ARKANSAS DEPARTMENT OF
POLLUTION CONTROL AND ECOLOGY

MINUTE ORDER NUMBER 83-03

LOCATION - SUBJECT: PERMITS BRANCH

AIR SECTION

The Commission, having considered the following Application for permits submitted by the following respective firms and having reviewed the staff recommendations and the Summary Reports attached hereto, does hereby approve said Applications subject to the conditions contained with the Applications, Summary Reports, or amendments thereto, and Subsection 4(d) of the Arkansas Plan of Implementation; provided, however, that the applicant is hereby ordered and directed to comply with all general terms of the permit and all special terms and conditions to the permit, if any, which are so specified.

APPLICATION FOR PERMIT - INDUSTRIAL FACILITIES

PERMIT NO.	FACILITY & LOCATION	COST
362-AI	American Surgery Center Little Rock	N/A
363-AI	Newport Hospital and Clinic Newport	N/A
364-AI	Price Choppers Supermarket (Town and Country Super Markets, Inc.) Pine Bluff	10,000
365-AI	St. Vincent Infirmary Little Rock, Arkansas	10,000
554-AR-1	Dow Chemical U.S.A. Magnolia	N/A
697-A	Deltic Farm and Timber Co., Inc. Waldo (Columbia County)	680,000
698-A	Firestone Industrial Products Company Prescott	33,000,000
699-A	FlexSteel Industries, Inc. Harrison (Boone County)	818,000
PSD-AR-700	ETSI Pipeline Project, A Joint Venture Independence County near Newark	98,400,000
701-A	Great Lakes Chemical Corporation (South Plant) El Dorado	10,000,000

COMMIS-
SIONERS

John P. Lattimer
Chairman

SUBMITTED BY John D. Ward DATE PASSED 1-28-83

ARKANSAS DEPARTMENT OF
POLLUTION CONTROL AND ECOLOGY

LOCATION - SUBJECT: PERMITS BRANCH

AIR PERMITS

MINUTE ORDER NUMBER 83-

APPLICATION FOR PERMIT - INDUSTRIAL FACILITIES

PERMIT NO.	FACILITY & LOCATION	COST
702-A	Guthrie Cotton Oil Company Van Buren, Arkansas	1,700,000
703-A	Georgia Pacific Corporation El Dorado	1,200,000
PSD-AR-704	Endevco Garland (Miller County)	N/A
PSD-AR-705	ETSI Pipeline Project, A Joint Venture Jefferson County near Redfield (White Bluff)	94,500,000

The Summary Report, prepared by the staff, is designed to facilitate the administration of the air pollution control program for the State of Arkansas, and, otherwise, for the convenience of the Commission and other interested persons. Copies of the Minute Order, the Permit, and the Summary Report, are to be attached to the application for Permit which is on file in the Department's central office. It is further noted that the approval of this application is based upon information contained within the Application for Permit - not the Summary Report. Nevertheless, the applicant is expected to forthwith notify the Department of any discrepancies found between the two documents.

COMMIS-
SIONERS

John P. Layton
Chairman

SUBMITTED BY John D. Ward DATE PASSED 1-28-83

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY American Surgery Center

Little Rock

CSN 600657 CASE REFERENCES

FIRST SUBMITTAL 11/5/82 AMENDED 11/10/82

SUMMARY:

The American Surgery Center of Little Rock proposes to install a Spronz model RL-10-P pathological incinerator. It will emit no more than 0.0127 grains of particulate per dry standard cubic foot (0.05 pounds per hour) when corrected to 12 percent CO2.

ESTIMATED COST: $ N/A TOTAL PROJECT: $ N/A

COMMENCEMENT OF INSTALLATION 1/83 COMMENCEMENT OF OPERATION 3/83

RECOMMENDATION Approval ASSIGNED PERMIT NUMBER 362-AI

AIR CODE X SIP PSD NSPS NESHAPS

REVIEWED BY MAP APPROVED BY JDW APPROVAL DATE 1/28/83

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY Newport Hospital & Clinic

Newport

CSN 340076 CASE REFERENCES

FIRST SUBMITTAL 12/16/82 AMENDED

SUMMARY:

Newport Hospital & Clinic proposes the installation of a Consumat Model C-75P incinerator to consume approximately 2000 pounds of waste per day generated in the hospital. The allowable particulate emission rate is 0.15 grains per dry standard cubic foot when corrected to 12 percent CO.

ESTIMATED COST: $ N/A TOTAL PROJECT: $ 12,500

COMMENCEMENT OF INSTALLATION Upon Approval COMMENCEMENT OF OPERATION

RECOMMENDATION Approval ASSIGNED PERMIT NUMBER 363-AI

AIR CODE X SIP PSD NSPS NESHAPS

REVIEWED BY CDH APPROVED BY JDW APPROVAL DATE 1/28/83

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY Price Choppers Supermarket (Town & Country Super Markets, Inc.)
Pine Bluff, Arkansas

CSN 350194 CASE REFERENCES

FIRST SUBMITTAL 1/11/83 AMENDED

SUMMARY:

Price Choppers Supermarket in Pine Bluff proposes the installation of an Atlas Model VM-54 incinerator to consume approximately 200 pounds per hour of waste. The allowable emission rate is 0.1 grains per dry standard cubic foot when corrected to 12 percent carbon dioxide without the contribution of auxiliary fuel.

