BASF

The Chemical Company

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January 26, 2007

CERTIFIED MAIL # 7005 3110 0000 9126 3774

Chuck Carr Brown, PhD, Asst. Secretary
Louisiana Department of Environmental Quality
Office of Environmental Services
Permits Division
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313

Ref: Utilities Boiler Nos. 3 and 6 Part 70 Operating Permit Application Addendum
Activity No. PER20030004
AI-2049

Dear Dr. Brown:

BASF Corporation (BASF) is submitting three copies of an addendum to the Part 70 Operating Permit Application for the Utilities Boiler Nos. 3 and 6. This addendum serves as a replacement of the application submitted on February 27, 2003 and includes installation of dry low-NO_X burners in No. 3 Boiler and updates to the regulatory tables.

If you have any questions regarding this addendum, please call me at (225) 339-2416.

Sincerely yours,

Craig Tyndall

Craig Tyndall
EHS Team Leader

DEQ - OES
2007 JAN 29 PM 1:52

JCT/dem

Enc: As stated

cc: (one copy)
David Neleigh (6PD-R)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733
CERTIFIED MAIL # 7005 3110 0000 9126 3781

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Helping Make Products Better™

BASF Corporation
Geismar Site
Ascension Parish
Geismar, Louisiana

Part 70 Operating Permit Application for Utilities Plant Boilers 3 & 6 Reconciliation and Permit Renewal

January 2007

(Update to February 2003 Application)

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PART 70 OPERATING PERMIT APPLICATION COMPLETENESS CHECKLIST

Date: **December 2006**
Facility: **BASF Utilities Plant Boilers 3 & 6**
Facility ID Number: **0180-0013**
Application Type: ( ) Initial Submission ( ) Administrative Change ( ) Minor Modification ( ) Significant Modification ( ) Supplement (X) Revision* (X) Renewal*
*Existing Air Permit Number: 2564-V1

LAC 33:III	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	N/A	Location Within the Permit Application
517.A Timely Submittal	For Initial applications, was a copy of the Application also Submitted to EPA?			X	
517.B.1,2 Certification	Does the Application include a Certification by a Responsible Official?	X			Sections 2.0 and 3.0
517.B.3 Certification	Does the Application Include Certification by a Professional Engineer or their Designee?	X			Section 2.0
517.D.1 Identifying Information	Does the Application Include:				
	1. Company Name, Physical and Mailing Address of Facility?	X			Section 2.0
	2. Map Showing Location of the Facility?	X			Figure 1
	3. Owner and Operator Names and Agent?	X			Section 2.0
	4. Name and Telephone Number of Plant Manager or Contact?	X			Sections 2.0 and 3.0
517.D.2. SIC Codes, Source Categories	Does the Application Include a Description of the Source's Processes and Products, Including SIC Code, and	X			Sections 1.0 through 3.0
	EPA Source Category of HAPs if applicable	X			Section 4.0
517.D.3,6 EIQ Sheets	Has an EIQ Sheet been Completed for Each Emission Point Whether an Area or Point Source?	X			Section 3.0
517.D.4 Monitoring Devices	Does the Application Include Identification and Description of Compliance Monitoring Devices or Activities?	X			Section 4.0

LAC 33:III	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	N/A	Location Within the Permit Application
517.D.5 Revisions and Modifications Only	For Revisions or Modifications, Does the Application Include a Description of the Proposed Change and any Resulting Change in Emissions?	X			Section 1.0
517.D.7 General Information	Does the Application Include (on a Facility-Wide Basis) Information Regarding Fuels, Fuel Use, Raw Materials, Production Rates, and Operating Schedules?	X			Section 3.0
517.D.8 Operating Limitations	Has Information Regarding any Limitations on Source Operation or any Applicable Work Practice Standards been Identified?			X	
517.D.9 Calculations	Are Emission Calculations Provided?	X			Appendix A
517.D.10 Regulatory Review	Does the Application Include a Citation and Description of Applicable Louisiana and Federal Air Quality Requirements and Standards?	X			Section 4.0, Table 4.2
517.D.11 Test Methods	Has a Description of or a Reference to Applicable Test Methods Used to Determine Compliance with Standards been Provided?	X			Section 4.0, Table 4.4
517.D.12 Major Sources of TAPs	Does the Application Include Information Regarding the Compliance History of Sources Owned or Operated by the Applicant (per LAC 33:III.5111)?	X			Section 2.0
517.D.13 Major Sources of TAPs	Does the Application Include a Demonstration to Show that the Source Meets all Applicable MACT and Ambient Air Standard Requirements?	X			Section 4.0, Table 4.2
517.D.14 PSD Sources Only	If Required by DEQ, does the Application Include Information Regarding the Ambient Air Impact for Criteria Pollutants as Required for the Source Impact Analysis per LAC 33:III.509.K, L, and M?			X	
517.D.15 PSD Sources Only	If Required by DEQ, does the Application Include a Detailed Ambient Air Analysis?			X	
517.D.16, 18	Has any Additional Information been Provided?		X		
517.D.17 Fees	Has the Fee Code been Identified?	X			Section 2.0
	Is the Applicable Fee Included with the Application?	X			
517.E.1 Additional Part 70 Requirements	Does the Certification Statement Include a Description of the Compliance Status of Each Emission Point in the Source with all Applicable Requirements?	X			Section 2.0
517.E.2 Additional Part 70 Requirements	Does the Certification Statement Include a Statement that the Source will Continue to Comply with all Applicable Requirements with which the Source is in Compliance?	X			Section 2.0

LAC 33:III	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	N/A	Location Within the Permit Application
517.E.3 Additional Part 70 Requirements	Does the Certification Statement Include a Statement that the Source will, on a Timely Basis, Meet all Applicable Requirements that will Become Effective During the Permit Term?	X			Sections 2.0 and 4.0
517.E.4 Additional Part 70 Requirements	Are there Applicable Requirements for which the Source is not in Compliance at the Time of Submittal?		X		
	Does the Application Include a Compliance Plan Schedule?			X	
	Does the Schedule Include Milestone Dates for which Significant Actions will Occur?			X	
	Does the Schedule Include Submittal Dates for Certified Progress Reports?			X	
517.E.5 Additional Part 70 Requirements	Is this Source Covered by the Federal Acid Rain Program?		X		
	Are the Requirements of LAC 33:III.517.E.1-4 Included in the Acid Rain Portion of the Compliance Plan?			X	
517.E.6 Additional Part 70 Requirements	Have any Exemptions from any Applicable Requirements been Requested?		X		
	Is the List Provided?			X	
517.E.7 Additional Part 70 Requirements	Does the Application Include a Request for a Permit Shield?		X		
	Does the Request List those Federally Applicable Requirements for which the Shield is Requested along with the Corresponding Draft Permit Terms and Conditions which are Proposed to Maintain Compliance?			X	
517.E.8 Additional Part 70 Requirements	Does the Application Identify any Reasonable Anticipated Alternative Operating Scenarios?		X		
	Does the Application Include Sufficient Information to Develop Permit Terms and Conditions for Each Scenario, Including Source Process and Emissions Data?			X	
517.F Confidentiality	Does the Application Include a Request for Non-Disclosure (Confidentiality)?		X		
525.B Minor Permit Modifications	Does the Application Included a Listing of New Requirements Resulting from the Change?	X			Section 4.0

LAC 33:III	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	N/A	Location Within the Permit Application
525.B Minor Permit Modifications (continued)	Does the Application Include Certification by the Responsible Official that the Proposed Action fits the Definition of a Minor Modification as per LAC 33:III.525.A.?	X			Section 2.0
	Does the Certification also Request that Minor Modification Procedures be Used?	X			Section 2.0
	Does the Application for Part 70 Sources Include the Owner's Suggested Draft Permit and Completed Forms for the Permitting Authority to use to Notify Affected States?	X			Sections 2.0 through 4.0

SECTION 1.0

INTRODUCTION

1.0 INTRODUCTION

BASF operates an integrated chemical manufacturing facility on the east bank of the Mississippi River, near Geismar. Part 70 Permit No. 2265-V0 was issued June 25, 1997 for the Utilities Plant, including Boilers 3 and 6. Boilers 3 and 6 were permitted separately under Part 70 Operating Permit No. 2564-V0, issued August 27, 1998 and modified as Permit No. 2564-V1 on November 22, 2000.

1.1 Process Description

The BASF Geismar Facility produces acetylene, amine compounds, aniline, ethylene oxide, glyoxal, 1,4-butanediol, n-methyl pyrrolidone, toluene diisocyanate, tetrahydrofuran, polytetrahydrofuran, vinylpyrrolidone, polyvinylpyrrolidone, polyols, butyrolactone, surfactants, and methylene bis phenylisocyanate.

The Utilities Plant consists of several operating areas. Steam Boilers No. 3 is fired with natural gas, and/or a combination of natural gas, waste alcohol fuels and acetylene off gas (AOG). Boiler No. 6 is fired with natural gas, and/or a combination of natural gas, waste alcohol fuels and TDA vicinals. These boilers are also capable of burning No. 2 or No. 6 fuel oil and hydrogen. The No. 2 and No. 6 fuel oils are used as contingency fuels in the event natural gas is unavailable or economically unfeasible.

1.2 Project Description

As part of the February 2003 submittal, BASF proposed minor revisions to the Utilities Plant Boilers 3 and 6 Part 70 Operating Permit, to update various permit terms and conditions along with minor changes in emissions. A brief summary of those proposed changes is as follows:

1.2.1 The Boiler Nos. 3 and 6 emission points are being renumbered with this permitting action, from 3-57 and 1-75, respectively, to UTL15 and UTL16, respectively.

1.2.2 Part 70 Specific Condition 5 requires operating the boilers within minimum firebox temperature, maximum carbon monoxide limit, and minimum oxygen concentration at all times. Since these limits are required only during the burning of hazardous waste, BASF requests that Part 70 Specific Condition 5 be removed since this condition does not originate with any current air emission regulation.

1.2.3 Page 6 of the current permit, "Use of Flue Gas Oxygen Monitors for Combustion Controls," is not applicable. This appears to be a "Best Achievable Control Technology" (BACT) requirement normally associated with Prevention of Significant Deterioration (PSD) permitting. BASF requests that it be removed.

1.2.4 Emission limits for the Nos. 3 and 6 Boilers are being reconciled based on current AP-42 emission factors.

1.2.5 Boilers 3 and 6 burn waste alcohols. Boiler 6 also burns TDA vicinals from the TDI-R Plant, while Boiler 3 burns acetylene offgas. Inter-plant transfer of these fuel streams generates minor amounts of fugitive emissions. These are accounted for in the current submittal under new Emission Point UTL18.

This application proposes an update to the February 2003 submittal. A brief summary of the proposed additional changes are as follows:

1.2.6 Revise Boiler 3 emission rates to reflect the installation of low NO_x burners as approved in the "Authorization-to-Construct" dated July 19, 2006. The NO_x emissions for Boiler 3 represented in this application are reconciled rates based on vendor data.

1.2.7 Incorporate into the permit the discontinuance of NO_x continuous emission monitoring (CEM) for Boiler 6 and non-operation of the CEM system for opacity, oxygen (O_2), and carbon monoxide (CO) as approved in the Letter of No Objection dated March 1, 2005 (see Appendix C).

1.2.8 Remove Part 70 Specific Condition No. 7 from the permit. Waste streams listed are permitted already in Hazardous Waste Permit No. LAD040776809-OP-RN-1.

1.2.9 Remove the requirement of weekly visual inspections for opacity for Boiler No. 3 stack (Emission Point 3-57) as stated in Part 70 Specific Condition No. 6. Weekly inspections are not required by LAC 33:III.1101 or 1313.

