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## 10.0 CLARIFICATION

The following documents were provided to clarify and expand on statements in the EIV:

1. 9 September 1994 letter from F. Frenduto to K. Khonsari/M. Dean
2. 25 October 1994 letter from F. Frenduto to K. Khonsari
3. 29 November 1994 letter from F. Frenduto to K. Khonsari
4. 7 February 1995 letter from F. Frenduto to K. Khonsari
5. 6 March 1995 letter from F. Frenduto to K. Khonsari

Air Products and Chemicals, Inc.  
7201 Hamilton Boulevard  
Allentown, PA 18195-1501

Telephone (610) 481-4911  
Telex: 847416

9 September 1994



Mrs. Karen Khonsari/Mrs. Mara Dean  
U.S. Department of Energy/PETC  
P.O. Box 10940  
Pittsburgh, PA 15236

Dear Karen/Mara:

Attached is our response to your questions ("Issues/Concerns identified at 18 August 1994 LPMNT Meeting"). We have restated the questions (except for the tables) to make it a little easier handle. We will follow through with the few missing items as discussed in the text. If you have any questions, please call.

The following are the attachments that are also included:

- MSDS for BASF Catalyst
- Methanol Specifications
- Modified Photo (Plate 2.2)
- Incinerated Wastes Diagram
- Equipment Leak Emissions Diagram
- Six Colored Photographs of the Eastman Facility (1 set only)

I am anxious to get some feedback on the revised Acurex package and would like to setup a meeting to discuss both the Acurex work and the EA/EIV work process.

Very truly yours,

A handwritten signature in black ink, appearing to read "Frank".

Frank S. Frenduto  
Project Engineer

FSF/jlm  
letter6

#### Attachments

cc: W. Brown  
L. Daniels (EMN)  
D. Drown  
R. Kornoski (DOE) w/o Attachments  
R. Vannice (EMN)

1. *Are there any soil testing results for the proposed 0.6 acre project site area? Special interest in lead, asbestos, and other contaminants since this area is currently used for equipment storage.*

No soil testing of this nature has been done.

2. *Correct EIV to consistently state that the proposed project site is 0.60 acres (there are still instances where the project site is identified as 0.34 acres).*

0.6 acres is correct. We will correct the 0.34 acre references in all EIV updates.

3. *If the composition of the catalyst is proprietary, please notify us (do not send it, just tell us it is proprietary). If it is proprietary, arrangements will have to be made for someone from APCI to visit Eastman (or vice versa) to obtain the data necessary to resolve concerns regarding copper, zinc and any other materials present if the catalyst is incinerated. The EA would then merely contain a statement(s) regarding the consequences of incinerating the catalyst without divulging enough information to reveal the catalyst composition if it is considered to be proprietary information.*

*If the composition is not proprietary, please send it.*

Attached is the MSDS for the BASF Catalyst. The main components of the catalyst, zinc, copper and aluminum, are not restricted as feeds in the incinerator operating permits.

4. *It is currently unclear how much methanol is currently produced and purchased. Please correct/complete (wee need x) the following table.*

Production from LPMEOH and the turned-down Eastman methanol plant will be 30 ton/day less than the Eastman methanol plant alone. In order to convey this, the table should read:

	<u>Currently</u>	<u>For Project</u>
Produced Lurgi	500	210 (not 240)
Produced LPMEOH	0	260
Total	500	470

To show that the impact of this 30 T/D shortfall is small, we will provide (soon) a value for all of the "traffic" into the Eastman site.

5. *"Grades" need to be defined (in terms of purity) and used consistently: chemical grade methanol, fuel grade methanol, process grade methanol.*

We recognize the problem you point out and have set the following conventions for naming the methanol streams within the LPMEOH™ Process. We will review the

text and use this convention in all EIV updates. The stream numbers given refer to the PFD.

- Raw Methanol - Stream #204 leaving 29C-03 H.P. Methanol Separator
- Crude Methanol - Stream #242 Bottoms of Methanol Rectifier Columns (29C-20) to Eastman Distillation in Plant 19.
- Fuel Methanol - Stream #233 Bottoms of Methanol Stabilizer Column for use in off-site fuel demonstrations.
- Product Methanol - Stream #214 Top of Methanol Rectifier Column (29C-20) used by Eastman directly in downstream processes.

#### Specifications

- Raw Methanol - No specification.
  - Crude Methanol - Set contractually between Air Products and Eastman.  
and (See attached)
  - Product Methanol
  - Fuel Methanol - 99.8% (min.) total alcohols; 0.2% max, water; 0.\_\_\_\_% max  
(Wt%) mineral oil.
6. *Storage of DME and the formation/lack of formation of organic peroxides - were there any formed? If so, were there any associated storage problems? If not, what prevented the formation of organic peroxides? → Gary to follow up on.*

The formation of organic peroxides are not a problem with DME in storage. We will follow up with some technical references (next week) supporting this.

7. *Carbon bed materials → What is composition? Carbon? Zinc? Combination? Other? Is there an operating plan developed for the treatment of these materials prior to disposal - for example, will the material be heated to release the carbonyls to the atmosphere?*

The need for guard bed(s), to protect the methanol catalyst from trace compounds that might reduce its activity, are currently under study. We are conducting analytical tests on the feed gas streams that comprise the synthesis gas to the LPMEOH Plant.

Our best guess at the moment is that we would have a single bed of activated carbon which would protect the catalyst from iron carbonyl and nickel carbonyl. Based on the data to date, it is reasonable to design the bed for a four year operating

period; that is the bed would last for the entire demonstration period without being replaced or reactivated in any way. At the end of the period we would incinerate the activated carbon in the on-site incinerator. Incineration would oxidize the carbonyls to iron and nickel oxide and CO<sub>2</sub>. Procedures will be developed for handling the contaminated material in a safe manner.

We anticipate that the size of this bed would be less than 10,000 lbs. of activated carbon.

8. *The Guard bed is not shown on the PFD. Please include it.*

The EIV (pg. 6-23) referred to guard beds 29C-40 A/B, which as you point out didn't get included on the PFD. As mentioned in the answer to question 7 above, we are not sure that a guard bed is required at all. Our best guess for the moment is that a single bed of 10,000 lbs. of activated carbon would last for the entire demonstration period.

This bed, if needed, would be placed immediately in front of exchanger 29E-02 shown on Page 2 of the PFD.

9. *For the groundwater monitoring wells 1LS3 and 1LS4, please provide updated data. The data provided are eight years old and more current data are needed to assess the quality. Also, is there any portion of the project which will affect the groundwater quality?*

The data included in the EIV is all the data obtained for those two wells. Two important pieces of information are in the EIV:

1. It is stated (p. 5-31) that these are not appropriate wells to measure groundwater for the LPMEOH site.
2. A RCRA Facilities Investigation is currently underway at the Eastman site. Once monitoring data is released to the EPA, this data can also be used in the EIV.

Future impacts on groundwater are not foreseen at this time. Appropriate diking and engineering controls are planned for the facility to prevent releases that would affect groundwater quality.

10. *Need the envelope of technology for each of the affected resources. Please provide a diagram indicating the equipment and associated emissions - for example, for air resources, how much of Long Island does the envelope contain? For cooling water, is the baseline (envelope) the entire plant? A schematic of each envelope would be most helpful.*

The baselines with which we compare emissions are as follows:

Water and Wastewater: The entire Eastman facility is used as the baseline. The best figure showing this is Figure 5.3-7 (p. 35) in the EIV.

Solid waste incineration and disposal: Again, the entire Eastman facility is used as the baseline.

