MRB

Robert J. Huston, *Chairman* R. B. "Ralph" Marquez, *Commissioner* John M. Baker, *Commissioner* Jeffrey A. Saitas, *Executive Director* 



AIR DERC\_100225945-70501\_\_ USE\_20000710\_Use\_D1007

# **TEXAS NATURAL RESOURCE CONSERVATION COMMISSION**

Protecting Texas by Reducing and Preventing Pollution

July 10, 2000

Mr. David LaVine Environmental, Health, and Safety The Dow Chemical Company P.O. Box 685 La Porte, Texas 77572

Re: Notice of Intent to Use (DERCs) Boiler Nos. 4 and 5 Freeport, Brazoria County Account ID No. BL-0082-R

Dear Mr. LaVine:

This will acknowledge receipt of your letter dated January 4, 2000 regarding Notice of Intent to Use of Discrete Emission Reduction Credits (DERCs) for the purpose of compliance with Permit T-9801, 1483B, and 4221A for calendar year 2000. We understand you plan to use 10 tons of NO<sub>x</sub> DERCs for the purpose of maintaining compliance with permit allowables for Boiler Nos. 4 and 5 (located at your La Porte plant).

We have reviewed your Notice of Intent to Use and have found that the notice and the credits to be used meet the requirements of 30 Texas Administrative Code Section 101.29, Emissions Banking and Trading. A report of actual use must be submitted within 90 days of the end of the use period.

Thank you for your cooperation in this matter. If you need further assistance regarding the banking program or future transactions, please call me at (512) 239-1091 or write to me at Texas Natural Resource Conservation Commission, Office of Permitting, Remediation, and Registration, Air Permits Division (MC-162), P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Matthew R. Baker Emission Credit Trading Coordinator Air Permits Division

MB/AT/bg

cc: Mr. Arturo J. Blanco, Air Section Manager, Houston

# Emission Reduction Credits (ERC) Verification SOURCE ANALYSIS & TECHNICAL REVIEW

Permit No: M Project Type: VDIU Record No: 70501 Account No: BL-0082-R Engineer: Angel Tomasino

Company: THE DOW CHEMICAL COMPANY Facility Name: GAS TURBINES City: FREEPORT County: Brazoria

## **PROJECT OVERVIEW**

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Dow Chemical in La Porte has submitted a Notification of Intent to Use 10 tons of nitrogen oxides for the purposes of complying with permit conditions for their Boiler 4 and 5. The boilers are authorized in permits 1483B and 4221A, respectively. Dow calculated that the boilers would exceed their permit allowables for NOx based on stack testing and based on required use of the boilers. The DERCs will be used to comply with the boilers' NOx limits from March 1, 2000 to March 1, 2001. During this time, Dow will decide upon a long-term remedy (ie replacement or modification). This authorization is being claimed pursuant to 101.29(d)(4)(B)(v)(I).

Dow had originally applied to use DERCs for Boiler 3 at the La Porte plant but such action is not necessary. Dow had misread the allowables for that boiler when determining whether or not they were in compliance with the NOx lb/hr and tpy values.

# **Emission Reductions Summary**

The DERCs claimed were created by the shutdown of two gas turbines (GT 32 and 33) at Dow's Freeport facility in 1994. A total of 569 tons of NOx have been certified by the TNRCC. Reductions are filed in Record No. 59925. See also Record No. 68686.

# **Emission Reduction Calculation Methods**

Reductions were based on steam injection rates for the Freeport turbines.

General Rules 101.29 (c)

- (1)(A) Applicable Pollutants Qualified reductions of VOC and NO<sub>x</sub>: NOx
- (1)(B) Date reduction achieved: 1994
  - Reported in 1990 or subsequent emission inventory: Yes
- (1)(C) Eligible Source Stationary source.
- (1)(D) Expiration date: 2004
- (1)(E) Ozone nonattainment Area: Brazoria County
- (2)(F) Enforcement Mechanism: registration

# Generation of Emission Credits

Generation Method: shutdown of turbines at Dow Freeport

Control of NOx:

Control Requirements. Shutdown of turbines.