1.3 Type of Review

This permit application is for minor revisions to the current Part 70 Operating Permit. The changes will result in reconciled emission rates for particulates, nitrogen oxides (NO_x), carbon monoxide (CO), and Volatile Organic Compounds (VOC). Because the rate changes are due only to reconciliation, neither Non-attainment New Source Review (NNSR) nor Prevention of Significant Deterioration (PSD) requirements will apply.

Emission rates before and after the changes are shown below:

Emission Rate (TPY)			
Pollutant	Before*	After**	Change
PM_{10}	27.85	21.73	- 6.12
SO_2	2.51	1.49	- 1.02
NO_x	958.16	453.76	- 504.4
CO	104.37	208.95	+ 104.58
VOC	16.13	15.94	- 0.19

* permitted rates.
** reconciled rates.

Permitted emission rates before and reconciled emission rates for each toxic air pollutant (TAP) included in this permit modification are shown below, along with the respective minimum emission rate (MER):

Emission Rate (TPY)				
Pollutant	Before*	After**	Change	MER
Butyl Alcohol†	2.19	2.82	+ 0.63	5.5
Formaldehyde[1]	0.0	0.19	+ 0.19	0.13
n-Hexane†[1]	0.0	4.47	+ 4.47	6.5
Methanol†	4.97	5.83	+0.86	10.0
Toluenediamine	1.81	2.18	+ 0.37	0.125
o-Toluidine	0.0	0.03	+ 0.03	N/A

* permitted rates.

** reconciled rates.

† Class III TAP; no MACT required.

[1] Products of natural gas combustion. Reconciled emissions to reflect current AP-42 emission factors.

1.4 Emission Sources

Utilities Plant Boilers 3 & 6, along with the above-noted fugitives, are the only emissions sources for this operating area. There are also General Condition XVII emissions, as noted at Appendix B.

1.5 Environmental Impact

There are no changes in this permit that will cause any negative impact to the environment. Therefore, an environmental impact review is not required.

SECTION 2.0

APPLICATION FOR APPROVAL OF EMISSIONS

Department of Environmental Quality Office of Environmental Services Permits Division P.O. Box 4313 Baton Rouge, LA 70821-4313 (225) 219-3181	**LOUISIANA** **Application for Approval of Emissions of Air Pollutants**

1 Please Type or Print	Company Name **BASF Corporation**	☑ Owner ☑ Operator	For Permit Section Use Only
	Parent Company (if Company Name given above is a division)		
	Plant Name (if any) **Utilities Plant Boilers 3 & 6**		
	Nearest Town **Geismar** Parish Where Located **Ascension**		
	Agency Interest Number **2049** CDS Number **0180-0013**		

2 PROPOSED ACTION Give a brief description of proposed action. Attach flow diagrams, illustrations required to convey an understanding.

BASF Corporation (BASF) proposes to renew its Utilities Plant Boilers 3 & 6 Part 70 Operating Permit. The action includes reconciling emissions to reflect updated emission factors, as well as updating operating conditions.

3 PHYSICAL LOCATION, OWNERSHIP AND USE OF ADJOINING PROPERTY ☑ Map or description attached.

Distance (km) to: Texas: **270** Arkansas: **330** Mississippi: **95** Alabama: **230**

Latitude of facility front gate: DG: **30** MN: **11** SEC N: **54**

Longitude of facility front gate: DG: **90** MN: **59** SEC E: **41**

The adjoining property is primarily industrial with some farmland interspersed. Private residences are located on the northeast boundary of the BASF Geismar site. The nearest town is Gonzales, Louisiana with a population of 7,800 which is located approximately five miles northeast of the site. Figure 1 shows the site location with respect to the surrounding area.

4 TYPE OF APPLICATION

☑ **Part 70 General**	☐ **Part 70 Regular**	☐ **State**	☐ **NSR**

☑ **Reconciliation**	☑ **Renewal (Part 70)**	☐ **Modification or expansion of existing facility**
☐ **Entirely new facility**	☐ **Other** _____	☐ **Previously grandfathered, exempted, or unpermitted**

PROJECT FEE CALCULATION: **Enter fee number, permit type, production capacity/throughput, and fee pursuant to LAC 33:III.Chapter 2.**

FEE NO.	TYPE	CAPACITY	AMOUNT
	N/A - Renewal		

5. KEY DATES

Estimated date construction will commence: **N/A** Estimated date operation will commence: **N/A**

Note: A completed Emission Inventory Questionnaire (EIQ) that reflects projected emissions from your facility as a whole after the project described in this application becomes operational must be submitted with this application. If you are submitting an application that is for modification or expansion of an existing facility, the Department of Environmental Quality must also have an EIQ for existing emissions. If you have already submitted an EIQ that is on file with the Department, it may fulfill this requirement. Consult instructions for further details.

6 EMISSIONS BY POLLUTANT

List each emission from all sources. Group by pollutant PM10, SO2, NOx, CO, VOC Air Toxic Air Pollutants (TAPs), non-VOC TAPs, Other VOC, non-VOC/non-TAPs, and Total VOC. Grouping by SARA VOC and SARA non-VOC is optional. Show total tons/year for each pollutant. Consult instructions.

Emission Point ID Number	Pollutant (List individual toxics and non-criteria hydocarbons separately)	Permitted Emission Rate Before (tons/yr)	Permitted Emission Rate After (tons/yr)
non-VOC Criteria Pollutant			
UTL15	Particulate Matter	16.11	11.52
UTL16	Particulate Matter	11.74	10.21
	Total: Particulate Matter	**27.850**	**21.73**
UTL15	Sulfur Dioxide	1.42	0.71
UTL16	Sulfur Dioxide	1.09	0.78
	Total: Sulfur Dioxide	**2.510**	**1.49**
UTL15	Nitrogen Oxides	685.6	181.20
UTL16	Nitrogen Oxides	272.56	272.56
	Total: Nitrogen Oxides	**958.160**	**453.76**
UTL15	Carbon Monoxide	49.86	99.34
UTL16	Carbon Monoxide	54.51	109.27
UTL18	Carbon Monoxide	0	0.34
	Total: Carbon Monoxide	**104.370**	**208.95**
	Total: non-VOC Criteria Pollutant	**1,092.890**	**685.93**
Total VOC (including those listed)			
UTL15	Total VOC (incl. those listed below)	8.53	8.60
UTL16	Total VOC (incl. those listed below)	7.6	7.15
UTL18	Total VOC (incl. those listed below)	0	0.19
	Total VOC (incl. those listed below)	**16.130**	**15.94**
	Total VOC (including those listed)	**16.130**	**15.94**
non-VOC Pollutant			
UTL15	Sulfur Trioxide	0	0.03
UTL16	Sulfur Trioxide	0.01	0.03
	Total: Sulfur Trioxide	**0.010**	**0.06**
	Total: non-VOC Pollutant	**0.010**	**0.06**
VOC Air Toxics			
UTL15	Butanol, n-	1.35	2.13
UTL16	Butanol, n-	0.84	0.69
	Total: Butanol, n-	**2.190**	**2.82**
UTL15	Formaldehyde	0	0.09
UTL16	Formaldehyde	0	0.10

6 EMISSIONS BY POLLUTANT

List each emission from all sources. Group by pollutant PM10, SO2, NOx, CO, VOC Air Toxic Air Pollutants (TAPs), non-VOC TAPs, Other VOC, non-VOC/non-TAPs, and Total VOC. Grouping by SARA VOC and SARA non-VOC is optional. Show total tons/year for each pollutant. Consult instructions.

Emission Point ID Number	Pollutant (List individual toxics and non-criteria hydocarbons separately)	Permitted Emission Rate Before (tons/yr)	Permitted Emission Rate After (tons/yr)
	Total: Formaldehyde	**0.000**	**0.19**
UTL15	Hexane, n-	0	2.13
UTL16	Hexane, n-	0	2.34
	Total: Hexane, n-	**0.000**	**4.47**
UTL15	Methanol	3.06	4.41
UTL16	Methanol	1.91	1.42
	Total: Methanol	**4.970**	**5.83**
UTL16	Toluenediamine	1.81	2.03
UTL18	Toluenediamine	0	0.15
	Total: Toluenediamine	**1.810**	**2.18**
UTL16	Toluidine, o-	0	0.02
UTL18	Toluidine, o-	0	< 0.01
	Total: Toluidine, o-	**0.000**	**0.03**
	Total: VOC Air Toxics	**8.970**	**15.52**

7 HISTORY OF PERMITTED EMISSIONS

List each emission level from facility permits (for unit specific permits, the history should be for the unit of concern only). Group by permit and show totals. Include as the last entry, the total emissions following the proposed change, entering the project name for "Permit number" and date of submittal for "Date permit issued." Consult instructions.

Permit Number	Date Permit Issued	Pollutant	Permitted Emission Rate tons/yr
2564-V0	08/27/98	Particulate Matter	27.85
2564-V0	08/27/98	Sulfur Dioxide	2.51
2564-V0	08/27/98	Nitrogen Oxides	958.16
2564-V0	08/27/98	Carbon Monoxide	104.37
2564-V0	08/27/98	Volatile Organic Compounds	16.13
2564-V0	08/27/98	Sulfur Trioxide	0.03
2564-V0	08/27/98	Methanol	4.97
2564-V0	08/27/98	Butanol, n-	2.19
2564-V0	08/27/98	Toluenediamine	1.81
2564-V1	11/22/00	Particulate Matter	27.85
2564-V1	11/22/00	Sulfur Dioxide	2.51
2564-V1	11/22/00	Nitrogen Oxides	958.16
2564-V1	11/22/00	Carbon Monoxide	104.37
2564-V1	11/22/00	Volatile Organic Compounds	16.13
2564-V1	11/22/00	Sulfur Trioxide	0.03
2564-V1	11/22/00	Methanol	4.97
2564-V1	11/22/00	Butanol, n-	2.19
2564-V1	11/22/00	Toluenediamine	1.81
Part 70 Update	01/19/07	Particulate Matter	21.73
Part 70 Update	01/19/07	Sulfur Dioxide	1.49
Part 70 Update	01/19/07	Sulfur Trioxide	0.04
Part 70 Update	01/19/07	Nitrogen Oxides	453.76
Part 70 Update	01/19/07	Carbon Monoxide	208.95
Part 70 Update	01/19/07	Volatile Organic Compounds	15.94
Part 70 Update	01/19/07	Butanol, n-	2.82
Part 70 Update	01/19/07	Formaldehyde	0.19
Part 70 Update	01/19/07	Hexane, n-	4.47
Part 70 Update	01/19/07	Methanol	5.83
Part 70 Update	01/19/07	Toluenediamine	2.18
Part 70 Update	01/19/07	Toluidine, o-	0.03

8 Title VI Stratospheric Ozone AAE- Section 8 -

A Does your facility have any air conditioners or refrigeration equipment that uses CFCs, HCFCs or other ozone-depleting substance?
_X_ Yes ___ No

B Does the air conditioner or refrigeration equipment contain a refrigeration charge greater than 50 pounds? _X_Yes ___ No

C Do your facility personnel maintain, service, repair, or dispose of any motor vehicle air conditioners (MVACs) or appliances ('appliance' and 'MVAC' as defined at 40 CFR 82.152)? ___Yes _X_ No

D Cite and describe which Title VI requirements are applicable to your facility (i.e. 40 CFR 82.152, Subpart A through G.) in the Regulatory Applicability section of the application.

Subpart F applies to the BASF Geismar site. BASF services, maintains and repairs appliances. In addition, BASF owns and operates appliances on site.

9 LAC 33:I.1701 AAE- Section 9 -

A Does the company or owner have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying in other states? (This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.)