Air emissions: The baseline used is all the chemical production processes on the South End of Long Island. This includes at least eight manufacturing processes (I say "at least" because you could logically divide some of the processes into smaller ones). Attached is a diagram that shows the equipment leak and other fugitive emissions for the LPMEOH Plant relative to these other facilities. These were chosen because they are in the general area of the LPMEOH site.

11. *Has Eastman issued any public information about the proposed project? What are Eastman's plans to do so, if any?*

No information has been issued regarding the project at this time. The current plan is to publicize in the local paper and to present it to, and to receive comments from, our community advisory panel, when business agreements between Eastman and APCI are complete,

12. *Need a baseline of existing noise levels? How do the existing noise levels compare with the OSHA or any local noise ordinance regulations? What are the anticipated noise levels during construction? How will the noise levels during operation compare to OSHA standards or local noise ordinance regulations (include immediate area of the project as well as the nearest receptor)? Is the closest residence occupied?*

We are still formulating a response to this question.

13. *To better assess the impact or lack of impact on visual resources of the proposed project, please submit a computer rendering or an artist rendering showing the proposed project on South Long Island.*

Air Products is preparing a three dimensional sketch of the LPMEOH Plant. We will use this to develop the rendering which will incorporate this into the Long Island setting. This will take a few weeks.

14. *Please provide better photos and maps of the proposed site.*

Additional photographs are attached.

15. *Please contact the Local Planning Commission to find out if there is any planned industry for the area - needed to assess long term cumulative impacts.*

The Sullivan Co. Industrial Commission knows of no plans for the new manufacturing or industry in the Kingsport area.

16. *Have any environmental audits been conducted on Long Island, in particular, South Long Island? If so, what were the results?*

Audits are done periodically at all Eastman facilities, but are generally records audits and not those in which samples are analyzed. This is not to say that sampling is never done, but that it is done for compliance with permits, performance tests, and various process improvement and waste minimization projects.

Results of internal audits are done to improve company processes, are not generally available for review by internal and external parties not directly involved in the audit.

17. *Please provide a block diagram map of existing process areas on South Long Island, for example, indicate parking lot, Lurgi unit, gasifier, storage tanks, etc.*

As discussed, we have modified Plate 2.2 (pg. 2-8 in the EIV) to include more "tags" to identify the facilities referred to in the text. This modified photo is attached.

#### I. Air Emissions Table

- PSD trigger for CO is 100 TPY.
- PSD trigger for VOC is 40 TPY.
- There are PSD triggers for various N and S compounds, but nothing that LPMEOH would emit. The N, S, H compound that LPMEOH emits is hydrogen gas (0.42 TPY).
- No particulate emissions have been calculated; this was an oversight (but not a big one) as there will be a small particulate emissions during catalyst unloading once/week or once/2 weeks. A rough estimate for this is less than 1 TPY. We will provide a calculated value later.
- PSD triggers for particulates are 25 TPY for TSP and 15 TPY for PM<sub>10</sub>.
- For particulates, the significant average concentration for both TSP and PM<sub>10</sub> is 10 µg/m<sup>3</sup> for a 24-hour average. The PSD increments for PM<sub>10</sub> in a Class II area are 17µg/m<sup>3</sup> for an annual average and 30 µg/m<sup>3</sup> for a 24-hour average.

- The EIV states the maximum CO increases, which are well below the 575  $\mu\text{g}/\text{m}^3$  significant average concentration (8 hour average). There is no increment for CO.
- There is no increment or significant average concentration for VOC.
- Eastman does not "consult" with the National Park Service on air permitting. The TDAPC handles comments on permits from all parties, including the Park Service. At present, the application for an air permit would initiate communication with the Park Service and would be handled through the TDAPC.

## II. Water Effluent Table

- 155,000 lbs./day represents the average BOD entering the Eastman treatment plant, not the permitted effluent BOD. Please make sure the table makes this clear.
- A copy of Eastman's NPDES permit has been included in Appendix III of the EIV. This has all of the needed permit limits. Please let us know if you have difficulty finding the limits or if you did not receive a copy of our NPDES permit.

## III. Solids Table

### Methanol Catalyst

- The catalyst from LPMEOH will be purged once every one or two weeks. The disposal options are in order of preference:
  1. Send the catalyst to a company that could recover the metals.
  2. Incinerate on-site, ash disposal on-site.

Given the widely varying feed to our incineration system and given the small quantity of catalyst to be incinerated, there will be no change in the stack gases from the incineration system. Attached is a diagram that shows the LPMEOH Plant wastes relative to total incinerated materials.

There is no one disposal method for the catalyst from the existing facility. Once the changeout is complete, it is tested to determine whether it is RCRA-hazardous. If it tests as nonhazardous, our options are to send it to a company that could recover the metals or to landfill the material in a nonhazardous landfill. If it tests as RCRA-hazardous, our only option is to landfill in a hazardous landfill. The quantity of catalyst we currently generate varies between 35,000 and 60,000 lbs/yr.



- Incinerator Ash

The incinerator ash will be disposed of in the on-site landfill regardless of whether this project is approved. The table makes it appear that we will have to build an on-site landfill because of this project. Change disposal of incinerator ash for No Action Alternative to on-site landfill (just like the Proposed Action). In addition, since the on-site landfill has nothing to do with this project, why is it even shown on this table?

- Guard Bed Catalyst

Please see answers to questions 7 and 8.

**MATERIAL SAFETY  
DATA SHEET**

BASF Corporation Chemicals Division  
100 Cherry Hill Road, Parsippany, New Jersey 07054, (201) 316-3000

**BASF**

PRODUCT NUMBER: 826931      BASF Catalyst S3-86

**SECTION I**

\*Registered Trademark

TRADE NAME: BASF Catalyst S3-86

CHEMICAL NAME: Copper Oxide Catalyst

SYNONYMS: Low Pressure Methanol  
Synthesis Catalyst

FORMULA: N/A

CHEMICAL FAMILY: Heterogeneous Catalysts

MOL. WGT.: N/A

**SECTION II - INGREDIENTS**

COMPONENT	CAS NO.	%	PEL/TLV - SOURCE
BASF Catalyst S3-86		100	Not established
Contains: Copper Oxide	1317-38-0	61.6	1 mg/m <sup>3</sup> as Cu ACGIH, OSHA (Trans/Final)
Zinc Oxide	1314-13-2	21.6	5 mg/m <sup>3</sup> ; 10 mg/m <sup>3</sup> STEL ACGIH 5 mg/m <sup>3</sup> OSHA (Trans/Final)
Alumina	1344-28-1	4.8	10 mg/m <sup>3</sup> ACGIH 5 mg/m <sup>3</sup> OSHA (Trans/Final)
Water	7732-18-5		
Graphite	7782-42-5		2.5 mg/m <sup>3</sup> ACGIH OSHA Final 20 mppcf OSHA (Trans)
All components are in TSCA inventory. SARA Title III Sect. 313: Listed.			

**SECTION III - PHYSICAL DATA**

BOILING/MELTING POINT @760 mm Hg: N/A

pH: -8.5 (100 g/l water)

VAPOR PRESSURE mm Hg @20 C: N/A

SPECIFIC GRAVITY OR BULK DENSITY: 1300 kg/m<sup>3</sup>

SOLUBILITY IN WATER: 0.1 g/l @ 20 C

Color: Dk. Brown

APPEARANCE 5x5 mm tablets

ODOR: None

INTENSITY: N/A

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT (TEST METHOD): N/A

AUTOIGNITION TEMP: N/A

FLAMMABILITY LIMITS IN AIR (% BY VOL)

LOWER: N/A

UPPER: N/A

EXTINGUISHING  
MEDIUM

Use water fog, alcohol foam or dry chemical extinguishing media.

SPECIAL  
FIREFIGHTING  
PROCEDURES

Firefighters should be equipped with self-contained breathing apparatus and turnout gear.