ESTIMATED COST: $ N/A TOTAL PROJECT: $10,000

COMMENCEMENT OF INSTALLATION COMMENCEMENT OF OPERATION

RECOMMENDATION Approval ASSIGNED PERMIT NUMBER 364-AI

AIR CODE X SIP PSD NSPS NESHAPS

REVIEWED BY CDH APPROVED BY JDW APPROVAL DATE 1/28/83

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY St. Vincent Infirmary
Little Rock, Arkansas

CSN 600116 CASE REFERENCES

FIRST SUBMITTAL 1/6/83 AMENDED

SUMMARY:

St. Vincent Infirmary proposes the installation of a Shenandoah Model G-HWM/ITCAN incinerator to dispose of approximately 150 pounds per week of pathological waste. The allowable particulate emission rate is 0.1 grains per dry standard cubic foot when corrected to 12 percent carbon dioxide without the contribution of auxiliary fuel. The incinerator shall only be operated when the temperature in the secondary chamber is 1350 degrees Fahrenheit or higher.

ESTIMATED COST: $ N/A TOTAL PROJECT: $ 10,000

COMMENCEMENT OF INSTALLATION COMMENCEMENT OF OPERATION

RECOMMENDATION Approval ASSIGNED PERMIT NUMBER 365-AI

AIR CODE X SIP PSD NSPS NESHAPS

REVIEWED BY CDH APPROVED BY JDW APPROVAL DATE 1/28/83

Arkansas Department of Pollution Control and Ecology
Division of Air Pollution Control

Summary Report Relative to Permit Application

Submitted By: Dow Chemical U.S.A.
Magnolia

CSN: 140011
First Submittal: 12-10-82

SUMMARY: Permit No. 554-A was issued on May 25, 1979 to Dow at Magnolia for the installation of a facility to manufacture calcium bromide. Completion of construction has been somewhat delayed. Additionally, there have been minor modifications in the design. Therefore, Permit No. 554-A is hereby being reissued.

Allowable Emission Rates

SN		Pollutant	Pounds/Hour
80	Scrubber	PT	0.2
81	Scrubber	PT	0.2
82	Scrubber	Br	1.2
		NH3	3.0
83	Scrubber	PT	0.2

Estimated Cost: Total Project:
Installation: Operation: March, 1985
Recommendation: Approval Permit Number: 554-AR-1
Code * SIP *
Reviewed By: CDH Approved by: JDW Date Approved: 1-28-83

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY Deltic Farm and Timber Co., Inc.

Waldo (Columbia County)

CSN 140037 CASE REFERENCES

FIRST SUBMITTAL 11/15/82 AMENDED

SUMMARY:

Deltic Farm and Timber proposes to install one waste wood fuel burner to supply heat for two direct fired dry kilns. The kilns are currently heated by natural gas. A silo will meter fuel to the primary combustion chamber which operates in a'starved air' environment. The unburnt particles and combustible gases rise to a secondary chamber where they are mixed with excess air and completely burned. The hot gases (air) then go to the kilns through a series of duct work, mixing chambers, and baffles. After several passes through the kiln the gases are vented to the atmosphere. It is estimated that no significant increase in emissions of any pollutant will result from the installation of this equipment.

ESTIMATED COST: $ N/A TOTAL PROJECT: $ 680,000

COMMENCEMENT OF INSTALLATION 1/83 COMMENCEMENT OF OPERATION 4/83

RECOMMENDATION Approval ASSIGNED PERMIT NUMBER 697-A

AIR CODE X SIP PSD NSPS NESHAPS

REVIEWED BY MAP APPROVED BY JDW APPROVAL DATE 1-28-83

Arkansas Department of Pollution Control and Ecology
Division of Air Pollution Control

Summary Report Relative to Permit Application

Submitted By: Firestone Industrial Products Company
Prescott

CSN: 500002
First Submittal: 11-30-82

SUMMARY: Firestone currently operates a facility in Prescott which produces rubber hoses for automotive and railroad use. Firestone proposes process modifications such that flat sheets of rubber will be manufactured for use as roofing material. Any emission increase which could occur is expected to be minor.

Estimated Cost: $300,000 Total Project: $33,000,000
Installation: Jan., 1983 Operation: Oct., 1983
Recommendation: Approval Permit Number: 698-A
Code * SIP *
Reviewed By: CDH Approved by: JDW Approved: 1-29-83

Firestone Industrial Products
Prescott
Permit No. 698-A
January 28, 1983

ALLOWABLE EMISSION RATES

SN	Process	Pollutant	pounds/hour
1A	Carbon Black Storage	PT	Ø.4
1B	Carbon Black Storage	PT	Ø.4
2A	Pigment Blender	PT	Ø.1
2B	Pigment Blender	PT	Ø.1
3	Mixer (Inlet)	PT	1.7
4	Mixer (Outlet)	PT	1.7
5	Assembly Machine	HC	16.1
6	Dusting Agent Storage	PT	Ø.8
7	Duster	PT	Ø.8
8	Autoclaves	HC	3.1
9	Slab Mill	HC	Ø.4
		PT	Ø.2
1Ø	Strainer Mill	HC	Ø.2
		PT	Ø.1
11	Breakdown Mill	HC	Ø.2
		PT	Ø.1
12	Strainer	HC	Ø.2
		PT	Ø.1
13	Feed Mill	HC	Ø.2
		PT	Ø.1
14	Calender	HC	Ø.2
		PT	Ø.1
15	Dope Mixer	PT	Ø.1
		HC	Ø.2
16	Boiler (Fuel Oil)	PT	4.9
		SO2	57.Ø
		HC	Ø.2
17A	Carbon Black Transfer	PT	1.Ø
17B	Carbon Black Transfer	PT	1.Ø
18	Carbon Surge Bin	PT	1.Ø
19	Solvent Storage	HC	Ø.3
2Ø1	Carbon Black Storage	PT	1.Ø
2Ø2	Pigment Blender	PT	Ø.1
2Ø3	Mixer (Inlet)	PT	Ø.5
2Ø4	Mixer (Outlet)	PT	Ø.5
2Ø5	Drop Mills	HC	1.1
		PT	Ø.53
2Ø6	Breakdown Mill	HC	Ø.53
		PT	Ø.27
2Ø7	Feed Mill	HC	Ø.53
		PT	Ø.27

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY FlexSteel Industries, Inc.