# **TECHNICAL REVIEW**

Account No. BL-0082-R

Permit No. M

Use of Emission Credits Purpose of Use: For compliance with Permits T9801, 1483B, and 4221A.

Re-review of Credits: Reviewed June 2000 by TNRCC.

Conclusion

Engineer recommends approval of DERC intent to use.

Permit Engineer

20 03/00

Team Leader/Section Manager/Backup

Date

### **Emission Reduction Credits (ERC) Verification** SOURCE ANALYSIS & TECHNICAL REVIEW

Permit No: M Project Type: VDIU Record No: 70501 Account No: BL-0082-R Engineer: Angel Tomasino Company:THE DOW CHEMICAL COMPANYFacility Name:GAS TURBINESCity:FREEPORTCounty:Brazoria

### **PROJECT OVERVIEW**

Dow Chemical in La Porte has submitted a Notification of Intent to Use 10 tons of nitrogen oxides for the purposes of complying with permit conditions for their Boiler 4 and 5. The boilers are authorized in permits 1483B and 4221A, respectively. Dow calculated that the boilers would exceed their permit allowables for NOx based on stack testing and based on required use of the boilers. The DERCs will be used to comply with the boilers' NOx limits from March 1, 2000 to March 1, 2001. During this time, Dow will decide upon a long-term remedy (ie replacement or modification). This authorization is being claimed pursuant to 101.29(d)(4)(B)(v)(I).

Dow had originally applied to use DERCs for Boiler 3 at the La Porte plant but such action is not necessary. Dow had misread the allowables for that boiler when determining whether or not they were in compliance with the NOx lb/hr and tpy values.

#### **Emission Reductions Summary**

The DERCs claimed were created by the shutdown of two gas turbines (GT 32 and 33) at Dow's Freeport facility in 1994. A total of 569 tons of NOx have been certified by the TNRCC. Reductions are filed in Record No. 59925. See also Record No. 68686.

#### **Emission Reduction Calculation Methods**

Reductions were based on steam injection rates for the Freeport turbines.

#### General Rules 101.29 (c)

- (1)(A) Applicable Pollutants Qualified reductions of VOC and NO<sub>x</sub>: NOx
- (1)(B) Date reduction achieved: 1994
  - Reported in 1990 or subsequent emission inventory: Yes
- (1)(C) Eligible Source Stationary source.
- (1)(D) Expiration date: 2004
- (1)(E) Ozone nonattainment Area: Brazoria County
- (2)(F) Enforcement Mechanism: registration

Generation of Emission Credits

Generation Method: shutdown of turbines at Dow Freeport

Control of NOx:

Control Requirements. Shutdown of turbines.

**TECHNICAL REVIEW** 

Account No. BL-0082-R

Permit No. M

Use of Emission Credits

Purpose of Use: For compliance with Permits T9801, 1483B, and 4221A.

Re-review of Credits: Reviewed June 2000 by TNRCC.

### Conclusion

Engineer recommends approval of DERC intent to use.

Permit /Engineer

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Team Leader/Section Manager/Backup

John Hall, *Chairman* Pam Reed, *Commissioner* Peggy Garner, *Commissioner* Anthony Grigsby, *Executive Director* 



# **TEXAS NATURAL RESOURCE CONSERVATION COMMISSION**

Protecting Texas by Reducing and Preventing Pollution

October 21, 1993

Ms. Teresa L. Cunningham Air Program Specialist Dow Chemical USA, La Porte Site P.O. Box 685 La Porte, Texas 77572-0685

130 MMBtu/hr 138 MMBtu/hr

FILE

Re: Permit Requirements Permit T-9801, Boiler No. 3 Permit No. 1483B, Boiler No. 4 Permit No. 4221A, Boiler No. 5 La Porte, Harris County Account ID No. HG-0769-0

Dear Ms. Cunningham:

This is in response to your letters dated October 7, 1993, concerning the proposed replacement of low-NO<sub>x</sub> burner tips in Boiler Nos. 3, 4 and 5. We understand that the replacement burner tips will also be low-NO<sub>x</sub> tips and are required because you anticipate less Acetylene Off-Gas (AOG) available. The current tips are designed for a higher flow since the AOG has a lower heating value than natural gas. The new configuration will provide for more efficient combustion of the fuel and will not result in any increase in emissions.