UNUSUAL FIRE  
AND EXPLOSION  
HAZARDS

None.

**EMERGENCY TELEPHONE NUMBER**

CHEMTREC 800-424-9300

201-316-3000

THIS NUMBER IS AVAILABLE DAYS, NIGHTS, WEEKENDS AND HOLIDAYS

PRODUCT NUMBER: 826931 BASF Catalyst S3-86

## SECTION V - HEALTH DATA

### TOXICOLOGICAL TEST DATA:

BASF Catalyst S3-86  
Rat, Oral LD50  
Rabbit, Skin Irritation  
Rabbit, Eye Irritation

### RESULT:

4650 mg/kg  
Non-irritating  
Moderately irritating

### EFFECTS OF OVEREXPOSURE:

Contact with the powder or its dusts may result in moderate irritation of the eyes and mechanical irritation of the skin. Inhalation of dusts causes respiratory irritation. Chronic overexposure to copper compounds can lead to anemia, and damage to the liver, kidneys, lungs, and spleen. Gamma-alumina, a form of aluminum oxide, was fibrogenic when injected into the lungs of animals; however, aluminum oxide has not been implicated as a cause of lung disease in humans. Inhalation of zinc fumes may cause "metal fume fever". Symptoms of metal fume fever include metallic taste, dryness, and irritation of the throat, difficult breathing, weakness, fatigue, and fever. Thirteen of nineteen workers in a zinc powder factory were reported to exhibit inflammation of the upper respiratory tract after 2-3 years of employment. Ingestion of zinc oxide powder may cause gastric disturbances. Existing medical conditions aggravated by exposure to this material:  
No information found for this mixture.

### FIRST AID PROCEDURES:

Eyes-Immediately wash eyes with running water for 15 minutes.  
If irritation develops, consult a physician.  
Skin-Wash affected areas with soap and water. Remove and launder contaminated clothing before reuse. If irritation develops, consult a physician.  
Ingestion-If swallowed, dilute with water and immediately induce vomiting. Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Get immediate medical attention.  
Inhalation-Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

## SECTION VI - REACTIVITY DATA

STABILITY: Stable.  
CONDITIONS TO AVOID: N/A

CHEMICAL INCOMPATIBILITY: N/A

HAZARDOUS DECOMPOSITION PRODUCTS: N/A

HAZARDOUS POLYMERIZATION: Does not occur  
CONDITIONS TO AVOID: N/A

CORROSIVE TO METAL: No

OXIDIZER: No

## SECTION VII - SPECIAL PROTECTION

### RESPIRATORY PROTECTION:

If dusts are generated, wear a NIOSH/MSHA approved dust mask.

EYE PROTECTION: Chemical goggles or side-shield safety glasses.

PROTECTIVE CLOTHING: Gloves and protective clothing as necessary to prevent skin contact.

VENTILATION: Local exhaust required to control to P.E.L.

OTHER: Clean clothing should be worn daily.  
Shower after handling.

PRODUCT NUMBER: 826931      BASF Catalyst S3-86

**SECTION VIII - ENVIRONMENTAL DATA**

**ENVIRONMENTAL TOXICITY DATA:**

None available.

**SPILL AND LEAK PROCEDURES:**

Spills should be contained and placed in suitable containers for disposal.  
This material is not regulated under RCRA or CERCLA ("Superfund").

**HAZARDOUS SUBSTANCE SUPERFUND:** No                      **RQ (lbs):**

**WASTE DISPOSAL METHOD:**

Landfill in a licensed facility.  
Do not discharge into waterways or sewer systems without proper authority.

**HAZARDOUS WASTE 40CFR261:** No                      **HAZARDOUS WASTE NUMBER:**

**CONTAINER DISPOSAL:**

Dispose of in licensed facility.  
Recommend crushing or other means to prevent unauthorized reuse.

**SECTION IX - SHIPPING DATA**

**D.O.T. PROPER SHIPPING NAME (49CFR172.101-102)**

None

**HAZARDOUS SUBSTANCE (49CFR CERCLA LIST)**

No.

**REPORTABLE QUANTITY (RQ)** N/A

**D.O.T. HAZARD CLASSIFICATION (CFR172.101-102)**

**PRIMARY**

None

**SECONDARY**

None

**D.O.T. LABELS REQUIRED (49CFR172.101-102)**

None

**D.O.T. PLACARDS REQUIRED (CFR172.504)**

None

**POISON CONSTITUENT (49CFR172.203(K))**

None

**BILL OF LADING DESCRIPTION**

Chemicals, NOIBN (Not Regulated By D.O.T.)

**CC NO.**              354

**UN/NA CODEN/A**

**DATE PREPARED:**      3 / 31 / 87

**UPDATED:**              7 / 6 / 89

WHILE BASF CORPORATION BELIEVES THE DATA SET FORTH HEREIN ARE ACCURATE AS OF THE DATE HEREOF, BASF CORPORATION MAKES NO WARRANTY WITH RESPECT THERETO AND EXPRESSLY DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. SUCH DATA ARE OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION, AND VERIFICATION.

**SECTION X - PRODUCT LABEL****BASF Catalyst S3-86****WARNING:**

CONTAINS COPPER OXIDE (CAS No.: 1317-38-0); ALUMINA (CAS No.: 1344-28-1); ZINC OXIDE (CAS No.: 1314-13-2).

CONTACT WITH EYES OR SKIN MAY RESULT IN IRRITATION.

INGESTION MAY RESULT IN GASTRIC DISTURBANCES.

INHALATION OF DUSTS MAY IRRITATE THE RESPIRATORY TRACT.

GAMMA ALUMINA, A FORM OF ALUMINUM OXIDE, WAS FIBROGENIC WHEN INJECTED INTO THE LUNGS OF ANIMALS.

CHRONIC OVEREXPOSURE TO COPPER COMPOUNDS CAN LEAD TO ANEMIA AND DAMAGE TO THE LIVER, KIDNEYS, LUNGS AND SPLEEN.

INHALATION OF ZINC OXIDE FUMES MAY CAUSE METAL FUME FEVER, SYMPTOMS OF WHICH INCLUDE METALLIC TASTE, DRYNESS AND IRRITATION OF THE THROAT, DIFFICULTY IN BREATHING, WEAKNESS, FATIGUE AND FEVER.

Avoid contact with eyes, skin or clothing. Avoid breathing dusts.

Use with local exhaust. Wear a NIOSH/MSHA-approved dust respirator, chemical goggles, gloves, coveralls, apron, boots and other protective clothing as necessary to prevent contact. Shower after handling. Clean clothing should be worn daily.

**FIRST AID:**

Eyes-Immediately wash eyes with running water for 15 minutes.

If irritation develops, consult a physician.

Skin-Wash affected areas with soap and water. Remove and launder contaminated clothing before reuse. If irritation develops, consult a physician.

Ingestion-If swallowed, dilute with water and immediately induce vomiting. Never give fluids or induce vomiting if the victim is unconscious or having convulsions. Get immediate medical attention.

Inhalation-Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

**IN CASE OF FIRE:** Use water fog, alcohol foam or dry chemical extinguishing media. Firefighters should be equipped with self-contained breathing apparatus and turnout gear.

**EMPTY CONTAINERS:** All labeled precautions must be observed when handling, storing and transporting empty containers due to product residues. Do not reuse this container unless it is professionally cleaned and reconditioned.

**DISPOSAL:** Spilled material, unused contents and empty containers must be disposed of in accordance with local, state and federal regulations. Refer to our Material Safety Data Sheet for specific disposal instructions.