☑ Permits in Louisiana. List Permit Numbers: 2526-V2, 2028-V3, 2044(M-1), 2558-V1, 2353-V0, 2437, 2459-V3, 2094-V1, 2334-V0, 2559-V2, 2039-V0, 2427-V1, 2582-V2, 2643-V0, 2265-V3, 2564-V1, 0180-00069-03, and 0500-00023-04

☑ Permits in other states. (list states): AL, CA, FL, GA, IL, KY, MI, MS, MO, NJ, NC, NY, OH, SC, TX, VA

B Do you owe any outstanding fees or final penalties to the department? ___Yes _X_ No

If yes, please explain.

C Is your company a corporation or limited liability company? _X_ Yes ___ No

If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State.

10 Emission Point List and Annual Emission Rate Table AAE- Section 10 -

Complete the following Emission Point List with the emission point number and description for each emission point. Include also, the associated operating rate or tank capacity and the operating schedule. List all Insignificant Activities under the appropriate heading. For sources claimed to be insignificant based on size or emission rate (LAC 33:III.501.B.5.A), information must be supplied to verify each claim.

Complete the following Annual Emission Rates Table by emission point ID or identifier with the annual emission rates for each appropriate pollutant. Include speciation data as available. Calculate totals for each pollutant and speciation data. List all General Condition XVII Activities under the appropriate heading. Emissions must be listed for each activity. Do not include emissions from Gerneral Condition XVII Activities in the totals.

EMISSION POINT LIST

List each emission point. Use unique ID numbers. Consult instructions.

Emission Point No.	Description	Operating Rate (max) or Tank Capacity	Operating Schedule		
			H/D	D/W	W/Y
UTL15	**No. 3 Boiler**	**285.3 MMBtu/hr**	**24**	**7**	**52**
UTL16	**No. 6 Boiler**	**285.3 MM Btu/hr**	**24**	**7**	**52**
UTL18	**Boilers 3 & 6 Fugitives**	**N/A**	**24**	**7**	**52**

Insignificant Activities List

ANNUAL EMISSION RATES

UTILITIES PLANT BOILERS 3 & 6

BASF CORPORATION

GEISMAR, ASCENSION PARISH, LOUISIANA

Permitted Emission Rates are Listed in Tons per Year

Emission Point	PM_{10}	SO_2	NO_X	CO		VOC	Other	
UTL15	11.52	0.71	181.20	99.34		8.60		
					Butanol, n-	2.13	Sulfur Trioxide	0.03
					Formaldehyde	0.09		
					Hexane, n-	2.13		
					Methanol	4.41		
UTL16	10.21	0.78	272.56	109.27		7.15		
					Butanol, n-	0.69	Sulfur Trioxide	0.03
					Formaldehyde	0.10		
					Hexane, n-	2.34		
					Methanol	1.42		
					Toluenediamine	2.03		
					Toluidine, o-	0.02		
UTL18	-	-	-	0.34		0.19		
					Toluenediamine	0.15		
					Toluidine, o-	< 0.01		

ANNUAL EMISSION RATES

UTILITIES PLANT BOILERS 3 & 6

BASF CORPORATION

GEISMAR, ASCENSION PARISH, LOUISIANA

Permitted Emission Rates are Listed in Tons per Year

Emission Point	PM_{10}	SO_2	NO_X	CO	VOC	Other	
Totals	**PM_{10}**	**SO_2**	**NO_X**	**CO**	**VOC**	**Other**	
	21.73	**1.49**	**453.76**	**208.95**	**15.94**	Sulfur Trioxide	0.06

VOC Speciation (TPY)

VOC Toxic Air Pollutants		
Butanol, n-	2.82	
Formaldehyde	0.19	
Hexane, n-	4.47	
Methanol	5.83	
Toluenediamine	2.18	
Toluidine, o-	0.03	
Total Toxic VOC		**15.52**
Other VOC		**0.42**
Total VOC		**15.94**

General Condition XVII Activities List

	Activity/ Event Frequency	Quantity
Miscellaneous Routine Activities		
Boiler No. 3 & 6 Fuel Oil Test Firing	3 hrs/yr	<0.1 tpy SO3
Boiler No. 3 & 6 Fuel Oil Test Firing	3 hrs/yr	<0.1 Total VOC
Boiler No. 3 & 6 Fuel Oil Test Firing	3 hrs/yr	<1 tpy NOX
Boiler No. 3 & 6 Fuel Oil Test Firing	3 hrs/yr	<0.1 tpy CO
Boiler No. 3 & 6 Fuel Oil Test Firing	3 hrs/yr	<1 tpy SO2
Boiler No. 3 & 6 Fuel Oil Test Firing	3 hrs/yr	<0.1 tpy PM

11 APPLICABLE REGULATIONS, AIR POLLUTION CONTROL MEASURES, MONITORING, AND RECORDKEEPING

List in the following Tables 1-5, by emission point ID or identifier, state and federal pollution abatement programs and describe how compliance with these programs will be achieved, including test methods that will be used.

See the Matrix (Table 4.1) and Tables 4.2, 4.3, and 4.4 of Section 4.0 of this document.

12 COMPLIANCE HISTORY/STATUS/CERTIFICATION - See instructions

The Utilities Plant Boilers 3 & 6 have been in compliance with existing standards since startup.

BASF will submit a compliance certification annually in accordance with LAC 33:III.517.B.2.

For requirements promulgated as of the date of this certification with compliance dates effective during the permit term, I further certify that the company and facility referenced in this application will comply with such requirements on a timely basis and will continue to comply with such requirements.

CERTIFICATION: I certify, under provisions in Louisiana and United States law which provide criminal penalities for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Application for Approval of Emissions for Air Pollutants, including all attachments thereto, and the compliance statement above, are true, accurate, and complete.

CERTIFICATION: I certify that the engineering calculations, drawings and design are true and accurate to the best of my knowledge.

13 PERSONNEL

a. Responsible Official

Name **Mike Cohen**		
Title **General Manager & Sr. VP of Tech. Engr. Services**		
Company **BASF Corporation**		
Suite, mail drop, or division		
Street or P.O. Box **P.O. Box 457**		
City **Geismar**	State **LA**	Zip **70734-0457**
Business phone **(225) 339-7300**		

b. Professional Engineer

Name **Brad Bates, P.E.**		
Title **Sr. Environmental Engineer**		
Company **Eagle Environmental Services, Inc.**		
Suite, mail drop, or division		
Street or P.O. Box **121 McCarey Street**		
City **Shreveport**	State **LA**	Zip **71106-**
Business phone **(318) 868-[illegible]**		

STATE OF LOUISIANA
BRADLEY E. BATES
REG. No. 27124
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

Signature of Responsible Official(s) (See 40 CFR 70.2) Mike Cohen	Signature of Professional Engineer
Date January 23rd 2007	Date 1/18/07
	Louisiana Registration No. **27124**
Date	

SECTION 3.0

EMISSION INVENTORY QUESTIONNAIRE

Department of Environmental Quality
Office of Environmental Services
Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
(225) 219-3181

LOUISIANA
Emission Inventory Questionnaire (EIQ) for Air Pollutants

1 Please Type or Print			For Permit Section Use Only
	Company Name: **BASF Corporation**	☑ Owner ☑ Operator	
	Parent Company (if Company Name given above is a division)		
	Plant Name (if any): **Utilities Plant Boilers 3 & 6**		
	Nearest Town: **Geismar**	Parish Where Located: **Ascension**	
	Agency Interest Number: **2049**	CDS Number: **0180-0013**	

2 TYPE OF EIQ
☑ a. *ONLY* presently existing emissions
☐ b. *BOTH* proposed additional emissions associated with an emissions application for a permit, variance, or exemption *AND* presently existing emissions expected to be still existing after facility or modification described in application becomes operational

3 CONFIDENTIALITY ☐ If you are requesting confidentiality for all information, except air pollutant emission rates, check box. (You must attach justification for conidentiality request).

4 ORGANIZATIONAL ACTVITIES

Days of the week normally NOT operating: ☐ Mon ☐ Tue ☐ Wed ☐ Thu ☐ Fri ☐ Sat ☐ Sun

Days per year facility typically operates: **365**

Peak production season (list months):

Daily operating schedule: ☑ 24-hours OR specify number of hours _____

Approximate number of employees at this location: **1000**

Details of facilities that, as a whole, operate intermittently:

N/A

Ownership:

☑ Corporation, partnership, or sole proprietorship ☐ Regulated utility ☐ Municipal government

☐ State government ☐ Federal government ☐ Other; specify

Industrial category - indicate Standard Industrial Classification (SIC) Code(s) that apply to facility:

4961

Description of operation with emphasis on air pollution sources. Use attachments if more space is needed.

BASF operates the Utilities Plant Boilers 3 and 6 the Geismar Site. These boilers burn a combination of waste fuels and natural gas.

EIQ - Section 5- Page 1

5 SUMMARY OF EMISSIONS FOR ENTIRE FACILITY AS A WHOLE

Rates given should correspond in most cases to the sum of the individual average rates of the point sources listed on the Single Source/Area Source forms.

Category	Emission Rate (lbs/hr)	Emission Rate (tons/year)
a. Particulate Matter		
Particulate Matter	**4.96**	**21.73**
Total Particulate Matter	**4.96**	**21.73**
b. Sulfur Dioxide	**0.34**	**1.49**
c. Nitrogen Oxides	**103.60**	**453.76**
d. Carbon Monoxide	**47.71**	**208.95**
e. Volatile Organic Compounds		
Total VOC (incl. those listed below)	**3.63**	**15.94**
f. Toxic compounds regulated under LAC 33:III.Chapter 51		
Butanol, n-	**0.65**	**2.82**
Formaldehyde	**0.04**	**0.19**
Hexane, n-	**1.02**	**4.47**
Methanol	**1.33**	**5.83**
Toluenediamine	**0.49**	**2.18**
Toluidine, o-	**0.01**	**0.03**

g. Facility Methane/Ethane

6 PERSONNEL & CERTIFICATION

a. Manager of facility on location at plant site

Name **Mike Cohen**		
Title **General Manager & Sr. VP of Tech. Engr. Services**		
Company **BASF Corporation**		
Suite, mail drop, or division		
Street or P.O. Box **P.O. Box 457**		
City **Geismar**	State **LA**	Zip **70734-0457**
Business phone **(225) 339-7300**		

b. Person to contact at site about air pollution control

Name **Craig Tyndall**		
Title **EHS Team Leader**		
Company **BASF Corporation**		
Suite, mail drop, or division		
Street or P.O. Box **P.O. Box 457**		
City **Geismar**	State **LA**	Zip **70734-0457**
Business phone **(225) 339-2416**		

c. Headquarters or other off-site contact (see instructions)

Name		
Title		
Company		
Suite, mail drop, or division		
Street or P.O. Box		
City	State	Zip
Business phone		

d. Person who prepared this report

☐ a. ☐ b. ☐ c. ☑ Other (Specify below)

Name **Jim Schulze**		
Title **Project Manager - Air Quality Services**		
Company **Eagle Environmental Services, Inc.**		
Suite, mail drop, or division		
Street or P.O. Box **18369 Petroleum Drive**		
City **Baton Rouge**	State **LA**	Zip **70809-6124**
Business phone **(225) 757-0870**		

Signature of Responsible Official(s). See 40 CFR 70.2

Mike Cohen

Date

January 23rd 2007

Date

CERTIFICATION: I certify, under provisions in Louisiana and United States law which provide criminal penalities for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Emission Inventory Questionnaire (EIQ) for Air Pollutants, including all attachments thereto, are true, accurate, and complete.

