHENOL	PERMIT REQUIREMENT	8.52 MON AVG	24.47 DAILY MAX	*****	*****	0.039 MON AVG	0.112 DAILY MAX	(19)	0	1/Quarter	Grab	
2,4 - DIMETHYLPHENOL	PERMIT REQUIREMENT	3.93 MON AVG	7.87 DAILY MAX	*****	*****	0.018 MON AVG	0.036 DAILY MAX	(19)	0	1/Quarter	Grab	
2,4 - DINITROTOLUENE	PERMIT REQUIREMENT	24.89 MON AVG	62.27 DAILY MAX	*****	*****	0.113 MON AVG	0.285 DAILY MAX	(19)	0	1/Quarter	Grab	
I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 USC .1001 AND 13 USC .1319. (PENALTIES UNDER THESE STATUTES MAY INCLUDE FINES UP TO \$10,000 AND OR MAXIMUM IMPRISONMENT OF BETWEEN 6 MONTHS AND 3 YEARS.)												
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER										SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER		TELEPHONE
H. H. Holliman, President												(423) 229-2000
Tennessee Eastman Division										OFFICER OR AUTHORIZED AGENT		AREA CODE NUMBER
TYPED OR PRINTED										99 - 01 - 13		YEAR MO DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.
 EPA FORM 3320-1 (REV. 9-88) Previous editions may be used. (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

*** NO DISCHARGE ***

NOTE: Read instructions before completing this form.

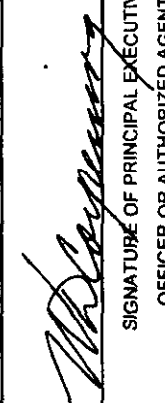
PARAMETER (32-37)	(3 Card Only) (46-53)		Quantity or (54-61)		Loading Unit	(4 Card Only) (38-45)		Quality or (46-53)		Concentration (54-61)		NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
	Average	Maximum	Minimum	Maximum		Minimum	Average	Maximum	Minimum	Maximum	Unit			
2,4 - DINITROPHENOL					(26)							0	1/Quarter	Grab
34616 2 0 0 EFFLUENT NET VALUE	16.51 MON AVG	<1.47 DAILY MAX	***** DAILY MAX	***** DAILY MAX	LBS/DAY	***** MON AVG	***** DAILY MAX	***** MON AVG	***** DAILY MAX	(19)	MGL	0	QUARTERLY	GRAB
2,6 - DINITROTOLUENE					(26)							0	1/Quarter	Grab
34626 2 0 0 EFFLUENT NET VALUE	55.72 MON AVG	<0.18 DAILY MAX	***** DAILY MAX	***** DAILY MAX	LBS/DAY	***** MON AVG	***** DAILY MAX	***** MON AVG	***** DAILY MAX	(19)	MGL	0	QUARTERLY	GRAB
4 - NITROPHENOL					(26)							0	1/Quarter	Grab
34646 2 0 0 EFFLUENT NET VALUE	16.73 MON AVG	<0.18 DAILY MAX	***** DAILY MAX	***** DAILY MAX	LBS/DAY	***** MON AVG	***** DAILY MAX	***** MON AVG	***** DAILY MAX	(19)	MGL	0	QUARTERLY	GRAB
4,6 - DINITRO - O - CRESOL					(26)							0	1/Quarter	Grab
34657 2 0 0 EFFLUENT NET VALUE	17.04 MON AVG	<0.18 DAILY MAX	***** DAILY MAX	***** DAILY MAX	LBS/DAY	***** MON AVG	***** DAILY MAX	***** MON AVG	***** DAILY MAX	(19)	MGL	0	QUARTERLY	GRAB
PHENOL					(26)							0	1/Quarter	Grab
34694 2 0 0 EFFLUENT NET VALUE	3.28 MON AVG	<0.18 DAILY MAX	***** DAILY MAX	***** DAILY MAX	LBS/DAY	***** MON AVG	***** DAILY MAX	***** MON AVG	***** DAILY MAX	(19)	MGL	0	QUARTERLY	GRAB
NAPHTHALENE					(26)							0	1/Quarter	Grab
34696 2 0 0 EFFLUENT NET VALUE	4.81 MON AVG	<0.18 DAILY MAX	***** DAILY MAX	***** DAILY MAX	LBS/DAY	***** MON AVG	***** DAILY MAX	***** MON AVG	***** DAILY MAX	(19)	MGL	0	QUARTERLY	GRAB
ETHYLBENZENE					(26)							0	1/Quarter	Grab
37371 2 0 0 EFFLUENT NET VALUE	6.88 MON AVG	<0.18 DAILY MAX	***** DAILY MAX	***** DAILY MAX	LBS/DAY	***** MON AVG	***** DAILY MAX	***** MON AVG	***** DAILY MAX	(19)	MGL	0	QUARTERLY	GRAB
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER H. H. Holliman, President Tennessee Eastman Division TYPED OR PRINTED SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  (423) 229-2000 AREA CODE NUMBER 99 - 01 - 13 YEAR MO DAY														

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
 In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.
 EPA FORM 3320-1 (REV. 9-88) Previous editions may be used. (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

*** NO DISCHARGE ***

NOTE: Read instructions before completing this form.