**IN CASE OF CHEMICAL EMERGENCY:** Call CHEMTREC day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents. 800-424-9300

**ATTENTION:** This product is sold solely for use by industrial institutions.

Refer to our Technical Bulletin and Material Safety Data Sheet regarding safety, usage, applications, hazards, procedures and disposal of this product. Consult your supervisor for additional information.

CAS Nos.: Graphite: 7782-42-5

Made in West Germany

Intermediates and Fine Chemicals

0489

## Methanol Specifications

<u>Product</u>	<u>Product Methanol</u>	<u>Crude Methanol</u>
Properties		
methyl alcohol	99.8% min	80% min
color, pcs	5 max	
specific gravity @ 20/20 C	0.792 - 0.793	
water content	0.2% max	20% max
acidity, as acetic	0.003% max	
reducing substances, KMnO4	30 min @ 15 C	
acetone	30 ppm max	30 ppm max
other alcohols	1000 ppm max	1.0% max
ethanol	200 ppm max	1.0% max
other impurities	500 ppm max	0.1% max
methyl formate	50 ppm max	30 ppm max
alkalinity, as NH <sub>3</sub>	3 ppm max	
oil		1.0% max
formic acid		30 ppm max
non volatiles		0.05% max

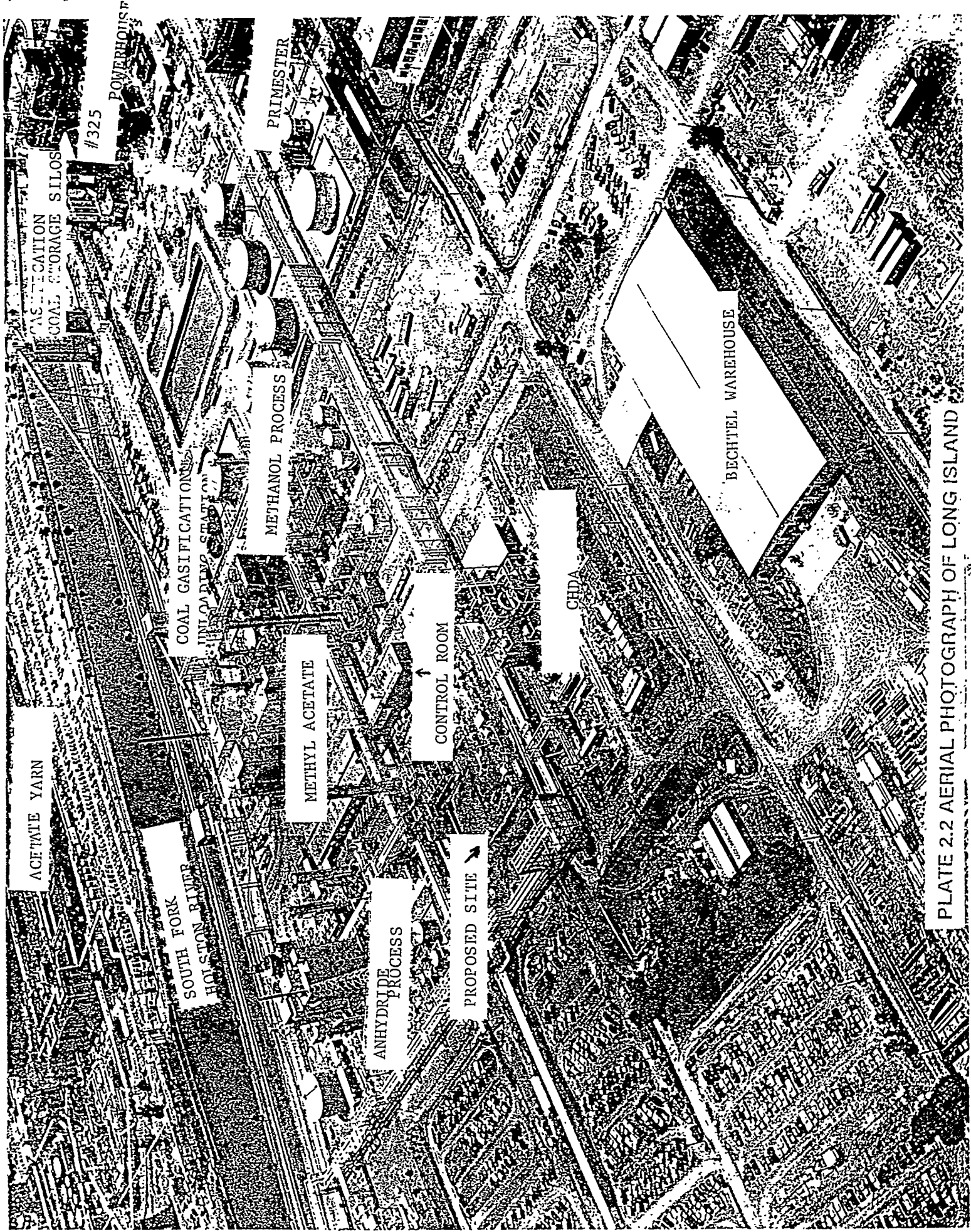
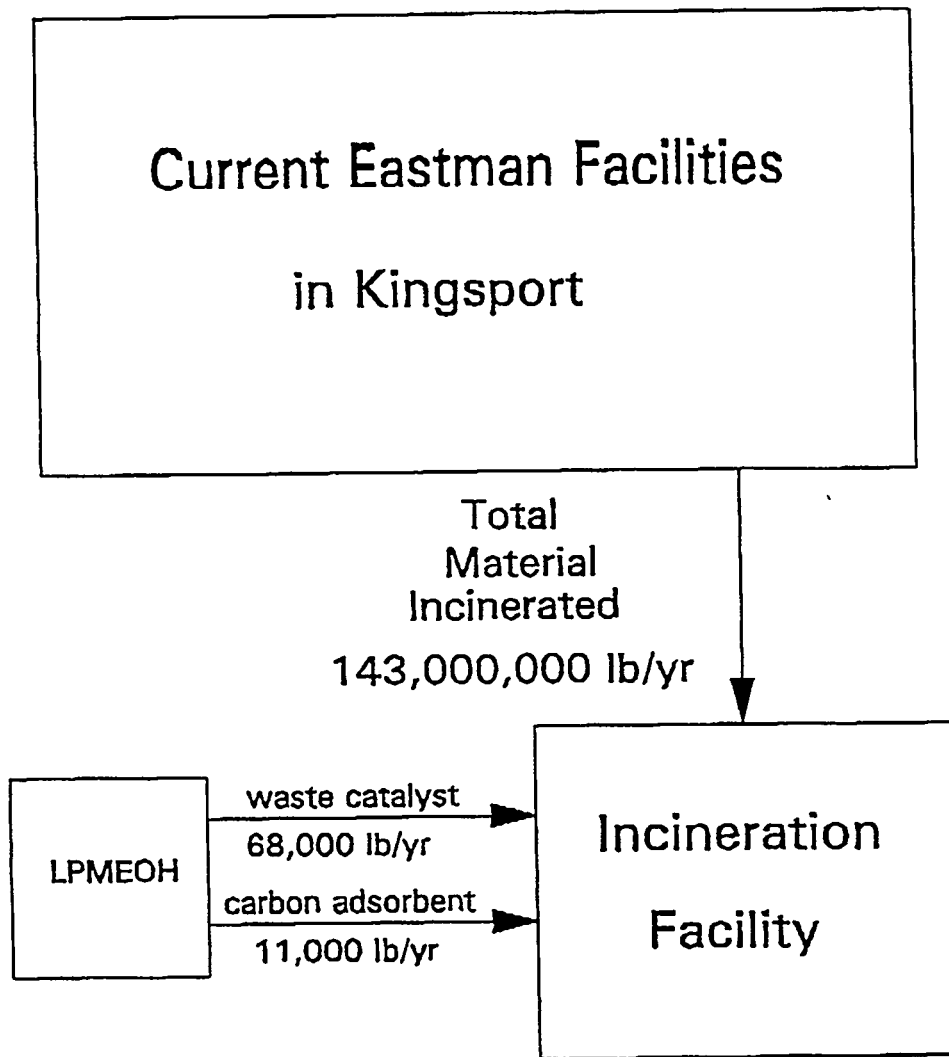
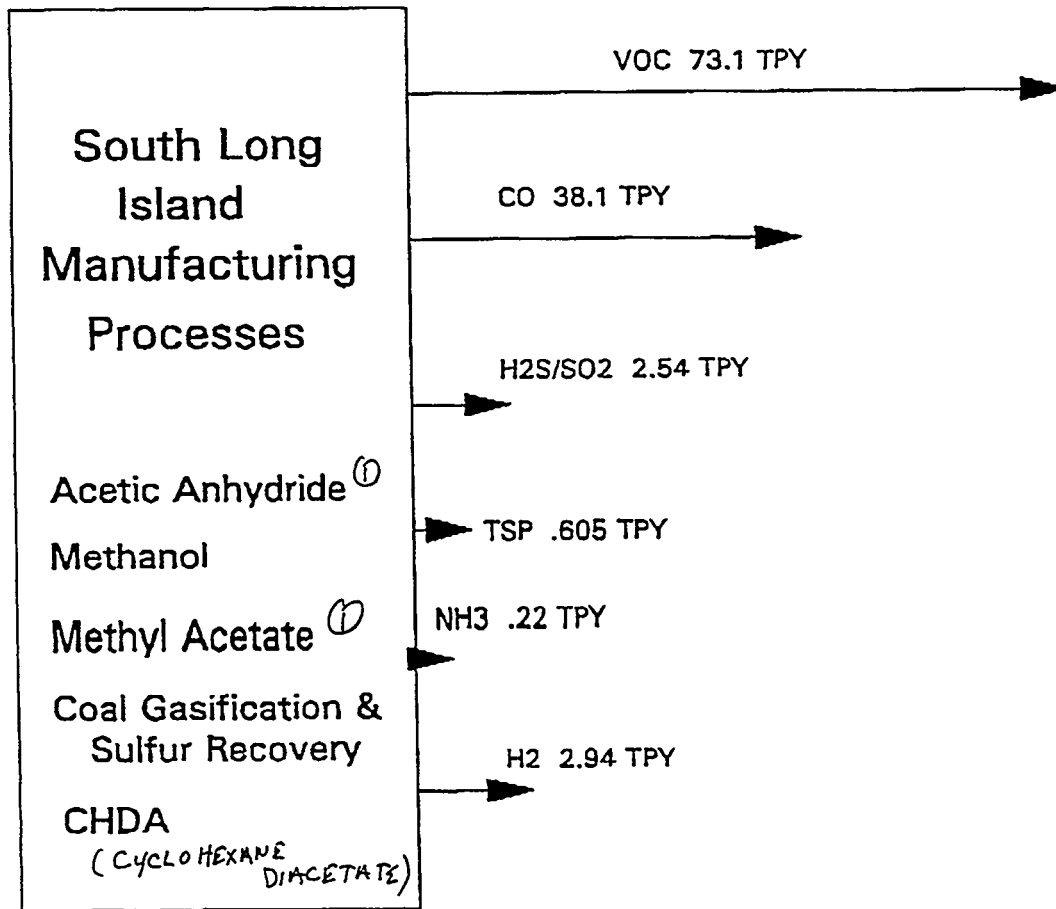
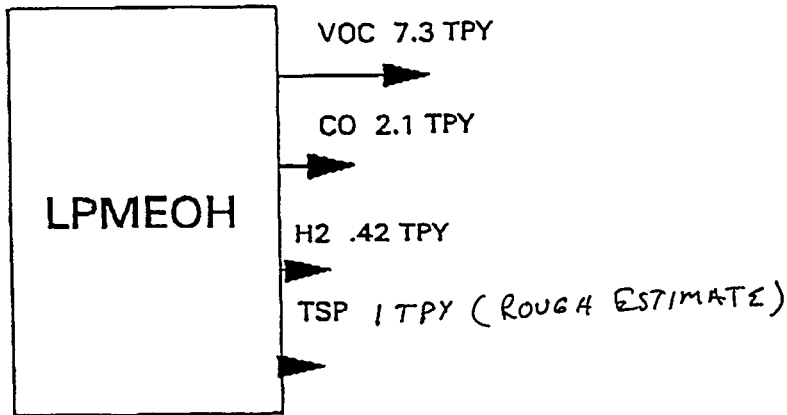