Department of Environmental Quality
Office of Environmental Services
Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
(225) 219-3181

LOUISIANA

SINGLE POINT SOURCE / AREA SOURCE
Emission Inventory Questionnaire (EIQ)
for Air Pollutants

Company name	Plant location and name (if any)		Date of submittal
BASF Corporation	**Utilities Plant**	**Geismar**	**January 2007**

Source ID Number	Descriptive name of the equipment served by this stack or vent	Location of stack or vent (see instructions on how to determine location of area sources).
UTL15	**No. 3 Boiler**	UTM Zone No. **15** Horizontal coordinate: **693000 mE** Vertical coordinate: **3342000 mN**

Stack and discharge physical characteristics	Height of stack above grade (ft)	Diameter (ft) or stack discharge area (ft 2)	Stack gas exit temperature (°F)	Stack gas flow at process conditions, not at standard (cfm)	Stack gas exit velocity (ft/sec)	Date of construction /modification	Operating rate (max) or tank capacity (gals)
Change ☐ Yes ☑ No	**75.0**	**32.3 ft^2**	**400**	**82,050**	**48.2**	**1958**	**285.3 MMBtu/hr**

Fuel		Type of fuel used and heat input (see instructions)		Operating Characteristics	Percent of annual throughput of pollutants through this emission point				Normal operating time of this point			Normal operating rate
		Type of fuel	Heat input (MMBtu/hr)		Dec-Feb	Mar-May	Jun-Aug	Sep-Nov	hrs/ day	days/ week	weeks/ year	
>>	a	**Natural Gas**	**285.3**	>>	**25**	**25**	**25**	**25**	**24**	**7**	**52**	* *
	b	**No. 2, No. 6 Fuel Oil**	**274.1**									
	c	**Auxiliary Fuel**	*									

Air Pollutant Specific Information

Pollutant	Control equipment code	Control equipment efficiency %	Emission Rate Average (lbs/hr)	Emission Rate Maximum (lbs/hr)	Emission Rate Annual (tons/yr)	Emission estimation method	Add, change, delete code	Concentration in gases exiting at stack	
Particulate Matter	**000**	**0.0000**	**2.63**	**17.55**	**11.52**	**3**	**C**	**N/A**	gr/std ft^3
Sulfur Dioxide	**099**	**0.0000**	**0.16**	**109.9**	**0.71**	**3**	**C**	**N/A**	ppm by vol
Sulfur Trioxide	**000**	**0.0000**	**< 0.01**	**3.99**	**0.03**	**3**	**A**	**N/A**	ppm by vol
Nitrogen Oxides	**099**	**0.0000**	**41.37**	**47**	**181.20**	**3**	**C**	**N/A**	ppm by vol
Carbon Monoxide	**000**	**0.0000**	**22.68**	**22.68**	**99.34**	**3**	**C**	**N/A**	ppm by vol
Total VOC (incl. those listed below)	**000**	**0.0000**	**1.96**	**1.96**	**8.60**	**3**	**C**	**N/A**	ppm by vol
Butanol, n-	**022**	**99.9900**	**0.49**	**0.49**	**2.13**	**3**	**C**	**N/A**	ppm by vol
Formaldehyde	**000**	**0.0000**	**0.02**	**0.02**	**0.09**	**3**	**A**	**N/A**	ppm by vol
Hexane, n-	**000**	**0.0000**	**0.49**	**0.49**	**2.13**	**3**	**A**	**N/A**	ppm by vol
Methanol	**022**	**99.9900**	**1.01**	**1.01**	**4.41**	**3**	**C**	**N/A**	ppm by vol

Department of Environmental Quality Office of Environmental Services Permits Division P.O. Box 4313 Baton Rouge, LA 70821-4313 (225) 219-3181	**LOUISIANA** SINGLE POINT SOURCE / AREA SOURCE Emission Inventory Questionnaire (EIQ) for Air Pollutants	

Company name	Plant location and name (if any)		Date of submittal
BASF Corporation	**Utilities Plant**	**Geismar**	**January 2007**

Source ID Number	Descriptive name of the equipment served by this stack or vent	Location of stack or vent (see instructions on how to determine location of area sources).
UTL15	**No. 3 Boiler**	Horizontal coordinate: **693000** **mE** UTM Zone No. **15** Vertical coordinate: **3342000** **mN**

* Consists of 1,4 BD alcohols, mixed alcohols, poly THF waste, light ends and methanol, and offgas.
No 2 or No. 6 Fuel Oil 16.56 MM gals/yr, as an alternate fuel.
** Natural gas 2,365 MM scf/yr.

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LOUISIANA

SINGLE POINT SOURCE / AREA SOURCE
Emission Inventory Questionnaire (EIQ)
for Air Pollutants

Company name	Plant location and name (if any)		Date of submittal
BASF Corporation	**Utilities Plant**	**Geismar**	**January 2007**

Source ID Number	Descriptive name of the equipment served by this stack or vent	Location of stack or vent (see instructions on how to determine location of area sources).
UTL16	**No. 6 Boiler**	UTM Zone No. **15** Horizontal coordinate: **693000 mE** Vertical coordinate: **3342000 mN**

Stack and discharge physical characteristics	Height of stack above grade (ft)	Diameter (ft) or stack discharge area (ft 2)	Stack gas exit temperature (°F)	Stack gas flow at process conditions, not at standard (cfm)	Stack gas exit velocity (ft/sec)	Date of construction /modification	Operating rate (max) or tank capacity (gals)
Change ☐ Yes ☑ No	75.0	32.29 ft^2	400	82,050	48.2	1958	285.3 MM Btu/hr

Fuel		Type of fuel used and heat input (see instructions)		Operating Characteristics	Percent of annual throughput of pollutants through this emission point				Normal operating time of this point			Normal operating rate
		Type of fuel	Heat input (MMBtu/hr)		Dec-Feb	Mar-May	Jun-Aug	Sep-Nov	hrs/ day	days/ week	weeks/ year	
>>	a	**Natural Gas**	**285.3**	>>	**25**	**25**	**25**	**25**	**24**	**7**	**52**	**
	b	**No. 2, No. 6 Fuel Oil**	**273.7**									
	c	**Auxiliary Fuel**	*									

Air Pollutant Specific Information

Pollutant	Control equipment code	Control equipment efficiency %	Emission Rate Average (lbs/hr)	Emission Rate Maximum (lbs/hr)	Emission Rate Annual (tons/yr)	Emission estimation method	Add, change, delete code	Concentration in gases exiting at stack	
Particulate Matter	000	0.0000	2.33	10	10.21	3	C	N/A	gr/std ft^3
Sulfur Dioxide	000	0.0000	0.18	109.9	0.78	3	C	N/A	ppm by vol
Sulfur Trioxide	000	0.0000	0.01	3.99	0.03	3	C	N/A	ppm by vol
Nitrogen Oxides	000	0.0000	62.23	150	272.56	3		N/A	ppm by vol
Carbon Monoxide	000	0.0000	24.95	24.95	109.27	3	C	N/A	ppm by vol
Total VOC (incl. those listed below)	000	0.0000	1.63	1.63	7.15	3	C	N/A	ppm by vol
Butanol, n-	022	99.9900	0.16	0.16	0.69	2	C	N/A	ppm by vol
Formaldehyde	000	0.0000	0.02	0.02	0.10	3	A	N/A	ppm by vol
Hexane, n-	000	0.0000	0.53	0.53	2.34	3	A	N/A	ppm by vol
Methanol	022	99.9900	0.32	0.32	1.42	2	C	N/A	ppm by vol

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LOUISIANA

SINGLE POINT SOURCE / AREA SOURCE
Emission Inventory Questionnaire (EIQ)
for Air Pollutants

Company name	Plant location and name (if any)		Date of submittal
BASF Corporation	**Utilities Plant**	**Geismar**	**January 2007**

Source ID Number	Descriptive name of the equipment served by this stack or vent	Location of stack or vent (see instructions on how to determine location of area sources).
UTL16	**No. 6 Boiler**	UTM Zone No. **15** Horizontal coordinate: **693000** **mE** Vertical coordinate: **3342000** **mN**

Air Pollutant Specific Information

Pollutant	Control equipment code	Control equipment efficiency %	Emission Rate Average (lbs/hr)	Emission Rate Maximum (lbs/hr)	Emission Rate Annual (tons/yr)	Emission estimation method	Add, change, delete code	Concentration in gases exiting at stack
Toluenediamine	**022**	**99.9900**	**0.46**	**0.46**	**2.03**	**2**	**C**	**N/A** ppm by vol
Toluidine, o-	**022**	**99.99**	**< 0.01**	**< 0.01**	**0.02**	**2**	**A**	**N/A** ppm by vol

* Consists of mixed alcohols and TDA vicinals.
** Natural gas 2,602 MM scf/yr.
No. 2 or No. 6 fuel oil 17.60 MM gals/yr, as an alternate fuel.

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LOUISIANA

SINGLE POINT SOURCE / AREA SOURCE
Emission Inventory Questionnaire (EIQ)
for Air Pollutants

Company name	Plant location and name (if any)		Date of submittal
BASF Corporation	**Utilities Plant**	**Geismar**	**January 2007**

Source ID Number	Descriptive name of the equipment served by this stack or vent	Location of stack or vent (see instructions on how to determine location of area sources).
UTL18	**Boilers 3 & 6 Fugitives**	UTM Zone No. **15** Horizontal coordinate: **693000 mE** Vertical coordinate: **3342000 mN**

Stack and discharge physical characteristics	Height of stack above grade (ft)	Diameter (ft) or stack discharge area (ft 2)	Stack gas exit temperature (°F)	Stack gas flow at process conditions, not at standard (cfm)	Stack gas exit velocity (ft/sec)	Date of construction /modification	Operating rate (max) or tank capacity (gals)
Change ☐ Yes ☑ No	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Fuel	Type of fuel used and heat input (see instructions)		Operating Characteristics	Percent of annual throughput of pollutants through this emission point				Normal operating time of this point			Normal operating rate
	Type of fuel	Heat input (MMBtu/hr)		Dec-Feb	Mar-May	Jun-Aug	Sep-Nov	hrs/ day	days/ week	weeks/ year	
>> a	N/A	N/A	>>	25	25	25	25	24	7	52	N/A
b											
c											

Air Pollutant Specific Information

Pollutant	Control equipment code	Control equipment efficiency %	Emission Rate Average (lbs/hr)	Emission Rate Maximum (lbs/hr)	Emission Rate Annual (tons/yr)	Emission estimation method	Add, change, delete code	Concentration in gases exiting at stack
Carbon Monoxide	000	0.00	0.08	0.08	0.34	3	A	N/A ppm by vol
Total VOC (incl. those listed below)	000	0.00	0.04	0.04	0.19	3	A	N/A ppm by vol
Other VOC	000	0.00	0.01	0.01	0.03	3	A	N/A ppm by vol
Toluenediamine	000	0.00	0.03	0.03	0.15	3	A	N/A ppm by vol
Toluidine, o-	000	0.00	< 0.001	< 0.001	< 0.01	3	A	N/A ppm by vol

SECTION 4.0

REGULATORY APPLICABILITY

UTILITIES PLANT BOILERS 3 & 6
BASF CORPORATION
GEISMAR, ASCENSION PARISH, LOUISIANA

TABLE 4.1: APPLICABLE LOUISIANA AND FEDERAL AIR QUALITY REQUIREMENTS

Emission Point/ID	Source Description	NSPS Subparts (40 CFR 60)				NESHAP (40 CFR 61)			NESHAP (40 CFR Part 63)							40 CFR 52	40 CFR 64	40 CFR 68	40 CFR 82	State Regulations (LAC 33:III.Chapter)									
		A	D	Kb	VV	A	M	FF	A	F	G	H	Y	EEE	DDDDD					5	9	11	13	15	21	22	51	56	59
UTL15	No. 3 Boiler (B-3)		3											1	2		2					1	1	2		2	1		
UTL16	No. 6 Boiler (B-6)		1											1	2		2					1	1	2		2	1		
UTL18	Boilers 3 and 6 Fugitives				2																				2		1		
N/A	Facility	2				1	2	1	1									1			1				1		1	1	1