Harrison, Boone County

CSN 050059 CASE REFERENCES

FIRST SUBMITTAL 12/15/82 AMENDED

SUMMARY:

FlexSteel Industries of Harrison proposes to construct a wood fired cogeneration project. The facility generates 1.2 tons per hour of dry wood but the boiler will be capable of burning 2.0 tons per hour. Thus, additional wood waste will have to be secured from outside sources or form an expansion of the furniture operation in order to reach full production. When burning 1.2 tons of wood per hour the boiler will generate 12,250 pounds of steam per hour. This steam will generate 375 Kw of electricity and then be used to heat the drying kilns and, in the winter, for space heating.

Emissions will be controlled by a high-efficiency, induced draft, cyclone. When 1.2 tons of wood per hour are being burned the allowable emission rate will be 3.0 pounds per hour. At the maximum firing rate of 2.0 tons per hour the allowable emission rate will be 4.5 pounds per hour. The opacity limit will be 20%.

CONDITIONS

FlexSteel will conduct an EPA Method 5 stack test no later then 180 days after start-up. The burn rate at the time of the test will become the maximum allowable burn rate. If, at some later date, FlexSteel wishes to increase their allowable burn rate they will be required to conduct an additional test at this higher rate.

ESTIMATED COST: $ 5,000 TOTAL PROJECT: $ 818,000

COMMENCEMENT OF INSTALLATION 4/83 COMMENCEMENT OF OPERATION 9/83

RECOMMENDATION Approval ASSIGNED PERMIT NUMBER 699-A

AIR CODE X SIP PSD NSPS NESHAPS

REVIEWED BY MAP APPROVED BY JDW APPROVAL DATE 1/28/83

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY ETSI Pipeline Project, A Joint Venture (ETSI)

Independence County near Newark

CSN 320076 CASE REFERENCES

FIRST SUBMITTAL 8/16/82 AMENDED 11/3/82

SUMMARY:

ETSI Pipeline Project, A Joint Venture (ETSI) proposes to build and operate a coal slurry pipeline to transport coal from the Powder River Basin area in Wyoming to six dewatering terminals in Arkansas and Oklahoma. The ETSI Independence Dewatering Plant will be located on the site of Arkansas Power and Light's Independence Generating Station.

The dewatering plant is designed to handle 15,900 tons of coal per day. The process will consist of centrifuges, filters, and thermal dryers. The incoming coal slurry will pass through a series of heat exchangers and then to the centrifuges. The centrifuge cake will be sent to the vibrating bed dryers. When the coal comes out of the dryers it will have been reduced to the moisture content required. Centrate from the centrifuges is sent to a double belt filter press; the filter cake is then mixed with centrifuge cake at the dryer inlet. Process steam will be supplied by a coal fired boiler rated at 498 million Btu's per hour input. At rated capacity the boiler will burn approximately 31 tons of coal per hour.

The facility will have the potential to emit over 100 tons per year of sulfur dioxide, nitrogen oxides, and particulate; thus, the rules of Prevention of Significant Deterioration (PSD) will apply. A full PSD review was done for those pollutants listed above along with carbon monoxide, for which the potential emissions exceed the de minimis rate. Furthermore,the boiler and the dryers will be subject to Subpart D and Subpart Y of the New Source Perforance Standards respectively.

ESTIMATED COST $ 4,100,000 TOTAL PROJECT $ 98,400,000

INSTALLATION May 1984 OPERATION November 1985

RECOMMENDATION **Approval / with conditions** ASSIGNED PERMIT NUMBER 700-A

AIR CODE X SIP X PSD X NSPS X NESHAPS

REVIEWED BY MAP/CDH APPROVED BY JDW DATE APPROVED 1/28/83

CONDITIONS OF APPROVAL

1. Installation and operation of the boiler and vibrating bed dryer shall be in full compliance with the New Source Performance Standards contained in 40 CFR 60 Subpart D and Subpart Y respectively.

2. The emission limit for the coal dryers will be 0.01 grains of particulate matter per dry standard cubic foot; the opacity shall not exceed 20%.

3. The emission limit for the boiler shall be 0.10 pounds of particulate matter per million Btu's of heat input; the opacity limit shall be 20%. The sulfur dioxide limit shall be 1.2 pounds per million Btu's heat input. The limit for nitrogen oxides shall be 0.7 pounds per million Btu's of heat input.

4. The opacity limit on the coal bin baghouses, flyash silo baghouses, coal silo baghouses, coal feeder baghouses, and transfer towers will be no visible emissions. Demonstration of compliance with the opacity limit will be presumed to represent compliance with the mass emission limit. Demonstration of violation of the opacity limit will be presumed to represent violation of the mass emission limit.

5. The only permitted emission points are those listed in conditions 2, 3, and 4. No others will be allowed.

6. The procurement specifications and the proposals of the selected vendor(s) for the boiler, dryers, baghouses, scrubbers, and coal handling equipment shall be submitted to the Department for review as soon as said proposals or specifications are available.

7. Prior to the operation of the facility, ETSI will submit to the Department for approval a plan demonstrating to the Department that the continuous monitors are located in areas of accessibility and where a representative sample with no interference may be taken. This plan shall also include a diagram outlining the location of the monitors. ETSI shall also submit an overview of the continuous mointoring system including a flow diagram, type of monitors being used (i.e. in-situ or extractive) proposed maintenance program, and proposed alternate methods to be used during periods when monitors are not operating. If an extractive monitor is used then a detailed explanation of the conditioning system shall be presented.