PLATE 2.2 AERIAL PHOTOGRAPH OF LONG ISLAND



### Incinerated Wastes for Current Eastman Facilities and LPMEOH





(1) 2 UNITS

## Equipment Leak and Other Fugitive Emissions Manufacturing Processes - South Long Island

Air Products and Chemicals, Inc.  
7201 Hamilton Boulevard  
Allentown, PA 18195-1501

Telephone (610) 481-4911  
Telex: 847416

25 October 1994



Mrs. Karen M. Khonsari  
U.S. Department of Energy/PETC  
P.O. Box 10940  
Pittsburgh, PA 15236

Subject: Cooperative Agreement DE-FC22-92P90548  
Kingsport Liquid Phase Methanol Demonstration  
**EIV Questions**

Dear Karen:

Attached is a memo from Ryan Vannice providing information on some of the outstanding questions relating to the EIV. His number one item confirms that we should use the information we have to frame the 30 T/D methanol import. The second item relates to the noise question. I hope this is adequate, but please feel free to contact Ryan for clarification.

I am also enclosing a Kingsport "1994 Facts and Figures" document that you might find useful.

Please call if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Frank".

Frank S. Frenduto  
Project Engineer

FSF/jlm  
c:\fsf\let11

Attachment

cc: W. Brown  
L. Daniels (EMN)  
D. Drown  
E. Heydorn  
W. Jones (EMN)  
R. Moore  
R. Vannice (EMN)

## MEMORANDUM

TO: Frank Freduto/David Drown, APCI                      DATE: October 14, 1994

FROM: Ryan Vannice

SUBJECT: Responses to DOE Requests from Sept. 29 EIV Review Meeting

COPIES TO: Jerry Bewley, Larry Daniels, project file, Joe Davis

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Please forward this to Karen Khonsari and/or Mara Dean.

I had two items to check into - other numbers to be used to indicate activity in the plant and any further information on noise issues.

1. An attempt had been made to do a material balance around the Tennessee Eastman facility using numbers from purchasing, accounting, and sales. Based on the results, the accuracy and/or the quantity of data collected was inadequate. This effort took at least 150 hours to put together. Therefore, I recommend that we use the information we have.
2. The next topic we identified was more information on noise. Outside of the OSHA workplace standards, I could find no quantitative regulatory noise limits for industrial sources. Kingsport and the State of Tennessee have regulations which address noise as a "nuisance." In order to constitute a nuisance, by definition, plant noise would have to be offensive to the senses and an interference with the comfortable enjoyment of life and property. To my knowledge, no such determination has been made relative to plant noise from Tennessee Eastman Division.

As far as Eastman and noise complaints, the Chapter 5 section in the EIV on noise does a good job of describing the types of incidents that raise community concerns about noise. I reviewed the records on neighbors' noise concerns and follow-up calls for 1993 and year-to-date 1994. The sources of noise mentioned were associated with isolated incidents such as pressure relief of steam, noise associated with unloading trucks at the non-hazardous landfill, and one incident in which the source was not positively identified but was believed to be a start-up. The last noise concern occurred seven months ago, so it appears that each concern has been addressed.