After evaluation of the information which you have furnished, we have determined that your proposed burner tip replacement will not create a new source of air contaminants or increase emissions of air contaminants from existing sources. On this basis, no permit will be required. You are reminded that regardless of whether a construction permit is required, this facility must be in compliance with all air quality Rules and Regulations of the Texas Natural Resource Conservation Commission at all times.

Your cooperation in this matter is appreciated. If you have further questions, please contact Mr. Jim Linville of our Office of Air Quality Permits Section.

Sincerely,

James E. Crocker, P.E. Manager, Combustion Section Office of Air Quality

cc: Ms. Karen Kilpatrick, Air Program Manager, Houston Mr. Rob Barrett, Director, Harris County Pollution Control Department, Pasadena

#### SPECIAL PROVISIONS

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#### т-9801

- 1. The total emissions of air contaminants from any of the sources shall not exceed the values stated on the attached table entitled "Emission Sources Maximum Allowable Emission Rates."
- 2. Fuel for the boilers shall be either sweet natural gas as defined in the General Rules adopted by the Texas Air Control Board (TACB) and/or waste gas fuel consisting of hydrogen, carbon monoxide, methane, carbon dioxide, nitrogen, ethane, ethylene, argon and oxygen. Use of any other fuel will require prior approval of the Executive Director of the TACB.



This table lists all sources of air contaminants on applicant's property emitted by the facility covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

			AI	R CONTAN	INANT I	DATA							
EMISSION	SOURCE NAME		EMISSION RATES*										
POINT ID	(2)	VOC	(3)	NOX	(4)	SO2 (5)		PART (6)		C0 (7)		(7)	
(1)		#/HR	T/Y	#/HR	T/Y	#/HR	T/Y	#/HR	T/Y	#/HR	T/Y	#/HR	T/Y
E10B2101A	Boiler	1.0	4.4	12.16	53.3	0.06	0.26	1.03	4.51	3.4	14.9		
E10B2102	Boiler	1.0	4.4	12.16	53.3	0.06	0.26	1.03	4.51	3.4	14.9		
	TOTALS	2.0	8.8	24.32	106.6	0.12	0.52	2.06	9.02	6.8	29.8		
								29					
							<u>cilli</u>	0		<b> </b>			
							Ar co		9				
						Mar	600.	30					
						6							
			-		+								

(3) Volatile organic compounds as defined in General Rules 101.1 including methyl chloroform and Freon 113.

(4) Total oxides of nitrogen.

(5) Sulfur dioxide.

\* Emission rates are based on the following operating schedule: Hrs/day 24 Days/week 7 Weeks/year 52 or Hrs/year 8760

(6) Particulate matter.
(7) Other contaminants. C0 - Carbon Monoxide

(8) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission limit.

Revised May 12, 1986

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## TABLE 6

### **BOILERS AND HEATERS**

Enforcement Group

JUL 9 1985

RECEIVE2 FORM PF-2 (P4-7)