8. ETSI will submit to the Department a detailed boiler start up procedure as soon as it is available but before initial operation.

9. If excessive fugitive emissions are observed, and ETSI is so notified by the Director or his authorized representative, the facility will cease receiving coal until such time as ETSI can demonstrate that the emissions have been stopped and can be reasonably expected not to recur.

1Ø. The efficiency of the dryer scrubbers shall be 99.5%. Should the scrubbers not meet this efficiency during the performance tests or should the opacity exceed 2Ø%, operation of the dryers shall cease until such time that the scrubber and/or supporting equipment have been modified and testing indicates to the Department's satisfaction that the 99.5% efficiency is being achieved or the emission limit set forth in Condition 2 in being met.

Best Available Control Technology

Any source subject to PSD must apply Best Available Control Technology (BACT) to control each pollutant emitted over the de minimis level. BACT is to be determined on a case by case basis taking into account the amount of control, economic cost, energy cost, and reliability of the various control strategies. When performing a BACT analysis, an applicant should propose a base case and then examine alternative systems that would achieve a higher degree of emission control.

The ETSI plant will have twenty five sources of particulate emissions. They are:

Vibrating bed dryers	(5 stacks, 9 dryers)
Coal fired boiler	(one)
Ash bin	(two)
Coal bin	(two)
Coal silos	(four)
Coal feeder	(four)
Transfer towers	(two)
Sampling tower	(one)

As BACT, ETSI proposes to use wet scrubbers at 99.5% efficiency to control the vibrating bed dryers and fabric filters (baghouses) at 99.9% efficiency to control all other emssion points. In the cases where baghouses are proposed, no other system would achieve a higher degree of control than the ones ETSI has proposed; thus, in these cases the proposed strategy to control particulate emissions has been determined to be BACT. Baghouses are unsuitable for controlling emissions from coal dryers. The high moisture content of the gas will cause blinding of the filtration surface when the filter temperature is below the dew point (ie. start up) and the hot gases in contact with fine coal will create a significant explosion potential. Scrubbers, on the other hand, are insensitive to moisture and the explosion hazard is greatly reduced. ETSI has proposed an outlet grain loading of Ø.Ø1 grains per dry standard cubic foot (gr/DSCF); this is more than three times lower than the New Source Performance Standard of Ø.Ø31 gr/DSCF. Thus, the use of wet scrubbers at 99.5% efficiency has been determined to satisfy BACT for control of particulate emitted from the vibrating bed dryers.

Sulfur dioxide will be emitted from the coal fired boiler. ETSI has proposed as the base case to burn low sulfur coal, less than 1.2 pounds of sulfur per million Btu, which the pipeline will be handling. Since a Flue Gas Desulfurization (FGD) system would reduce the total amount of SO2 emitted, ETSI examined this control strategy as part of their BACT analysis. A FGD system would cost

about five million dollars to build and two million dollars a year to operate (see application for exact amounts) and would remove 1,215 tons of sulfur dioxide per year. The total cost of FGD would be $2,390 per ton of sulfur removed. Also, stack gases have a lower exit tempeature when a FGD system is used. The lower temperature causes poorer dispersion, which results in ground-level concentrations which are not directly proportional to the amount of sulfur removed. In fact, a 70 percent reduction in SO2 emissions results in a 26 percent reduction in ground level concentration. It is common practice to burn relatively high sulfur--and low cost--coal when a FGD system is used; however, ETSI intends, of course, to burn the low sulfur coal which they will be dewatering. They do not intend to install any facilties to unload coal by rail; ETSI is, in a sense, 'locked in' to the coal they are to burn. Therefore, use of FGD would, in effect, result in the use of two control techniques to control SO2. For the reasons stated above, the use of low sulfur coal has been determined to satisfy BACT for SO2.

Oxides of Nitrogen (NOx) are formed as products of combustion in a boiler. As such, they are controlled through combustion techniques. ETSI proposes to use staged combustion and low excess air to control NOx. As further control, ETSI will conduct compliance testing for NOx and if the emissions are not less than 0.5 pounds of NOx per million Btu's of heat input, a continuous NOx monitor will be installed. No other control technique for NOx has been sucessfully demonstrated; therefore, ETSI's proposal for NOx control has been judged to satisfy BACT.

Carbon Monoxide (CO) is a product of incomplete combustion. One technique to improve combustion is to feed excess air to the boiler; however, too much excess air aids in the formation of NOx and increases the heat load on the boiler. Thus, the simultaneous control of NOx and CO require a certain amount of "give and take". During the performance test, ETSI will develop operating procedures which lead to good combustion. These procedures will be followed throughout the life of the boiler. The development and maintenance of good combustion has been determined to satisfy BACT for CO.

Table I
Emission Rate Sumary

Maximum Short Term Emission Rates (lb/hr)

Emission Source	TSP	SO2	NOx	CO
Coal Fired Boiler	28.2	597.6	340.2	31.5
9 Vibrating Bed Dryers Each	4.85			
2 Coal Bin Baghouses Each	0.10			
2 Flyash Silo Baghouses Each	0.14			
4 Coal Silo Baghouses, Transfer Tower, & Sampling Tower Each	0.86			
4 Coal Feeder Baghouses Each	0.43			
Total Predicted Annual Emissions in tons/yr	227	1,736	987	91
Potential to Emit in tons/year	290	2,560	1,460	135

AIR QUALITY ANALYSIS

The air quality analysis (AQA) is a key element of the PSD program. The purpose of the AQA is to show that neither the National Ambient Air Quality Standards (NAAQS) or the PSD increments will be violated. When doing this it is customary to model all sources in the area in order to determine if the NAAQS is being violated and also to model only those sources which consume increment in order to caculate the increment consumption. In the case of this application all sources in ETSI's area of impact also consume PSD increment; thus, only one set of modeling runs was needed to show that neither the NAAQS nor the PSD increments were violated.