# EASTMAN IN KINGSPORT

1994 FACTS AND FIGURES  
KINGSPORT, TENNESSEE 37662

Eastman Chemical Company is headquartered in Kingsport, Tennessee, and includes the following:

	<u>Approximate Employment</u>
Arkansas Eastman Division, Batesville, Arkansas	700
Carolina Eastman Division, Columbia, South Carolina	710
Distillation Products Industries, Rochester, New York	160
Eastman Chemical Ectona Limited, Workington/Hartlepool, England	370
Holston Defense Corporation, Kingsport, Tennessee	830
Tennessee Eastman Division, Kingsport, Tennessee	7,780
Texas Eastman Division, Longview, Texas	2,690
Eastman Chemical Company Staff, Administration (Kingsport), Research Laboratories, Technical Service and Development, Business Units, and Business Organizations	3,590
Worldwide Sales (Kingsport)	110
Worldwide Sales (Outside Kingsport)	150
Eastman Chemical Company (International)	480
Total Eastman Chemical Company Employment	17,570
Total Eastman Chemical Company Employment in Kingsport	12,310

## Eastman Chemical Company Facts:

- Eastman Chemical Company manufactures and markets chemicals, fibers, and plastics. Sales in 1993 were \$3.903 billion.
- Based on 1992 sales, ECC is the 10th largest chemical producer in the U.S. (Ranking is based on the May 31, 1993, issue of *Chemical and Engineering News*.)
- Employees holding degrees at Eastman companies in Kingsport
  - About 3,230 hold bachelor's degrees.
  - About 770 hold master's degrees.
  - About 360 hold doctor's degrees.
- Approximately 270 scientists and engineers are in the Eastman Chemical Company Research Laboratories.
- Eastman's Technical Information Center includes five libraries. Those libraries contain more than 45,000 books, 1,100 different periodical titles, 3.5 million U.S. and foreign patents, and about 250,000 technical reports and other proprietary documents.

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*Industry Week* magazine selected Tennessee Eastman Division as one of America's top ten manufacturing plants in 1991.

Eastman won the 1993 Malcolm Baldrige National Quality Award in the manufacturing category and also won the Tennessee Governor's Quality Award.

We believe in listening to our neighbors. If you have concerns or suggestions about our operations call 229-CARE.

**EASTMAN**

Eastman Chemical Company  
Kingsport, Tennessee

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## Tennessee Eastman Division Facts:

- Tennessee Eastman Division is one of the largest chemical manufacturing sites in North America.
- Tennessee Eastman Division manufactures over 300 industrial chemicals, 1 basic fiber, and 3 basic types of plastics.
- Tennessee Eastman Division has approximately 446 buildings and 7,167 acres of land. The 1,046-acre main plant site includes 40.1 acres of warehouse area under roof and more than 1.16 million square feet of office space. The tallest building at TED is Building 325 Powerhouse — 154 feet tall.
- Tennessee Eastman Division purchases over 1,000 separate raw materials.
- At full production, coal usage at Tennessee Eastman Division is 54 carloads (approximately 100-ton loads) or 5,400 tons per day.
- Tennessee Eastman Division operates 5 diesel locomotives over 37 miles of company track and makes approximately 5,000 railcar movements per week.
- Tennessee Eastman Division owns and operates more than 525 motor vehicles, 240 trailers and tankers, and 560 forklifts. There are more than 28 miles of paved roads within the plant area.
- Eastman's installed generating capacity is nearly 170,000 kilowatts — enough to serve approximately 80,000 average homes or about twice the number of homes served by Kingsport Power Company. The stacks on the Building 253 Powerhouse are 250 feet high. The single stack at the Building 325 Powerhouse is 375 feet high.
- At full production Eastman pumps more than 485,000,000 gallons of water each day. Approximately 26,000,000 gallons of filtered water are used daily.
- The Medical Department at Eastman Chemical Company, Kingsport, has a Clinical Services section and an Industrial Hygiene section, staffed by approximately 47 employees, including 5 full-time physicians. Two other physicians work with the company's Health, Safety and Environmental Services Department.

## Historical Facts About Eastman in Kingsport

- Tennessee Eastman Division was established in 1920 to produce methanol for use in Kodak's photographic film base.
- Cellulose esters production began in 1930. Cellulose esters are used in the manufacture of safety film base, TENITE cellulosic plastics, ESTRON and CHROMSPUN acetate yarns, ESTRON filter tow for cigarettes, lacquer formulations, and plastic film and sheeting.
- Hydroquinone production began in 1931. Hydroquinone is an important photographic chemical and is used as an antioxidant.
- Production of TENITE cellulosic plastics began in 1932.
- Production of color photographic chemicals started in 1947. Tennessee Eastman now produces the majority of the color photographic chemicals to meet Eastman Kodak's needs.
- KODEL polyester fiber manufacturing began in 1958.
- TENITE polyester plastic was introduced in 1971.
- Chemicals from coal plant began producing chemicals in 1983. Expansion completed in 1991.
- New hydroquinone plant began production in 1986.
- New wastewater treatment plant opened in 1988.
- In 1991, Eastman formed a joint venture with Rhone-Poulenc to build a cellulose acetate facility in Kingsport.
- Effective January 1, 1994, Eastman was spun off by Eastman Kodak Company and became an independent company.

## Some Recent Environmental Protection Facts:

- Tennessee Eastman Division spent \$103 million in 1993 on environmental protection and improvements.
- Tennessee Eastman Division achieved a 25% reduction in total SARA, Title III (Superfund Amendment and Reauthorization Act) air emissions from 1988 to 1992.
- Tennessee Eastman Division reduced CFC (chlorofluorocarbon) refrigerant emission by 55% since 1989.
- Tennessee Eastman Division has reduced incinerated waste by 46% since 1987.
- During 1993, Tennessee Eastman Division collected over 4.9 million pounds of office paper, cardboard, cellulose and PET recyclables.
- In 1988 Tennessee Eastman Division built an \$85 million wastewater treatment facility which has a 99.5% waste removal efficiency that exceeds all current environmental standards.
- In 1994 Tennessee Eastman Division completed installation of five state-of-the-art precipitators at a cost of \$60 million.

# EASTMAN IN KINGSPORT

A Source of Economic Strength in the Region During 1993

## EASTMAN'S ECONOMIC EFFECT IN TENNESSEE AND THE KINGSPORT AREA\*

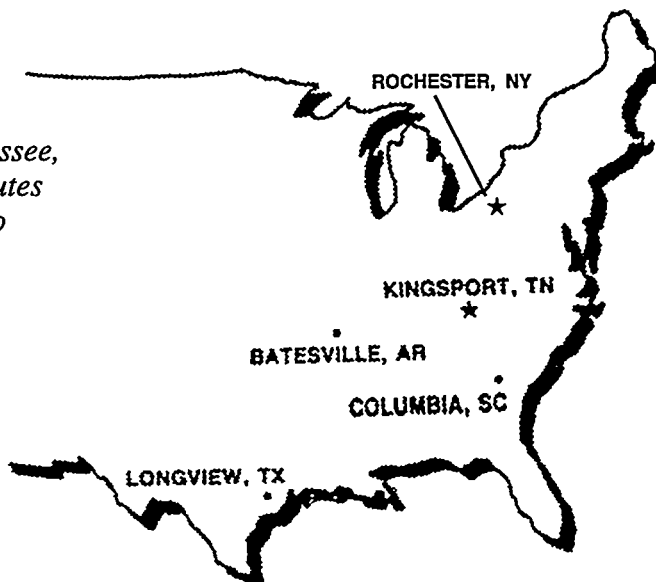
Paid to and for the Benefit of Eastman People Employed in Kingsport .....	\$664,575,000
Freight and Express Paid in Tennessee and the Kingsport Area .....	78,658,000
Materials and Services Purchased from Firms in Tennessee (including coal from Virginia and Kentucky) .....	352,550,000
Taxes Paid in Tennessee (exclusive of Federal Taxes).....	<u>37,544,000</u>
Income Tax .....	\$ 4,826,000
Sales, Use and Property Taxes.. .....	32,385,000
Includes:	
Kingsport.....	\$ 8,083,000
Sullivan County (Excl. Kingsport).....	14,911,000
Hawkins County .....	7,000
Washington County .....	69,000
State of Tennessee .....	9,315,000
State Unemployment.....	234,000
Other Miscellaneous.....	99,000
Total Amount Spent in Tennessee and Kingsport Area .....	<u>\$1,133,327,000</u>