Key To Matrix: 1 - Current Applicable Requirement 2 - Potentially Applicable Requirement 3 - Clarification of Non-Applicability blank - Not Applicable

UTILITIES PLANT BOILERS 3 & 6
BASF CORPORATION
GEISMAR, ASCENSION PARISH, LOUISIANA

TABLE 4.2: STATE AND FEDERAL AIR QUALITY REGULATIONS

EMISSION SOURCE	APPLICABLE REQUIREMENT	COMPLIANCE METHOD/PROVISION	NOTES
UTL15 Boiler No. 3	Control of Air Pollution from Smoke (LAC 33:III.1101)	Emissions of smoke shall be controlled so shade is not darker than 20% opacity, except for one six-minute period in any 60 consecutive minutes.	
	Emission Standards for Particulate Matter (LAC 33:III.1313)	Emissions of particulate matter shall not exceed 0.6 pounds per million Btu of heat input.	Good combustion practices will be utilized. Fuel burning equipment utilized for the purpose of indirect heating where the products of combustion do not have direct contact with the process materials.
	Emission Standards for Sulfur Dioxide – Emission Limitations (LAC 33:III.1503)	**EXEMPT.** Units emit less than 250 tons per year of sulfur compounds.	
	Control of Emissions of Nitrogen Oxides (NO_x) (LAC 33:III.2201)	**EXEMPT.** Boilers and industrial furnaces treating hazardous waste and regulated under 40 CFR Part 264, 265, or 266 are exempted from the provisions of this chapter.	
	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Compliance with NESHAP Subpart EEE is considered MACT for purposes of LAC Chapter 51.	
	NSPS Subpart D – Standards of Performance for Steam Generating Units (40 CFR 60.40)	**DOES NOT APPLY,** per 40 CFR 60.41. Boiler was constructed prior to 1971.	
	NESHAP Subpart EEE – Hazardous Waste Combustor (HWC) MACT (40 CFR 63.1200)	BASF will comply with the thermal based or concentration based emission standards for carbon monoxide, hydrocarbons, mercury, cadmium/lead, chromium, particulate matter, and HCL/chlorine.	Compliance date is October 14, 2008.
	NESHAP Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63.7490 through 7575)	**EXEMPT.** A boiler or process heater required to have a permit under Section 3005 of the Solid Waste Disposal Act or covered by 40 CFR Part 63, Subpart EEE is not subject to this subpart, per 40 CFR 63.7491(d).	
	Compliance Assurance Monitoring (40 CFR 64)	**DOES NOT APPLY.** Unit does not use a control device to achieve compliance with applicable emission limitations and/or standards.	
UTL16 Boiler No. 6	Control of Air Pollution from Smoke (LAC 33:III.1101)	Emissions of smoke shall be controlled so shade is not darker than 20% opacity, except for one six-minute period in any 60 consecutive minutes.	
	Emission Standards for Particulate Matter (LAC 33:III.1313)	Emissions of particulate matter shall not exceed 0.6 pounds per million Btu of heat input.	Good combustion practices will be utilized. Fuel burning equipment utilized for the purpose of indirect heating where the products of combustion do not have direct contact with the process materials.
	Emission Standards for Sulfur Dioxide – Emission Limitations (LAC 33:III.1503)	**EXEMPT.** Units emit less than 250 tons per year of sulfur compounds.	

TABLE 4.2: STATE AND FEDERAL AIR QUALITY REGULATIONS

EMISSION SOURCE	APPLICABLE REQUIREMENT	COMPLIANCE METHOD/PROVISION	NOTES
UTL16 Boiler No. 6 (continued)	Control of Emissions of Nitrogen Oxides (NO_x) (LAC 33:III.2201)	**EXEMPT.** Boilers and industrial furnaces treating hazardous waste and regulated under 40 CFR Part 264, 265, or 266 are exempted from the provisions of this chapter.	
	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.Chapter 51)	Compliance with NESHAP Subpart EEE is considered MACT for purposes of LAC Chapter 51.	
	NSPS Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generators (40 CFR 60.40)	Maintain opacity to less than or equal to 20%, particulate matter to less that or equal to 0.10 lb/MM Btu, SO2 and NOx to less than or equal to 0.20 lb/MM Btu for gaseous fossil fuel and 0.30 lb/MM Btu for liquid fossil fuels.	
	NESHAP Subpart EEE – Hazardous Waste Combustor (HWC) MACT (40 CFR 63.1200)	BASF will comply with the thermal based or concentration based emission standards for carbon monoxide, hydrocarbons, mercury, cadmium/lead, chromium, particulate matter, and HCL/chlorine.	Compliance date is October 14, 2008.
	NESHAP Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63.7490 through 7575)	**EXEMPT.** A boiler or process heater required to have a permit under Section 3005 of the Solid Waste Disposal Act or covered by 40 CFR Part 63, Subpart EEE is not subject to this subpart, per 40 CFR 63.7491(d).	
	Compliance Assurance Monitoring (40 CFR 64)	**DOES NOT APPLY.** Unit does not use a control device to achieve compliance with applicable emission limitations and/or standards.	
UTL18 Fugitives	Fugitive Emission Control for Ozone Non-attainment Areas (LAC 33:III.2122)	**DOES NOT APPLY.** The Utilities Plant does not meet the definition of an affected source, per LAC 33:III.2122.A.1.	
	NSPS Subpart VV – Equipment Leaks of VOC in the SOCMI (40 CFR 60.480)	**DOES NOT APPLY.** The Utilities Plant does not produce, as an intermediate or final product, any of the chemicals listed in Subpart VV.	
	Comprehensive Toxic Air Pollutant Emission Control Program – MACT (LAC 33:III.5109.A) - STATE ONLY -	Toluenediamine is a Class II TAP. Monitor for leaks in accordance with RCRA Subpart BB. Determined as MACT.	
N/A Facility	Emission Inventory (LAC 33:III.919)	Submit emission inventory (AES) by March 31st each year for the period January 1st to December 31st of previous year.	Certification must accompany submittal. Actual and allowable emissions must be included.
	Housekeeping (LAC 33:III.2113)	Best practical housekeeping and maintenance practices must be maintained at the highest possible standards to reduce the quantity of organic compound emissions. Emissions of organic compounds must be reduced wherever feasible.	Housekeeping Plan

TABLE 4.2: STATE AND FEDERAL AIR QUALITY REGULATIONS

EMISSION SOURCE	APPLICABLE REQUIREMENT	COMPLIANCE METHOD/PROVISION	NOTES
N/A Facility (continued)	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.5107 and 5109) -STATE ONLY-	Impact of TAP emissions on air quality shall be below the Ambient Air Standard (AAS). Submit TEDI report by July 1st each year for the preceding calendar year. Submit required discharge reports. Maintain on site a copy of any Standard Operating Procedure developed after achieving or demonstrating compliance with the standards specified in this subchapter.	
	Prevention of Air Pollution Emergency Episodes (LAC 33:III.5609 and 5611)	Develop and maintain a standby plan for emissions reduction during Air Pollution Emergency Episodes.	BASF has prepared the required standby plan in accordance with the objectives set forth in Tables 5, 6 and 7.
	Chemical Accident Prevention and Minimization of Consequences (LAC 33:III.Chapter 59)	Risk Management Plan has been submitted and will be updated as required.	BASF is registered with the LDEQ per LAC 33:III.5911.
	NESHAP Subpart A – General Provisions (40 CFR 61.01 through 19)	All affected (NESHAP) stationary sources shall comply with applicable provisions of this Subpart.	
	NESHAP for Asbestos (40 CFR 61, Subpart M)	File notification prior to demolition or renovation per 40 CFR 61.145.	
	NESHAP Subpart FF – National Emission Standards for Waste Operations (40 CFR 61.356(a) and (b)(1) and 61.357(a) and (b) or (c))	**RECORDKEEPING/REPORTING ONLY.** Maintain records and report as required by 40 CFR 61.355(a)(4) or (5).	Facility Wastewater Operations The Utilities Plant handles less than 10 Mg/year of benzene waste.
	NESHAP (HON) Subpart A – General Provisions (40 CFR 63.1 through 15)	All affected (HON) stationary sources shall comply with applicable provisions of this Subpart.	
	Part 68 – Chemical Accident Prevention Provisions (40 CFR 68)	Sources that contain regulated substances above their threshold quantity shall comply with the provisions of 40 CFR 68.	Risk Management Plan submitted, and will be updated as required.

UTILITIES PLANT BOILERS 3 & 6
BASF CORPORATION
GEISMAR, ASCENSION PARISH, LOUISIANA

TABLE 4.3: COMPLIANCE MONITORING DEVICES, ACTIVITIES, OR METHODS

EMISSION SOURCE	APPLICABLE REQUIREMENT	MONITORING, REPORTING, AND RECORDKEEPING (MRR) METHODS/PROVISIONS	NOTES
UTL15 Boiler No. 3 **UTL16** Boiler No. 6	Control of Air Pollution from Smoke (LAC 33:III.1101) Emission Standards for Particulate Matter (LAC 33:III.1313)	Control the emission of smoke or particulate matter so that the shade or appearance of the emission is not denser than 20 percent average opacity, except the emissions may have an average opacity in excess of 20 percent for not more than one 6-minute period in any 60 consecutive minutes.	
	NESHAP Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63.7490 through 7575)	*Establish maximum feed rate and measure metals and HCL/Cl_2* concentrations in waste feed and heating value of each stream on a quarterly basis. Operate CEM to measure CO concentration with interlock waste feed cutoff to stop waste streams when 1-hr rolling average exceeds limit. Demonstrate hydrocarbon concentration below limit during performance test. Also, establish PM operating limits for maximum stack gas flow and ash feed rate, DRE operating limits for minimum combustion chamber temperature, minimum steam or natural gas (No. 6) atomization pressure, and maximum waste feed and stack gas flow rates during performance test.	*Monitoring and Recordkeeping*
UTL16 Boiler No. 6	NSPS Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generators (40 CFR 60.45(a))	Monitor and record sulfur content in fuel.	Monitoring, Recordkeeping and Reporting Performance test demonstrates that NOx emissions are <70% of applicable standard. Therefore a CMS for NOx is not required per 40 CFR 60.45(b)(3).
UTL18 Fugitives	Comprehensive Toxic Air Pollutant Emission Control Program – MACT (LAC 33:III.5109.A) - STATE ONLY -	Monitor components in toluenediamine service for leaks in accordance with RCRA Subpart BB.	Monitoring, Recordkeeping and Reporting
N/A Facility	Emission Inventory (LAC 33:III.919)	Submit emission inventory (AES) by March 31st each year for the period January 1st to December 31st of previous year.	Recordkeeping and Reporting
	Comprehensive Toxic Air Pollutant Emission Control Program (LAC 33:III.5107 and 5109) -STATE ONLY-	Submit TEDI report by July 1st each year for the preceding calendar year. Submit required discharge reports.	
	NESHAP Subpart FF – National Emission Standards for Waste Operations (40 CFR 61.356(a) and (b)(1) and 40 CFR 61.357(a) and (b) or (c))	*Determine total annual benzene quantity from facility waste in* accordance with 40 CFR 61.355(a)(1) and (2). Maintain records as required in 40 CFR 61.355(a)(4) or (5). Report in accordance with 40 CFR 61.355(a)(4) or (5) as required by 40 CFR 61.357(a) and (b) or (c).	Recordkeeping and Reporting Facility Wastewater Operations Facility handles less than 10 Mg per year of benzene waste. Report submitted annually and whenever there is a change in the process generating the benzene waste stream.