The first step in the AQA was to establish an inventory of those sources in the area of impact in preparation for a screening analysis. This inventory includes stack heights, exit temperatures, exit velocities and emission rates. Although the use of actual emission rates is allowed when conducting AQA's, the maximum allowable emission rates were used. Therefore, the results will be conservative.

The BUGGR model was used for the modeling. This is a model written by the ADPC&E staff which is similar to the EPA CRSTER model. Five years of historical meteorological data (Little Rock 1964, 1973, 1974, 1975, 1976) were used to represent worst case met when modeling SO2 and TSP. When modeling CO and NOx the worst case met used was one year of met data (Little Rock 1976); however, the highest first-high value was chosen rather than the highest second-high. For CO the three hour and twenty-four hour concentrations calculated by the model were converted to one and eight hour values by using the conversion factors found in Guidelines for Air Quality Maintenance Planning and Analysis Volume 10: Reviewing New Stationary Sources. The use of a downwash routine was not required because the stacks were all modeled at good engineering pratice (GEP) height.

The modeling results are sumarized in Table II. The graphical output from the model is presented in Appendix A.

Table II
Ambient Air Quality Summary
in micrograms per cubic meter

Sulfur Dioxide

Annual: 3.2 -- 16.0% of PSD increment and 4.0% of NAAQS
24 hr.: 33.7 -- 37.0% of PSD increment and 9.2% of NAAQS
3 hr.: 210.3 -- 41.0% of PSD increment and 16.0% of NAAQS

Particulate

Annual: 1.5 -- 7.9% of PSD increment and 2.0% of NAAQS
24 hr.: 16.1 -- 43.5% of PSD increment and 6.2% of NAAQS

Carbon Monoxide

8 hour: 25.7 -- 0.257% of NAAQS
1 hour: 39.0 -- 0.01 % of NAAQS

Oxides of Nitrogen

Annual: 0.7 -- 0.7% of NAAQS

Arkansas Department of Pollution Control and Ecology
Division of Air Pollution Control

Summary Report Relative to Permit Application

Submitted By: Great Lakes Chemical Corporation (South Plant)
El Dorado

CSN: 70ØØ37
First Submittal: 1Ø-2Ø-82

SUMMARY: Great Lakes Chemical proposes the installation of a facility at the South Plant in El Dorado which will manufacture Halon 13Ø1 (tri-fluoro-bromo-methane) and Halon 1211 (di-fluoro-chloro-bromo-methane). Both products are used as fire extinguishing agents. Halon 1301 is produced by reacting chloroform with anhydrous hydrogen flouride, producing flouroform. The flouroform is then reacted with bromine, producing the final product. Halon 1211 is produced by reacting Freon 22 (di-fluoro-methane) with bromine.

ALLOWABLE EMISSION RATES

SN	Process	Pollutant	Pounds/Hour
7Ø1	Dryer Regeneration - No Control	HC	Ø.75
7Ø2	HF Scrubber	HF	Ø.6
		HC	25.Ø
7Ø3	Br-HBr Scrubber	Br	Ø.Ø1
		HC	2.2
7Ø4	Purification Vent Condenser	HC	8.1

Estimated Cost: $4ØØ,ØØØ Total Project: $1Ø,ØØØ,ØØØ
Installation: 1-83 Operation: 8-83
Recommendation: Approval Permit Number: 701-A
Code * SIP *
Reviewed By: CDH Approved by: JDW Date Approved: 1-28-83

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY Guthrie Cotton Oil Company

Van Buren, Arkansas

CSN 170079 CASE REFERENCES

FIRST SUBMITTAL 12/30/82 AMENDED

SUMMARY:

Western Arkansas Export Elevator, a Division of Guthrie Cotton Oil Company, is proposing to build a grain elevator near Van Buren. It will be located upstream of the H. E. Cummins Port of Van Buren at river mile 299.4. The facility will consist of three storage bins with a total capacity of approximately 650,000 bushels, a barge loader, a truck loader, two dump pits, and various conveyor belts. Grain will only be received, stored, and shipped; it will not be treated in any way.

CONDITONS:

The opacity limit on sources SN-1, SN-8, and SN-9 shall be 20% when these sources are in active use; otherwise, the opacity limit shall be be no visible emissions. Demonstration of compliance with the opacity limits shall be presumed to represent compliance with the mass emissionlimits; noncompliance with the opacity limits shall be presumed to represent noncompliance with the mass emission limits.

ESTIMATED COST: $66,500 TOTAL PROJECT: $1,700,000

COMMENCEMENT OF INSTALLATION 1/83 COMMENCEMENT OF OPERATION 6/83

RECOMMENDATION Approval ASSIGNED PERMIT NUMBER 702-A

AIR CODE X SIP X PSD NSPS NESHAPS

REVIEWED BY MAP APPROVED BY JDW APPROVAL DATE 1/28/83

EMISSION RATE SUMMARY

SOURCE	CONTROL EQUIPMENT	EMISSION RATE
SN-1 Barge Load Out	Spouting	15 lb/hr
SN-2 Truck Load Out Spout (A)	Spouting and Sock	3 lb/hr
SN-3 Belt #1 Receiving	Belt Loaders and Covers	3 lb/hr
SN-4 Belt #2 Discharge	Hood	3 lb/hr
SN-5 Belt #2 Receiving	Belt Loader	3 lb/hr
SN-6 Leg A Discharge	Belt Loader	2 lb/hr
SN-7 Truck Load Out Spout (B)	Spouting and Sock	3 lb/hr
SN-8 Dump Pit (A)	Building with 4 sides and 2 doors	15 lb/hr
SN-9 Dump Pit (B)	Building with 4 sides and 2 doors	20 lb/hr
SN-10 Leg B Discharge	Belt Loader	2.5 lb/hr
SN-11 Belt 5 Receiving Transfer	Hood and Belt Loader	3 lb/hr