\*Includes Holston Defense Corporation

**EASTMAN CONTRIBUTIONS AND  
EDUCATIONAL AID — 1993**

*Headquartered in Kingsport, Tennessee, Eastman Chemical Company contributes approximately \$2,000,000 annually to communities where it has facilities.*

*About half of that amount has been given to colleges and universities in those areas.*



**CONTRIBUTIONS MADE FROM EASTMAN IN KINGSPORT**

16% → Education.....	\$ 96,235
56% → Health & Human Services.....	326,580
8% → Culture and the Arts .....	46,400
14% → Civic & Community .....	80,575
6% → Other.....	37,575
	\$587,365

**1993 LOCAL CONTRIBUTIONS (Partial Listing)**

American Society of Civil Engineers —  
Holston Branch  
American Legion Girls' State  
American Legion Boys' State  
Appalachian Girl Scouts  
Arts Council of Greater Kingsport  
Bristol Regional Rehabilitation Center  
Bristol Regional Medical Center  
Bristol Chamber of Commerce —  
Holston River Cleanup  
Children's Advocacy Center  
Contact Concern  
Dawn of Hope Development Center  
Downtown Kingsport Association  
East Tennessee Engineering Association  
Council  
First Night

Ford Quillen Scholarship  
Greater Kingsport Family YMCA  
Hands On! Museum  
Holston Mental Health Center — Kingsport  
Sheltered Workshop  
Holston Valley Health Care Foundation  
J. Fred Johnson Memorial Library  
Junior Achievement  
Kingsport Tomorrow  
Kingsport Area CHILDREN  
Kingsport Chamber Foundation  
Kingsport Community Concert Association  
Kingsport Housing Authority  
League of Women Voters/Watauga Region  
Madison House  
Mathcounts Foundation  
Project D.A.R.E.

Rascals Teen Center  
Rocky Mount Historical Society  
Salvation Army Center of Hope  
Scholars Bowl  
Shepherd Center of Kingsport  
Tennessee Special Olympics  
Tennessee Society to Prevent Blindness  
Tennessee Environmental Education  
Association  
*Times-News* Newspapers in Education  
United Way of Greater Kingsport  
United Way of Hawkins County  
Upper East Tennessee Science Fair  
Upper East Tennessee Human Development  
Agency

Air Products and Chemicals, Inc.  
7201 Hamilton Boulevard  
Allentown, PA 18195-1501

Telephone (610) 481-4911  
Telex: 847416

29 November 1994



Mrs. Karen Khonsari  
U.S. Department of Energy  
P.O. Box 10940  
Pittsburgh, PA 15236

Dear Karen:

Here are the answers to the EIV questions you asked yesterday morning.

1. Regarding the "new liquid stream" from the Eastman distillation. I believe you are referring to the stream identified in the EIV as "side drain to incinerator" (Fig. 6.1-2). This stream is mentioned in Paragraph 6.4.2 of the EIV and for the Methanol Case this stream increases by 324,000 lb./yr. above the base Lurgi Case. For the DME Case this stream increases by only 240,000 lb./yr. above the base Lurgi Case. This is described in Section 9.3.2 (DME write-up).
2. There are two mineral oil tanks; one for fresh oil (29D-30) and one for reclaimed oil (29D-31).
3. Yes, the average flow rate of the South Fork of the Houston River is 2290 ft.<sup>3</sup>/sec. The EIV gives the total South Fork flow before it splits is 2610 ft.<sup>3</sup>/sec. (Section 5.3.1.1). The EIV also gives the Big Sluce flow or 320 ft.<sup>3</sup>/sec. (Section 5.3.2.1). The difference, 2290 ft.<sup>3</sup>/sec., is the flow in the channel where Eastman's outfall is located.
4. The 68,000 #/yr. of catalyst/oil mixture going to the incinerator is in addition to the Lurgi catalyst which is disposed of by either landfill or is sent to a recycler for metals recovery. (See letter to K. Khonsari/M. Dean, dated 9 September 1994, page 6 of attachment.)
5. Using a nominal 6000 gallon tank truck load, 400,000 gallon represents 67 tank trucks. Methanol is 303 gal/short ton; 30 T/D is 9090 gallon and represents approximately 1.5 tank trucks/day.

Please call if you have any further questions or comments.

Very truly yours,

*Frank S. Frenduto, jfs*

Frank S. Frenduto  
Project Engineer

c:\let16

cc: W. Brown/A12B2  
D. Drown/A12B2  
L. Paulonis/EMN (fax)  
R. Vannice/EMN (fax)



7 February 1995

Mrs. Karen M. Khonsari  
U.S. Department of Energy/PETC  
P.O. Box 10940  
Pittsburgh, PA 15236

Dear Karen:

Here are the comments I've collected on the draft EA.

Page 5, Paragraph 1

Construction start has slipped from June 1995 to August 1995.

Page 7, Operational Related Impacts

You state that the magnitude of the emission rate is <10%. Should state <10% of the existing South Long Island rates.

Page 13, Visual Resources

The reactor is now 84 feet tall and the distillation columns are 82 and 97 feet tall respectively.

Appendix A, Figure A-1

A revised Figure A-1 is attached.

If you have any questions, please call.