UTILITIES PLANT
BASF CORPORATION
ASCENSION PARISH, LOUISIANA

TABLE 4.4: COMPLIANCE TESTING REQUIREMENTS

EMISSION SOURCE	APPLICABLE COMPLIANCE TEST METHOD	CRITERIA BEING TESTED	NOTES
UTL15 & UTL16 Boiler No. 3 and No. 6	Method 7E of 40 CFR Part 60, Appendix A	Determination of nitrogen oxides emissions from stationary sources.	
	Method 9 of 40 CFR Part 60, Appendix A	Visual determination of the opacity of emissions from stationary sources.	
	Method 10 of 40 CFR Part 60, Appendix A	Determination of carbon monoxide emissions from stationary sources.	
	Method 17 of 40 CFR Part 60, Appendix A	Determination of particulate emissions from stationary sources.	
	Method 18 or 25 of 40 CFR Part 60, Appendix A	Measurement of gaseous organic compound emissions.	
	Method 26 of 40 CFR Part 60, Appendix A	Determination of hydrogen chloride emissions from stationary sources.	
	Method 29 of 40 CFR Part 60, Appendix A	Determination of metals emissions from stationary sources.	

UTILITIES PLANT BOILER 3 & 6
BASF CORPORATION
GEISMAR, ASCENSION PARISH, LOUISIANA
TABLE 4.5 – EQUIPMENT LIST

EMISSION POINT/IDENTIFIER	DESCRIPTION	NOTES
UTL15	Boiler No. 3	Auxiliary fuels consist of 1,4 BD alcohols, mixed alcohols, poly THF waste, light ends, methanol, acetylene off gas, and No. 2 and No. 6 fuel oil.
UTL16	Boiler No. 6	Auxiliary fuels consist of mixed alcohols, TDA vicinals, and No. 2 and No. 6 fuel oil.
UTL18	Fugitives	

SECTION 5.0

CALCULATION METHODOLOGY

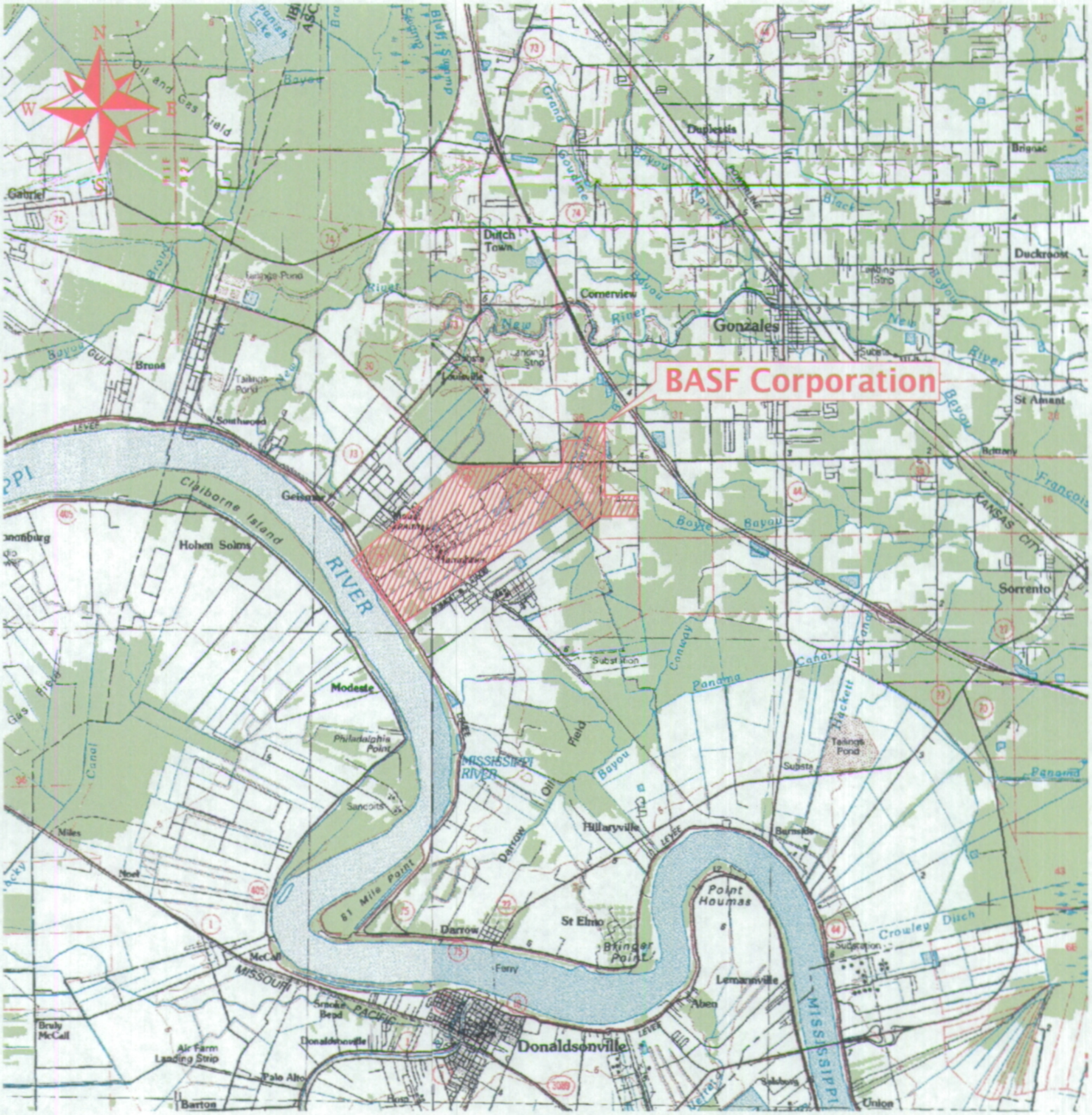
5.0 CALCULATION METHODOLOGY

The "potential-to-emit" for each source is based on published emission factors, material balance calculations, stack testing data, process simulations, emissions software, and process data. Published emission factors include those from the *Compilation of Air Pollutant Emission Factors* (AP-42) and *Protocol for Equipment Leak Emission Estimates*, EPA-453/R-95-017. Calculations include any physical or operational limitation on the capacity of the source to emit pollutants; this includes air pollution control equipment and the type or amount of material combusted or processed. Emission calculations for emission sources are included in Appendix A.

Emissions from the boilers were based on AP-42 emission factors with the exception of Boiler No. 3 where burner manufacturer data were utilized for NO_x emissions.

FIGURE 1

LOCATION MAP



0 2 4

SCALE: 1" = 2 miles

Reference Map:

Base map taken from U.S.G.S. Topographic Maps "Baton Rouge, Louisiana" and "Ponchatoula, Louisiana", dated 1984 and 1983 respectively, at a scale of 1:100,000.

BASF Corporation

Geismar, Louisiana

Location Map

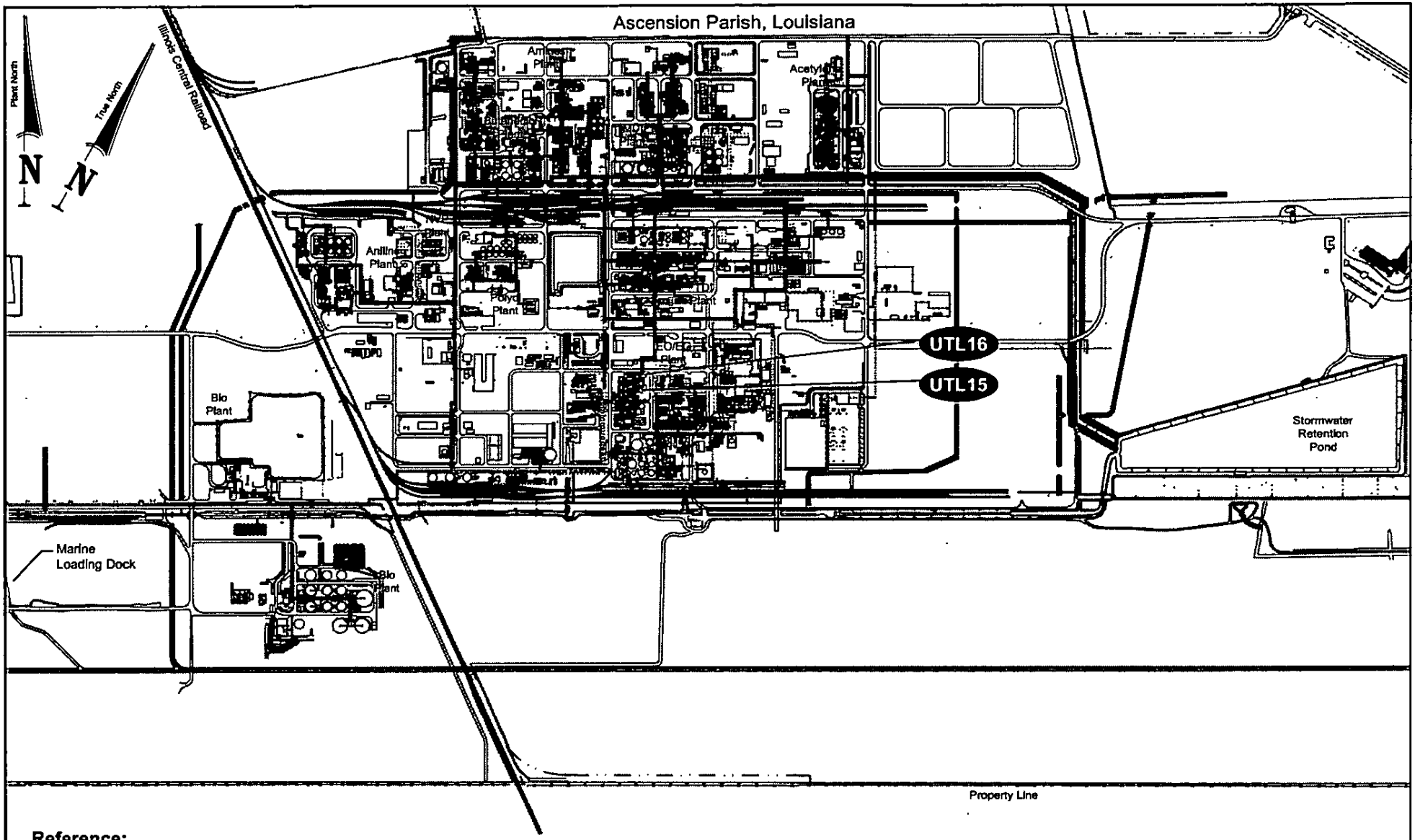
Ascension Parish

E·A·G·L·E

Drawn:	JBH
Checked:	JS
Approved:	JS
Date:	07/05/05
Project No.:	107-0001
Drawing No.:	FIGURE 1

FIGURE 2

SITE PLAN – GEISMAR SITE



Reference:
Base map taken from BASF Corp. Drawing No. 0175-PLT-M1-AB9-002, Dated 12/93.