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY Georgia Pacific Corporation

El Dorado

CSN 700032 CASE REFERENCES

FIRST SUBMITTAL 1/5/83 AMENDED

SUMMARY:

The Georgia Pacific Corporation is proposing to move a wood waste boiler from Stamps, Arkansas and install it at their sawmill four miles south of El Dorado. This boiler will provide steam to be used in three existing and one new kiln. The kilns are currently fired directly with natural gas. In one hour the boiler will produce a maximum of 60,000 pounds of steam and emit 41.7 pounds of particulate matter. Emissions will be controlled by a multiclone system. The opacity limit shall be 20%.

ESTIMATED COST: $ N/A TOTAL PROJECT: $1,200,000

COMMENCEMENT OF INSTALLATION 1/83 COMMENCEMENT OF OPERATION 9/83

RECOMMENDATION Approval ASSIGNED PERMIT NUMBER 703-A

AIR CODE X SIP X PSD NSPS NESHAPS

REVIEWED BY MAP APPROVED BY JDW APPROVAL DATE 1/28/83

Arkansas Department of Pollution Control and Ecology
Division of Air Pollution Control

Summary Report Relative to Permit Application

Submitted By: Endevco
Garland, Miller County

CSN: 460029

SUMMARY: Permit No. 585-A was issued to Endevco on December 18, 1982 for the installation of a natural gas dehydrating and treatment plant near Garland in Miller County. The USEPA issued permit No. PSD-AR-240 on July 23, 1980. The facility removes carbon dioxide (CO2) and hydrogen disulfide (H2S) from the natural gas stream by absorption in an amine solution. The CO2 and H2S is removed from the amine solution by thermal desorption. The off-gases are currently incinerated, converting the H2S to sulfur dioxide (SO2).

Endevco now proposes the treating of additional natural gas up to 11.5 million standard cubic feet per day. Concurrently, Endevco also proposes the installation of a single stage Claus sulfur recovery unit. The emissions of sulfur dioxide (SO2) would therefore be decreased from 460 pounds per hour to 155 pounds per hour. Because the annual SO2 emission rate could exceed 250 tons per year, the facility will remain affected by the federal PSD regulations. However, as the modification will result in a reduction from the previously permitted emission rate, a Best Available Control Technology analysis was not required.

While the current configuration with the higher emission rate has been previously modelled, the proposed emissions were input to the Department's model BUG33. Five years of meteorological data was utilized with the routine grid of receptors. Although it was not expected to have a significant affect upon the predicted ambient air quality, modelling was performed with elevated receptors, also utilizing five years of met data. As expected, the predicted maximum concentrations for both cases are quite similar. Less than 20 per cent of the PSD increment would be consumed by Endevco, and there is no threat to the National Ambient Air Quality Standard. Additionally, short term modelling was utilized in determining the requirements of Specific Condition 3.

Installation: 3-15-83 Operation: 6-30-83
Recommendation: Approval Permit Number: PSD-704-A
Code * SIP * PSD *
Reviewed By: CDH Approved by: JDW Date Approved:

Endevco Natural Gas Company
460029
Permit No. PSD-704-A
January 28, 1983

Specific Conditions

1. All air permits previously issued to Endevco by the Department and the United States Environmental Protection Agency are hereby rescinded.

2. The current allowable sulfur dioxide (SO2) emission rate shall remain at 460 pounds per hour until such time that the Claus unit has achieved successfull operation. From that time forward, the allowable SO2 emission rate shall be 155 pounds per hour. Compliance shall be demonstrated by a monthly mass balance utilizing the total sulfur recovered and the measured natural gas flows and hydrogen disulfide contents. The mass balance with calculations shall be submitted to the Department no later than the fifteenth day of the succeeding month.

3. On all occasions when the sulfur removal equipment is not operating satisfactorily, the following conditions shall be satisfied in addition to the requirements of General Condition 7: The Department shall immediately be notified by telephone. The flow(s) of natural gas shall be reduced such that the SO2 emission rate shall not exceed 700 pounds per hour. Should the meteorological conditions indicate the possibility of poor dispersion, the maximum allowable emission rate may be reduced to that level deemed proper by the Department.

4. As the supply of natural gas decreases, and/or economic conditions change, a point will be reached at which the quantity of H2S will not be sufficient to sustain the operation of the Claus unit, and/or the income from the treating fees has been reduced such that it is not possible to continue operation of the sulfur recovery equipment. At that time, the applicant may cease operation of the sulfur recovery equipment provided the following conditions are satisfied:
    a) The Department has been notified at least 60 days prior to shutdown of the Claus unit. Notification shall consist of, as a minimum, sufficient process information gathered during the operation of the Claus unit to indicate the minimum flow of H2S to sustain operation, and an economic analysis accompanied by an audit report by an independent certified public accountant.
    b) The off gases are incinerated and released from a height of 150 feet, and the SO2 emission rate shall not exceed 460 pounds per hour.