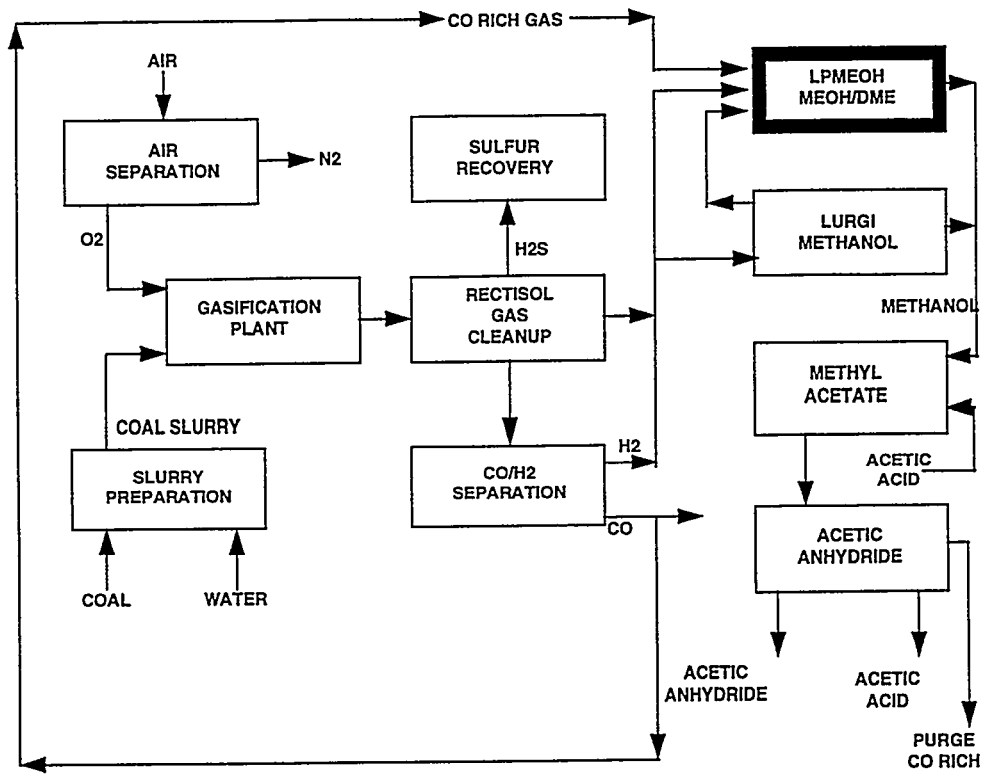
Very truly yours,



Frank S. Frenduto  
Project Engineer

fsf\let21

cc: W. Brown/A12B2  
D. Drown/A12B2  
L. Paulonis/EMN  
R. Vannice/EMN



**FIGURE A-1**  
**INTEGRATION OF LPMEOH™ PLANT**  
**INTO EASTMAN KINGSFORT PLANT**

Air Products and Chemicals, Inc.  
7201 Hamilton Boulevard  
Allentown, PA 18195-1501  
Telephone (215) 481-4911  
Telex: 847416



6 March 1995

Mrs. Karen M. Khonsari  
U.S. Department of Energy/PETC  
P.O. Box 10940  
Pittsburgh, Pennsylvania 15236

Dear Karen:

Attached are the updated answers to the questions regarding the Kingsport EA (your fax of 2/14/95).

In response to your question about when Eastman was going to make a public disclosure of this project, Bill Brown informs me that Air Products and Eastman have a joint news release that is set to go out as soon as the Continuation Agreement is formalized. Bob Kornosky has a copy of this news release.

Attached is the news release associated with the Air Permit Application. If you have any additional questions, please call.

Regards,

A handwritten signature in black ink, appearing to read "Frank".

Frank S. Frenduto  
Project Engineer

fsf\let23  
Attachment

cc: W. Brown/A12B2  
D. Drown/A12B2  
W. Jones/EMN  
R. Kornosky/PETC  
L. Paulonis/EMN  
R. Vannice/EMN

General Q4

Q.(1) It is unclear how 10-24%...input the NAAQS standard for ozone.

A. The 7.3 TPY (or 17.8 TPY in the DME Case) is about 10 to 24% of the South Long Island VOC emissions of 73.1 TPY. The VOC emissions for the Kingsport site were 14,600 TPY (1992). Therefore when compared to the Kingsport site, this project would represent an increase of only 0.1%.

Q.(2) The impact of the water...due to lack of information regarding the constraints of the wastewater.

A. The Kingsport "state-of-the-art" WWT Facility has a capacity of 25KK gal./D. This project increases the present load of about 23KK gal./D by 1.15K gal./D an increase of less than 0.01%. The facility will have no trouble meeting its operating NPDES Permit requirements. The chemicals which are measured are shown in the operating permit in Appendix III of the EIV.

Page 3 Q3

Q. During the initial scoping, was a meeting held with interested federal and state agencies to gain their input?

A. The following agencies were contacted for their input:

Tennessee State Historical Commission  
U.S. Fish and Wildlife Service  
Tennessee Department of Environmental and Conservation  
Sullivan County Highway Department  
Tennessee Division of Air Pollution Control

Page 5 Q5

Q. Under the changes...it's not clear why +68 TPD of MEOH would be purchased/bought daily with DME co-production.

A. Figure 9.2-2 in the EIV shows a comparison of the material balances for the methanol and the DME demonstration cases. The conditions were set by producing a raw methanol stream containing approximately 8 wt.% DME which was a target set in the joint objectives for the demonstration.

Page 7 Q4

Q. Will there be any mitigation measures taken during construction to reduce fugitive emissions?

A. See section 6.1.3 (pg. 6-4) of the EIV.

Page 8 Q6

- Q. If it is decided to use DME as an alternative fuel on-site, what air quality impacts are anticipated and are the emissions included in Table 3-1?
- A. The air quality impacts are addressed in section 9.3.1.1 of the EIV. Burning DME, which like methanol is a clean fuel, has the net effect of reducing the amount of coal that would have been burned in the boiler. Replacing coal with DME would have a benefit that has not been quantified.

Page 8-9 Q1

- Q. Regarding landfill size...
- A. 1. Hazardous waste landfill - 39.1 acre ft. (63,100 cubic yards); expected life approximately 17 years.
2. Non-hazardous waste landfill remaining life as of September 1994 - 1123 acre ft. (1,810,000 cubic yards); expected remaining life approximately 10 years.

Page 9 Q3

- Q. Is the 2290 cubic feet per second the average or the low flow rate?
- A. It is average; the low flow rate is 750 cubic feet per second.

Page 10 Q4

- Q. Have the thermal impact to the water resources due to waste water discharge been considered?
- A. The thermal impact to water is minimal. The heat rejected goes mainly to the air since we have cooling water from a cooling tower. In addition, some of the load is managed by direct air cooling (Fin/Fan Coolers).

Page 10 Q5&6

- Q. Relating to the WWT Facility.
- A. Suggest you include discussion of Eastman WWTF in the EA. Some good text can be found in the 1993 Health Safety and Environmental Performance Report in Appendix VI of the EIV (pg. 13).

Page 10 Q8

- Q. There is not mention of ground water resources...
- A. The landfills are or will be operated within their permits. The permits contain provisions for ground water monitoring.

Page 10 Q9

- Q. Will there be any additional chemicals...

A. No.

Page 11 Q2

Q. It is clear that the liquid waste streams are to be incinerated on-site...

A. The LPMEOH addition can be operated within the current permits for the incinerator, boilers, landfill and within the NPDES requirements for all water discharges.

F001  
2/17/95

*CJA*  
*This was in the*  
*12/*

*Page 101*

*Wednesday 12/28/94*  
*Kingsport; Times News*

**PUBLIC NOTICE**

The Tennessee Air Pollution Control Division (TAPCD) has received requests for construction of air-contaminant sources as noted below. The proposed construction is subject to part 1200-3-8-.01 (1)(h) of the Tennessee Air Pollution Control Regulations, which requires a public notification and 30-day public comment period. Interested parties may express their comments and concerns in writing to Mr. John W. Walton, Director, Air Pollution Control Division, 8th Floor, L&C Annex, 401 Church Street, Nashville, TN 37243-1531 within thirty (30) days of the date of this notice. Questions concerning a source may be addressed to the assigned Division personnel at the same address or by calling 615-532-0554.

Individuals with disabilities who wish to participate should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such participation. Such contact may be in person, by writing, telephone, or other means, and should be made no less than ten days prior to the end of the thirty (30) day public comment period to allow time to provide such aid or service. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, 21st Floor, 401 Church St., Nashville TN 37248, (615) 532-0103. Hearing impaired callers may use the Tennessee Relay Service (1-800-848-0298).

<u>Applicant</u>	<u>Source Description and Location</u>	<u>Division Personnel</u>
Exide Corp. / Speed Clp. Div.	Casting Machine, Electric Melting Furnace, Die Casting Operation, and Two (2) Gas Pots 8 Boswell Drive, Bristol 37620	O. Aisien
King Pharmaceuticals, Inc.	94-1 Granulation equipment 501 Fifth Street, Bristol 37620	O. Aisien
Eastman Chemical Company	B-486-1 Production of Methanol & Dimethyl Ether South Eastman Road, Kingsport 37662	G. Achanta