MONITORING PERIOD
 FROM 98 - 10 - 01 TO 98 - 12 - 31

PARAMETER (32-37)	SAMPLE MEASUREMENT PERMIT REQUIREMENT	(3 Card Only) (46-53)		Quantity or (54-61)		Loading Unit	(4 Card Only) (38-45)		Quality or (46-53)		Concentration (54-61)		NO. EX (62-63)	Frequency of analysis (64-68)	Sample Type (69-70)
		Average	PERMIT	Maximum	DAILY MAX		Minimum	Average	Maximum	Minimum	Average	Maximum			
BIS (2 - ETHYLHEXYL) PHTHALATE	MEASUREMENT PERMIT REQUIREMENT	22.51	60.96	2.21	DAILY MAX	(26)	*****	0.012	*****	0.103	0.012	(19)	0	1/Quarter	Grab
EFFLUENT NET VALUE	MEASUREMENT PERMIT REQUIREMENT	*****	<0.37	<0.37	DAILY MAX	(26)	*****	<0.002	*****	MON AVG	<0.002	(19)	0	1/Quarter	Grab
DI - N - BUTYL PHTHALATE	MEASUREMENT PERMIT REQUIREMENT	5.90	12.45	12.45	DAILY MAX	(26)	*****	0.057	*****	MON AVG	0.057	MGL	0	QUARTERLY	GRAB
39110 2 0 0 EFFLUENT NET VALUE	MEASUREMENT PERMIT REQUIREMENT	*****	<0.18	<0.18	DAILY MAX	(26)	*****	<0.001	*****	MON AVG	<0.001	(19)	0	1/Quarter	GRAB
VINYL CHLORIDE	MEASUREMENT PERMIT REQUIREMENT	22.72	58.56	58.56	DAILY MAX	(26)	*****	0.268	*****	MON AVG	0.268	MGL	0	QUARTERLY	GRAB
39175 2 0 0 EFFLUENT NET VALUE	MEASUREMENT PERMIT REQUIREMENT	*****	<0.18	<0.18	DAILY MAX	(26)	*****	<0.001	*****	MON AVG	<0.001	(19)	0	1/Quarter	GRAB
TRICHLOROETHYLENE	MEASUREMENT PERMIT REQUIREMENT	4.59	11.80	11.80	DAILY MAX	(26)	*****	0.054	*****	MON AVG	0.054	MGL	0	QUARTERLY	GRAB
39180 2 0 0 EFFLUENT NET VALUE	MEASUREMENT PERMIT REQUIREMENT	*****	<0.18	<0.18	DAILY MAX	(26)	*****	<0.001	*****	MON AVG	<0.001	(19)	0	1/Quarter	GRAB
HEXACHLORO BENZENE	MEASUREMENT PERMIT REQUIREMENT	*****	0.000372	0.000372	DAILY MAX	(26)	*****	0.000372	*****	MON AVG	0.000372	MGL	0	QUARTERLY	GRAB
39700 2 0 0 EFFLUENT NET VALUE	MEASUREMENT PERMIT REQUIREMENT	*****	<0.18	<0.18	DAILY MAX	(26)	*****	<0.001	*****	MON AVG	<0.001	(19)	0	1/Quarter	GRAB
3,4 - BENZOFLUORANTHENE	MEASUREMENT PERMIT REQUIREMENT	*****	<0.18	<0.18	DAILY MAX	(26)	*****	<0.001	*****	MON AVG	<0.001	(19)	0	1/Quarter	GRAB
79531 2 0 0 EFFLUENT NET VALUE	MEASUREMENT PERMIT REQUIREMENT	1.75	3.54	3.54	DAILY MAX	(26)	*****	0.016	*****	MON AVG	0.016	MGL	0	QUARTERLY	GRAB
CHLOROETHANE	MEASUREMENT PERMIT REQUIREMENT	*****	<0.18	<0.18	DAILY MAX	(26)	*****	<0.001	*****	MON AVG	<0.001	(19)	0	1/Quarter	GRAB
85811 2 0 0 EFFLUENT NET VALUE	MEASUREMENT PERMIT REQUIREMENT	22.72	58.56	58.56	DAILY MAX	(26)	*****	0.268	*****	MON AVG	0.268	MGL	0	QUARTERLY	GRAB
I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 USC 1001 AND 31 USC 1315. (PENALTIES UNDER THESE STATUTES MAY INCLUDE FINES UP TO \$10,000 AND/OR MAXIMUM IMPRISONMENT OF BETWEEN 6 MONTHS AND 5 YEARS.)															
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER  H. H. Holliman, President Tennessee Eastman Division TYPED OR PRINTED															
OFFICER OR AUTHORIZED AGENT (423) 229-2000 AREA CODE NUMBER 99 - 01 - 13 YEAR MO DAY															

(Reference all attachments here)

COMMENT AND EXPLANATION OF ANY VIOLATIONS

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV. 9-88) Previous editions may be used.

(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)