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
DIVISION OF AIR POLLUTION CONTROL

SUMMARY REPORT RELATIVE TO PERMIT APPLICATION

SUBMITTED BY ETSI Pipeline Project, A Joint Venture (ETSI)

Jefferson County near Redfield (White Bluff)

CSN _____ CASE REFERENCES _____

FIRST SUBMITTAL 8/16/82 AMENDED 11/3/82

SUMMARY:

ETSI Pipeline Project, A Joint Venture (ETSI) proposes to build and operate a coal slurry pipeline to transport coal from the Powder River Basin area in Wyoming to six dewatering terminals in Arkansas and Oklahoma. The ETSI White Bluff Dewatering Plant will be located on the site of Arkansas Power and Light's White Bluff Generating Station.

The dewatering plant is designed to handle 15,500 tons of coal per day. The process will consist of centrifuges, filters, and thermal dryers. The incoming coal slurry will pass through a series of heat exchangers and then to the centrifuges. The centrifuge cake will be sent to the vibrating bed dryers. When the coal comes out of the dryers it will have been reduced to the moisture content required. Centrate from the centrifuges is sent to a double belt filter press; the filter cake is then mixed with centrifuge cake at the dryer inlet. Process steam will be supplied by a coal fired boiler rated at 498 million Btu's per hour input. At rated capacity the boiler will burn approximately 31 tons of coal per hour.

The facility will have the potential to emit over 100 tons per year of sulfur dioxide, nitrogen oxides, and]particulate; thus, the rules of Prevention of Significant Deterioration (PSD) will apply. A full PSD review was done for those pollutants listed above along with carbon monoxide, for which the potential emissions exceed the de minimis rate. Furthermore,the boiler and the dryers will be subject to Subpart D and Subpart Y of the New Source Perforance Standards respectively.

ESTIMATED COST $ 5,500,000 TOTAL PROJECT $ 94,500,000

INSTALLATION May 1984 OPERATION September 1986

RECOMMENDATION Approval / with conditions ASSIGNED PERMIT NUMBER 705-A

AIR CODE X SIP X PSD X NSPS X NESHAPS _____

REVIEWED BY MAP/CDH APPROVED BY JDW DATE APPROVED 1/28/83

Best Available Control Technology

Any source subject to PSD must apply Best Available Control Technology (BACT) to control each pollutant emitted over the de minimis level. BACT is to be determined on a case by case basis taking into account the amount of control, economic cost, energy cost, and reliability of the various control strategies. When performing a BACT analysis, an applicant should propose a base case and then examine alternative systems that would achieve a higher degree of emission control.

The ETSI plant will have twenty five sources of particulate emissions. They are:

Vibrating bed dryers	(5 stacks, 9 dryers)
Coal fired boiler	(one)
Ash bin	(two)
Coal bin	(two)
Coal silos	(four)
Coal feeder	(four)
Transfer towers	(two)
Sampling tower	(one)

As BACT, ETSI proposes to use wet scrubbers at 99.5% efficiency to control the vibrating bed dryers and fabric filters (baghouses) at 99.9% efficiency to control all other emssion points. In the cases where baghouses are proposed, no other system would achieve a higher degree of control than the ones ETSI has proposed; thus, in these cases the proposed strategy to control particulate emissions has been determined to be BACT. Baghouses are unsuitable for controlling emissions from coal dryers. The high moisture content of the gas will cause blinding of the filtration surface when the filter temperature is below the dew point (ie. start up) and the hot gases in contact with fine coal will create a significant explosion potential. Scrubbers, on the other hand, are insensitive to moisture and the explosion hazard is greatly reduced. ETSI has proposed an outlet grain loading of 0.01 grains per dry standard cubic foot (gr/DSCF); this is more than three times lower than the New Source Performance Standard of 0.031 gr/DSCF. Thus, the use of wet scrubbers at 99.5% efficiency has been determined to satisfy BACT for control of particulate emitted from the vibrating bed dryers.

Sulfur dioxide will be emitted from the coal fired boiler. ETSI has proposed as the base case to burn low sulfur coal, less than 1.2 pounds of sulfur per million Btu, which the pipeline will be handling. Since a Flue Gas Desulfurization (FGD) system would reduce the total amount of SO2 emitted ETSI examined this control strategy as part of their BACT analysis. A FGD system would cost

about five million dollars to build and two million dollars a year to operate (see application for exact amounts) and would remove 1,215 tons of sulfur dioxide per year. The total cost of FGD would be $2,390 per ton of sulfur removed. Also, stack gases have a lower exit tempeature when a FGD system is used. The lower temperature causes poorer dispersion, which results in ground-level concentrations which are not directly proportional to the amount of sulfur removed. In fact, a 70 percent reduction in SO2 emissions results in a 26 percent reduction in ground level concentration. It is common practice to burn relatively high sulfur--and low cost--coal when a FGD system is used; however, ETSI intends, of course, to burn the low sulfur coal which they will be dewatering. They do not intend to install any facilties to unload coal by rail; ETSI is, in a sense, 'locked in' to the coal they are to burn. Therefore, use of FGD would, in effect, result in the use of two control techniques to control SO2. For the reasons stated above, the use of low sulfur coal has been determined to satisfy BACT for SO2.

Oxides of Nitrogen (NOx) are formed as products of combustion in a boiler. As such, they are controlled through combustion techniques. ETSI proposes to use staged combustion and low excess air to control NOx. As further control, ETSI will conduct compliance testing for NOx and if the emissions are not less than 0.5 pounds of NOx per million Btu's of heat input, a continuous NOx monitor will be installed. No other control technique for NOx has been sucessfully demonstrated; therefore, ETSI's proposal for NOx control has been judged to satisfy BACT.

Carbon Monoxide (CO) is a product of incomplete combustion. One technique to inprove combustion is to feed excess air to the boiler; however, too much excess air aids in the formation of NOx and increases the heat load on the boiler. Thus, the simultaneous control of NOx and CO require a certain amount of "give and take". During the performance test, ETSI will develop operating procedures which lead to good combustion. These procedures will be followed throughout the life of the boiler. The development and maintenance of good combustion has been determined to satisfy BACT for CO.