Legend

UTLXX
WWTXX
Source

1,000 0 1,000
Scale: 1" = 1,000'

BASF
BASF CORPORATION
GEISMAR SITE

DWG. NO. A-42-0054-A002

Site Plan
Utilities Boilers 3 & 6

APPENDIX A

EMISSION SOURCE CALCULATIONS

APPENDIX A

INDEX TO EMISSION SOURCE CALCULATIONS

EMISSION POINT	DESCRIPTION	TAB
UTL15 & 16	BOILERS NO. 3 & 6	1
UTL18	UTILITIES BOILERS 3 & 6 FUGITIVES	2

BOILERS NO. 3 & 6

EMISSION POINTS UTL15 & 16

BASF Corporation - Utilities Plant
No. 3 Boiler - Emission Point UTL15
Natural Gas/Waste Fuel Emission Summary

Pollutant	Average Emission Rate (lbs/hr)	Fuel Type	Maximum Emission Rate (lbs/hr)	Fuel Type	Emissions (tons)
Particulate Matter PM_{10}	2.63	2	17.55	2	11.52
Sulfur dioxide	0.16	1	109.90	3	0.71
Nitrogen oxides	41.37	1	47.00	3	181.2
Carbon monoxide	22.68	1	22.68	1	99.34
Total VOC (incl. below)	1.96	2	1.96	2	8.60
Sulfur trioxide	0.006	1	3.99	3	0.03
Formaldehyde*	0.02	1	0.02	1	0.09
n-Hexane*	0.49	1	0.49	1	2.13
Butanol	0.49	2	0.49	2	2.13
Methanol	1.01	2	1.01	2	4.41

* From natural gas combustion.
The average and annual emission rates represent the highest emissions from each fuel usage scenario with the exclusion of fuel oil. Fuel oil emission rates were considered in the maximum emission rate determination.

Fuel Type Codes:

1 - natural gas
2 - waste fuel with natural gas
3 - fuel oil

BASF Corporation - Utilities Plant
No. 3 Boiler - Emission Point UTL15
Fuel Usage Scenarios and Emission Rates

Natural Gas Only

Pollutant	Natural Gas Emission Factor (lbs/MMscf)	Natural Gas Heat Input (MMscf/hr)	Emission Rate (lbs/hr)
PM_{10}	Based on actual stack test (see No. 3 Emission Summary)		
SO_2	0.6	0.27	0.16
NO_x	See No. 3 Emission Summary		
CO	84	0.27	22.68
VOC	5.5	0.27	1.485
SO_3	0.022	0.27	0.01
Formaldehyde (combustion)	0.08	0.27	0.022
n-Hexane (combustion)	1.8	0.27	0.486

Natural Gas Fired with Waste Fuel Listed Below

Pollutant	Natural Gas Emission Factor (lbs/MMscf)	Natural Gas Heat Input (MMscf/hr)	Emission Rate (lbs/hr)
PM_{10}	Based on actual stack test (see No. 3 Emission Summary)		
SO_2	0.6	0.0982	0.06
NO_x	See No. 3 Emission Summary		
CO	84	0.0982	8.25
VOC	5.5	0.0982	0.54
SO_3	0.022	0.0982	0.002
Formaldehyde (combustion)	0.08	0.0982	0.01
n-Hexane (combustion)	1.8	0.0982	0.18

Offgas

Pollutant	Offgas Emission Factor (lbs/MMscf)	Offgas Heat Input (MMscf/hr)	Emission Rate (lbs/hr)
PM_{10}	Based on actual stack test (see No. 3 Emission Summary)		
SO_2	0.2	0.292	0.06
NO_x	See No. 3 Emission Summary		
CO	13.7	0.292	4.00
VOC	0.5	0.292	0.15

Emission factors are from AP-42, Tables 1.4-1 and 2, Natural Gas Combustion, 02/98
Factors for offgas adjusted to heat input of 350 Btu/scf.

BASF Corporation - Utilities Plant
No. 3 Boiler - Emission Point UTL15
Fuel Usage Scenarios and Emission Rates

Waste Fuel Fired with Natural Gas Above

Pollutant	Mixed Alcohols Emission Factor (lbs/kgal)	Waste Fuel Consumption (kgal/hr)	Emission Rate (lbs/hr)
PM_{10}	Based on actual stack test (see No. 3 Emission Summary)		
SO_2	0	1.68	-
NO_x	See No. 3 Emission Summary		
CO	5	1.68	8.40
VOC	0.76	1.68	1.28
SO_3	0	1.68	-

Waste Fuel Speciated TAP Emissions

Pollutant	Waste Fuel Concentration (%)	Waste Fuel Consumption (lbs/hr)	Emission Rate (lb/hr)
Butanol	40%	12,175	0.49
Methanol	91%	11,056	1.01
		Total TAP VOC	**1.49**

Assumes 99.99% DRE
Emission factors are from AP-42, Tables 1.3-1 and 1.3-3, Fuel Oil Combustion, 09/98.

Fuel Oil (Alternative Fuel)

Pollutant	No. 2 / No. 6 Fuel Oil Emission Factor (lbs/kgal)	No. 2 / No. 6 Fuel Oil Consumption (kgal/hr)	Emission Rate (lbs/hr)
PM_{10}	10	1	10.0
SO_2	109.9	1	109.9
NO_x	47	1	47.0
CO	5	1	5.0
VOC	0.76	1	0.76
SO_3	3.99	1	3.99

SO_2/SO_3 emission factors are based on sulfur = 0.0016% by weight and max. 0.70% by weight.
Emission factors are from AP-42, 02/98 and Tables 1.3-1 and 1.3-3, Fuel Oil Combustion, 09/98.

BASF Corporation - Utilities Plant
No. 3 Boiler - Emission Point UTL15
Natural Gas Combustion - HAP Emission Rates

Natural Gas Heat Input: 0.27 MMscf/hr

Pollutant	Emission Factor ($lbs/10^6$ scf)*	Emission Factor (lbs/MM BTU)	Emission Rate (lb/hr)
2-Methylnaphthalene	0.00002	0.00000002	5.40E-06
3-Methylchloranthrene	0.000002	0.000000002	5.40E-07
7,12-Dimenthylbenz(a)anthracene	0.00002	0.00000002	5.40E-06
Acenaphthene	0.000002	0.000000002	5.40E-07
Acenaphthylene	0.000002	0.000000002	5.40E-07
Anthracene	0.000002	0.000000002	5.40E-07
Benz(a)anthracene	0.000002	0.000000002	5.40E-07
Benzene	0.002	0.000002	5.40E-04
Benzo(a)pyrene	0.000001	0.000000001	2.70E-07
Benzo(b)fluoranthene	0.000002	0.000000002	5.40E-07
Benzo(g,h,i)perylene	0.000001	0.000000001	2.70E-07
Benzo(k)fluoranthene	0.000002	0.000000002	5.40E-07
Chrysene	0.000002	0.000000002	5.40E-07
Dibenzo(a,h)anthracene	0.000001	0.000000001	2.70E-07
Dichlorobenzene	0.001	0.000001	2.70E-04
Fluoranthene	0.000003	0.000000003	8.10E-07
Fluorene	0.000003	0.000000003	8.10E-07
Formaldehyde	0.08	0.00007	2.16E-02
n-Hexane	1.8	0.002	4.86E-01
Indeno(1,2,3-cd)pyrene	0.000002	0.000000002	5.40E-07
Naphthalene	0.0006	0.0000006	1.62E-04
Phenanthrene	0.00002	0.00000002	5.40E-06
Pyrene	0.000005	0.000000005	1.35E-06
Toluene	0.003	0.000003	8.10E-04
		Total Rate	0.509

* From AP-42 Table 1.4-3, 3/98

BASF Corporation - Utilities Plant
No. 6 Boiler - Emission Point UTL16
Natural Gas/Waste Fuel Emission Summary

Pollutant	Average Emission Rate (lbs/hr)	Fuel Type	Maximum Emission Rate (lbs/hr)	Fuel Type	Emissions (tons)
Particulate Matter PM_{10}	2.33	2	10.00	3	10.21
Sulfur dioxide	0.18	1	109.90	3	0.78
Nitrogen oxides	62.23	2	150	2	272.56
Carbon monoxide	24.95	1	24.95	1	109.27
Total VOC (incl. below)	1.63	2	1.63	2	7.15
Sulfur trioxide	0.01	1	3.99	3	0.03
Formaldehyde*	0.02	1	0.02	1	0.10
n-Hexane*	0.53	1	0.53	1	2.34
Butanol	0.16	2	0.16	2	0.69
Methanol	0.32	2	0.32	2	1.42
o-Toluidine	0.005	2	0.005	2	0.02
Toluenediamine	0.46	2	0.46	2	2.03

* From natural gas combustion.
The average and annual emission rates represent the highest emissions from each fuel usage scenario with the exclusion of fuel oil. Fuel oil emission rates were considered in the maximum emission rate determination.

Fuel Type Codes:

1 - natural gas
2 - waste fuel with natural gas
3 - fuel oil

BASF Corporation - Utilities Plant
No. 6 Boiler - Emission Point UTL16
Fuel Usage Scenarios and Emission Rates

Natural Gas Only

Pollutant	Natural Gas Emission Factor (lbs/MMscf)	Natural Gas Consumption (MMscf/hr)	Emission Rate (lbs/hr)
PM_{10}	Based on actual stack test (see No. 6 Emission Summary)		
SO_2	0.6	0.297	0.18
NO_x	Based on NSPS limit of 0.2 lbs/MMBtu for gaseous fuels (re: 40 CFR 60.44(a)(1))		
CO	84	0.297	24.95
VOC	5.5	0.297	1.63
SO_3	0.022	0.297	0.01
Formaldehyde (combustion)	0.08	0.297	0.02
n-Hexane (combustion)	1.8	0.297	0.53

Emission factors are from AP-42, Tables 1.4-1 and 2, Natural Gas Combustion, 02/98.

Natural Gas (fired with waste fuel or TDA vicinals below)

Pollutant	Natural Gas Emission Factor (lbs/MMscf)	Natural Gas Consumption (MMscf/hr)	Emission Rate (lbs/hr)
PM_{10}	Based on actual stack test (see No. 6 Emission Summary)		
SO_2	0.6	0.0982	0.06
NO_x	Based on NSPS limit of 0.2 lbs/MMBtu for gaseous fuels (re: 40 CFR 60.44(a)(1))		
CO	84	0.0982	8.25
VOC	5.5	0.0982	0.54
SO_3	0.022	0.0982	0.002
Formaldehyde (combustion)	0.08	0.0982	0.01
n-Hexane (combustion)	1.8	0.0982	0.18

Emission factors are from AP-42, Tables 1.4-1 and 2, Natural Gas Combustion, 02/98.

Waste Fuel Fired with Natural Gas Above

Pollutant	Mixed Alcohols Emission Factor (lbs/kgal)	Waste Fuel Consumption (kgal/hr)	Emission Rate (lbs/hr)
PM_{10}	Based on actual stack test (see No. 6 Emission Summary)		
SO_2	0	0.61	-
NO_x	40	0.61	24.48
CO	5	0.61	3.06
VOC	0.76	0.61	0.47
SO_3	0	0.61	-

Emission factors except for NO_x are from AP-42, Tables 1.3-1 & 3, Fuel Oil Combustion, 09/98.

BASF Corporation - Utilities Plant
No. 6 Boiler - Emission Point UTL16
Fuel Usage Scenarios and Emission Rates

TDA Vicinals Fired with Natural Gas Above

Pollutant	TDA Vicinals Emission Factor (lbs/kgal)	Waste Fuel Consumption (kgal/hr)	Emission Rate (lbs/hr)
PM_{10}	Based on actual stack test (see No. 3 Emission Summary)		
SO_2	0	0.54	-
NO_x	*	0.54	150
CO	5	0.54	2.70
VOC	0.76	0.54	0.41
SO_3	0	0.54	-

Emission factors except for NO_x are from AP-42, Tables 1.3-1 & 3, Fuel Oil Combustion, 09/98.
* NO_x emission rate derived from 2000 stack test burning TDA Vicinals at a feed rate of 6.25 gpm for 6255 hours *per year; calculation above ratioed to 9 gpm for max lb/hr. Includes supplemental natural gas firing.*

Waste Fuels and TDA Vicinals Speciated TAP Emissions

Pollutant	Waste Fuel Concentration (%)	Waste Fuel Consumption (lbs/hr)	Emission Rate (lbs/hr)
Butanol	40%	3,913	0.16
Methanol	91%	3,554	0.32
o-Toluidine	1%	4,723	0.005
Toluenediamine	98%	4,723	0.46
		Total TAP VOC	**0.95**

Assumes 99.99% DRE.