CONDITIONS OF APPROVAL

1. Installation and operation of the boiler and vibrating bed dryer shall be in full compliance with the New Source Performance Standards contained in 40 CFR 60 Subpart D and Subpart Y respectively.

2. The emission limit for the coal dryers will be 0.01 grains of particulate matter per dry standard cubic foot; the opacity shall not exceed 20%.

3. The emission limit for the boiler shall be 0.10 pounds of particulate matter per million Btu's of heat input; the opacity limit shall be 20%. The sulfur dioxide limit shall be 1.2 pounds per million Btu's heat input. The limit for nitrogen oxides shall be 0.7 pounds per million Btu's of heat input.

4. The opacity limit on the coal bin baghouses, flyash silo baghouses, coal silo baghouses, coal feeder baghouses, and transfer towers will be no visible emissions. Demonstration of compliance with the opacity limit will be presumed to represent compliance with the mass emission limit. Demonstration of violation of the opacity limit will be presumed to represent violation of the mass emission limit.

5. The only permitted emission points are those listed in conditions 2, 3, and 4. No others will be allowed.

6. The procurement specifications and the proposals of the selected vendor(s) for the boiler, dryers, baghouses, scrubbers, and coal handling equipment shall be submitted to the Department for review as soon as said proposals or specifications are available.

7. Prior to the operation of the facility, ETSI will submit to the Department for approval a plan demonstrating to the Department that the continuous monitors are located in areas of accessibility and where a representative sample with no interference may be taken. This plan shall also include a diagram outlining the location of the monitors. ETSI shall also submit an overview of the continuous mointoring system including a flow diagram, type of monitors being used (i.e. in-situ or extractive) proposed maintenance program, and proposed alternate methods to be used during periods when monitors are not operating. If an extractive monitor is used then a detailed explanation of the conditioning system shall be presented.

8. ETSI will submit to the Department a detailed boiler start up procedure as soon as it is available but before initial operation.

9. If excessive fugitive emissions are observed, and ETSI is so notified by the Director or his authorized representative, the facility will cease receiving coal until such time as ETSI can demonstrate that the emissions have been stopped and can be reasonably expected not to recur.

10. The efficiency of the dryer scrubbers shall be 99.5%. Should the scrubbers not meet this efficiency during the performance tests or should the opacity exceed 20%, operation of the dryers shall cease until such time that the scrubber and/or supporting equipment have been modified and testing indicates to the Department's satisfaction that the 99.5% efficiency is being achieved or the emission limit set forth in Condition 2 in being met.

Table I
Emission Rate Sumary

Maximum Short Term Emission Rates (lb/hr)

Emission Source	TSP	SO2	NOx	CO
Coal Fired Boiler	33.1	597.6	340.2	31.5
9 Vibrating Bed Dryers Each	4.85			
2 Coal Bin Baghouses Each	0.10			
2 Flyash Silo Baghouses Each	0.14			
4 Coal Silo Baghouses, Transfer Tower, & Sampling Tower Each	0.86			
4 Coal Feeder Baghouses Each	0.43			
Total Predicted Annual Emissions in tons/yr	228	1,736	987	91
Potential to Emit in tons/year	370	2,560	1,460	135

AIR QUALITY ANALYSIS

The air quality analysis (AQA) is a key element of the PSD program. The purpose of the AQA is to show that neither the National Ambient Air Quality Standards (NAAQS) or the PSD increments will be violated. When doing this it is customary to model all sources in the area in order to determine if the NAAQS is being violated and also to model only those sources which consume increment in order to caculate the increment consumption. In the case of this application all sources in ETSI's area of impact also consume PSD increment; thus, only one set of modeling runs was needed to show that neither the NAAQS nor the PSD increments were violated.

The first step in the AQA was to establish an inventory of those sources in the area of impact in preperation for a screening analysis. This inventory includes stack heights, exit temperatures, exit velocities and emission rates. Although the use of actual emission rates is allowed when conducting AQA's, the maximum allowable emission rates were used. Therefore, the results will be conservative.

The BUGGR model was used for the modeling. This is a model written by the ADPC&E staff which it is similar to the EPA CRSTER model. Five years of historical meteorological data (Little Rock 1964, 1973, 1974, 1975, 1976) were used to represent worst case met when modeling SO2 and TSP. When modeling CO and NOx the worst case met used was one year of met data (Little Rock 1976); however, the highest first-high value was chosen rather than the highest second-high. For CO the three hour and twenty-four hour concentrations calculated by the model were converted to one and eight hour values by using the conversion factors found in Guidelines for Air Quality Maintenance Planning and Analysis Volume 10: Reviewing New Stationary Sources. The use of a downwash routine was not required because the stacks were all modeled at good engineering pratice (GEP) height.

The modeling results are sumarized in Table II. The graphical output from the model is presented in Appendix A.

Table II
Ambient Air Quality Summary
in micrograms per cubic meter

Sulfur Dioxide

Annual: 2.8 -- 14.0% of PSD increment and 3.5% of NAAQS
24 hr.: 37.3 -- 44.2% of PSD increment and 10.2% of NAAQS
3 hr.: 255.2 -- 50.0% of PSD increment and 20.0% of NAAQS

Particulate

Annual: 1.4 -- 7.4% of PSD increment and 1.8% of NAAQS
24 hr.: 15.8 -- 50.0% of PSD increment and 6.1% of NAAQS

Carbon Monoxide

8 hour: 25.0 -- 0.25 % of NAAQS
1 hour: 37.9 -- 0.009% of NAAQS

Oxides of Nitrogen

Annual: 0.7 -- 0.7% of NAAQS