Fuel Oil (Alternative Fuel)

Pollutant	No. 2 / No. 6 Fuel Oil Emission Factor (lbs/kgal)	No. 2 / No. 6 Fuel Oil Consumption (kgal/hr)	Emission Rate (lbs/hr)
PM_{10}	10	1	10.0
SO_2	109.9	1	109.9
NO_x	40	1	40.0
CO	5	1	5.0
VOC	0.76	1	0.76
SO_3	3.99	1	3.99

SO_2/SO_3 emission factors are based on sulfur = 0.0016% by weight and max. 0.70% by weight.
Emission factors are from AP-42, Tables 1.3-1 & 3, Fuel Oil Combustion, 09/98.

BASF Corporation - Utilities Plant
No. 6 Boiler - Emission Point UTL16
Natural Gas Combustion - HAP Emission Rates

Natural Gas Heat Input: 0.297 MMscf/hr

Pollutant	Emission Factor ($lbs/10^6$ scf)*	Emission Factor (lbs/MM BTU)	Emission Rate (lb/hr)
2-Methylnaphthalene	0.00002	0.00000002	5.94E-06
3-Methylchloranthrene	0.000002	0.000000002	5.94E-07
7,12-Dimenthylbenz(a)anthracene	0.00002	0.00000002	5.94E-06
Acenaphthene	0.000002	0.000000002	5.94E-07
Acenaphthylene	0.000002	0.000000002	5.94E-07
Anthracene	0.000002	0.000000002	5.94E-07
Benz(a)anthracene	0.000002	0.000000002	5.94E-07
Benzene	0.002	0.000002	5.94E-04
Benzo(a)pyrene	0.000001	0.000000001	2.97E-07
Benzo(b)fluoranthene	0.000002	0.000000002	5.94E-07
Benzo(g,h,i)perylene	0.000001	0.000000001	2.97E-07
Benzo(k)fluoranthene	0.000002	0.000000002	5.94E-07
Chrysene	0.000002	0.000000002	5.94E-07
Dibenzo(a,h)anthracene	0.000001	0.000000001	2.97E-07
Dichlorobenzene	0.001	0.000001	2.97E-04
Fluoranthene	0.000003	0.000000003	8.91E-07
Fluorene	0.000003	0.000000003	8.91E-07
Formaldehyde	0.08	0.00007	2.38E-02
n-Hexane	1.8	0.002	5.35E-01
Indeno(1,2,3-cd)pyrene	0.000002	0.000000002	5.94E-07
Naphthalene	0.0006	0.0000006	1.78E-04
Phenanthrene	0.00002	0.00000002	5.94E-06
Pyrene	0.000005	0.000000005	1.49E-06
Toluene	0.003	0.000003	8.91E-04
		Total Rate	0.560

* From AP-42 Table 1.4-3, 3/98

UTILITIES PLANT BOILERS 3 & 6 FUGITIVES

EMISSION POINT UTL18

BASF Corporation - Utilities Boilers No. 3 and 6
Fugitive Emissions - Emission Point UTL18

Component Type	Service	No. of Components	Leak Rate (lbs/hr/comp)	No-Leak Rate (lbs/hr/comp)	Stream Composition - Wt %				Emissions (lbs/hr)				
					CO	TDA	o-toluidine	VOC	CO	TDA	o-toluidine	Other VOC	Total VOC
Connectors	Gas	135	9.68E-02	1.34E-06	30				0.078	0.000	0.000	0.000	0.000
	Lt. Liquid	65	5.82E-03	1.34E-06				100	0.000	0.000	0.000	0.008	0.008
	Hvy. Liquid	300	5.82E-03	1.34E-06		99	1		0.000	0.035	0.0004	0.000	0.035
								TOTAL (lbs/hr)	**0.08**	**0.03**	**0.0004**	**0.01**	**0.04**
								TOTAL (tons/yr)	**0.34**	**0.15**	**0.002**	**0.03**	**0.19**

Notes:

1. Emission factors based on the SOCMI Leak Rate/Screening Value Correlations and the Default Zero Values: SOCMI Process Units (Table 2-11), from Protocol for Equipment Leak Emission Estimates; EPA-453/R-95-017, November 1995.
2. Percentages of leaking components based on 98% non-leaking (0 range), and 2% leaking.

APPENDIX B

EMISSION CALCULATIONS FOR GENERAL CONDITION XVII SOURCES

BASF Corporation - Utilities Plant
Boilers No. 3 and No. 6

General Condition XVII Emissions
Fuel Oil Test Firing

Pollutant	Emission Factor (lb/Mgal)	Fuel Oil Consumption (Mgal/hr)	Time of Burn (hrs/yr)	Emissions (lbs/hr)	Emissions (tons/yr)
Particulate matter	10	1.895	3	18.95	0.03
Sulfur Dioxide	109.9	1.895	3	208.26	0.31
Carbon Monoxide	5	1.895	3	9.48	0.01
Nitrogen Oxides	47	1.895	3	89.07	0.13
Total VOC	0.76	1.895	3	1.44	0.002
Sulfur Trioxide	3.99	1.895	3	7.56	0.01

Notes:
1. Sulfur content of fuel oil is assumed 0.7% by weight.
2. Emission factors are from AP-42, Tables 1.3-1 and 1.3-3, Fuel Oil Combustion, 09/98.

APPENDIX C

LETTER OF NO OBJECTION FROM LDEQ

State of Louisiana

Department of Environmental Quality

KATHLEEN BABINEAUX BLANCO
GOVERNOR

MIKE D. McDANIEL, Ph.D.
SECRETARY

RECEIVED
MAR - 9 2005
BASF ECOLOGY

Certified Mail No. 7002 0460 0002 6051 5837

Agency Interest No. 2049
Activity No.: PER20050004

Craig Tyndall, EHS Team Leader
BASF Corporation – Geismar Plant
P.O. Box 457
Geismar, LA 70734-0457

RE: Letter of No Objection, BASF Corporation, Utilities Plant Boiler No. 6, Geismar, Ascension Parish, Louisiana

Dear Mr. Tyndall:

By letter dated February 24, 2005, BASF Corporation requested an approval for discontinuing operation of the existing nitrogen oxides (NO_x) analyzer located at the No. 6 Boiler (EPN 1-75) and also for non-operation of continuous emission monitoring (CEM) system for opacity, oxygen (O_2) and carbon monoxide (CO).

On July 12, 2002, BASF conducted a performance test on the No. 6 Boiler. The purpose of the test was to demonstrate that the boiler is in compliance with a provision in 40 CFR 60.45(b)(3) which states, "If an owner or operator demonstrates during the performance test that emission of nitrogen oxides are less than 70 percent of the applicable standards in 40 CFR 60.44, a continuous monitoring system for measuring nitrogen oxides emissions is not required." Per 60.44(a)(1), the NO_x emission standard that applies to the No. 6 Boiler is 86 nanograms per joule heat input (.20 pound per million Btu) derived from gaseous fossil fuel. As the test results indicate, the NO_x emissions from the No. 6 Boiler average 0.106 pound per million Btu or 53 percent of the emission standard. Therefore, the No. 6 Boiler meets the criteria for not requiring a continuous monitoring system for NO_x emissions.

Table 3 of the current operating Permit No. 2564-V1 states the following monitoring, recordkeeping and reporting for the No. 6 Boiler: "CEM for NO_x opacity, and O_2 or CO..." and cites New Source Performance Standard (NSPS) Subpart D as the regulatory driver. However, requirement for opacity monitoring does not apply to fossil fuel-fired steam generators that burn only gaseous fossil fuel as per 40 CFR 60.45(b)(1). An oxygen analyzer is not required if a CEM for nitrogen oxides is not required as per 40 CFR 60.45(b)(4). A CEM to measure CO is not called for anywhere in the regulation. Furthermore, in accordance with LAC 33:III.2201.C.19, the No. 6 Boiler is exempt from all requirements of the NO_x RACT regulations since it is regulated under LAC 33:V.Chapter 30.

An application for renewal of Permit 2564-V1 was submitted to the LDEQ on February 27, 2003, which included the removal of the CEM requirements at the No. 6 Boiler for all parameters.

Based on the above information, the Permits Division has no objection to the removal of CEM Requirement for the No. 6 Boiler at the Utilities Plant. LDEQ will incorporate the information of this letter to the Permit 2564-V1 renewal. AI No. 2049 and Permit No. 2564-V1 should be referenced in future correspondence regarding this facility.

Sincerely,

Chuck Carr Brown, Ph.D.
Assistant Secretary

3/1/05
Date

CCB: BTN

APPENDIX D

LDEQ ERC APPLICATION

Department of Environmental Quality
Office of Environmental Services
Air Permits Division
P.O. Box 4313
Baton Rouge, LA 70821-4313
(225) 219-3181

LOUISIANA
ERC BANK APPLICATION
NO_X ☒ OR VOC ☐

COMPANY: BASF Corporation — 2049 (Agency Interest No.)

FACILITY: Geismar Site — 2564-V1 (Permit No.)

LOCATION: Geismar, LA (City) — Ascension (Parish)

8404 River Road (Physical Location)

CONTACT: Craig Tyndall (Name) — EHS Team Leader (Title) — 225-339-2416 (Phone)

MAILING ADDRESS: PO Box 457 (Street or P.O. Box) — Geismar (City) — LA (State) — 70734-0457 (Zip Code)

UTL 15 (formerly 3-57) (Affected EIQ Source ID(s)) — 12/30/2006 (Date of Actual Emissions Decrease) — 1996-1997 (Baseline Period)

	NO_X (Chapter 22 only)		NO_X	VOC
ALLOWABLES BEFORE:	N/A (May 1 - September 30)	N/A (October 1 - April 30)	685.6 (TPY)	**N/A** (TPY)
AVG. ACTUAL EMISSIONS:	N/A (May 1 - September 30)	N/A (October 1 - April 30)	320.0 (TPY)	**N/A** (TPY)
CHAPTER 22 LIMIT:	N/A (May 1 - September 30)	**N/A** (October 1 - April 30)	**N/A** (TPY)	**N/A** (TPY)
ALLOWABLES AFTER[1]:	N/A (May 1 - September 30)	N/A (October 1 - April 30)	181.2 (TPY)	**N/A** (TPY)
CREDITABLE CHANGE:	N/A (May 1 - September 30)	N/A (October 1 - April 30)	138.8 (TPY)	**N/A** (TPY)

[1]Allowables should account for all applicable federal and state regulations, emissions limitations, compliance orders, consent decrees, etc. In the case of enforcement instruments, surplus reductions may be included as per he terms of the order or agreement. If no such terms are included, then the reductions are not surplus.

CREDIBILITY:
All applicable state and federal regulations that apply to the affected emission point(s) should be addressed in the cover letter to this document.

RESPONSIBLE OFFICIAL CERTIFICATION:
I hereby certify that the information contained in this ERC Bank Application and attached calculations is true and accurate to the best of my knowledge.

Mike Cohen (Name) — General Manager & Sr. VP of Technical Engineering.Services (Title) — 225-339-7300 (Phone)

(Signature) — 1/23/07 (Date)

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06/14/04