Type of Device: Utility Boiler Manufacturer: Erie City Ind.												
Number from flow diagram: B-2102 (No. 3) Model Number: 23M												
			CH	ARACTI	ERISTIC	S OF	INPU	Г				
Type Fuel	Chei	mical Comp (% by Weight	osition	Inlet Air Temp <sup>O</sup> F (after preheat)				Fuel (scfr	Flow n* or	Rate Ib/hr)		
Mixture of Waste Gas	H <sub>2</sub> - C0 - C0 <sub>2</sub> -	45.85		Ambi	Ambient		Average 1 3,400		I	Design Maximum 6,800		
and Natural Gas	N2 -	1.07		Gro Va	oss Heati lue of F	ng uel	Total Air Su		upplied and Excess Air		s Air	
	с <sub>2</sub> н <sub>6</sub> -	1.81	· · · · · · · · · · · · · · · · · · ·	(spe 15,18		its)	Average $\frac{7467}{14.3\%}$ scfm <sup>*</sup> (vol)			Desiga Maximum <u>14,933</u> scfm <u>14.3%</u> excession (vo)		
			HEA	T TRAN	NSFER N	1EDIU	М					
Type Transfer Med	lium	Tempe	rature <sup>O</sup> F	P	ressure (	osia)		Flow	Rate	(specify uni	ts)	
(Water, oil, etc.)		Input	Output	Ir	nput	Ou	tput	Average		Design M	aximum	
Water		220	525		0 28		80	37,500		75,000		
			OPERA	TING C	HARAC	TERI	STICS					
Ave. Fire Box Tem at max. firing rate	ıp. e	Fire Box (from (	/olume (ft. <sup>3</sup> Irawing)	),	Gas Velocity in Fire Box (ft/sec) at max firing rate				Residence Time in Fire Box at max firing rate (sec)			
2200 <sup>0</sup> F	2200 <sup>0</sup> F 1768		3				28			1.1		
			· .	STACK F	ARAMI	TER	5		-			
Stack Diameters	Stacl	K Height		Stack G	as Veloc	ity (ft	(sec)	· · · · · · · · · · · · · · · · · · ·	Sta	<u>ck Gas</u>	Exhaust	
			@Ave.Fu	el Flow I	Rate) (	@Max.	ax.Fuel Flow Rate)		Ten	np <sup>0</sup> F	scfm	
5'2"		5 '	12	2.7			25		450		19,830	
			CHAR	ACTERI	STICS C	F OU	TPUT					
Material			Chemical Co	mpositio	on of Ex	it Gas	Relea	sed (% by V	olume	e) ·		
Combustion Products	C0 <sub>2</sub> H <sub>2</sub> 0 N2 02	9.12 19.21 69.13 2.55										
Attach an explanat	Attach an explanation on how temperature, air flow rate, excess air or other operating variables are controlled.											

Also supply an assembly drawing, dimensioned and to scale, in plan, elevation, and as many sections as are needed to show clearly the operation of the combustion unit. Show interior dimensions and features of the equipment necessary to calculate in performance.

\* Standard Conditions: 70°F, 14.7 psia

12124 PARK 35 CIRCLE, AUSTIN, TEXAS 78753, 512/908-1000

R CONTRO

KIRK P. WATSON CHAIRMAN

BOB G. BAILEY VICE CHAIRMAN

WILLIAM R. CAMPBELL EXECUTIVE DIRECTOR



SUZANNE I. AHN, M.D. JACK V. MATSON, Ph.D., P.E. CALVIN B. PARNELL, JR., Ph.D., P.E. WILLIAM H. QUORTRUP C. H. RIVERS WARREN H. ROBERTS MARY ANNE WYATT

file

July 29, 1992

Mr. Gerald L. Shoults Air Program Specialist DOW CHEMICAL U.S.A. P.O. Box 685 La Porte, Texas 77572-0685

> Re: Permit Renewal Permit No. 4221A Boiler No. 5 La Porte Plant La Porte, Harris County Account ID No. HG-0769-0

Dear Mr. Shoults:

Pursuant to Rule 116.12(d) of Regulation VI of the Texas Air Control Board, your permit is hereby renewed. Enclosed are new provisions and an emission allowable table. Please attach these to your permit. We will appreciate your carefully reviewing the conditions of the permit and assuring that all requirements are consistently met.

Thank you for your cooperation in sending us the information necessary to evaluate your operations and for your commitment to air pollution control. Please let us know if you have any questions.

Sincerely,

Wwilliam R. Campbell Executive Director

> cc: Ms. Jodena Henneke, Regional Director, Houston Mr. Rob Barrett, Acting Director, Harris County Pollution Control Department, Pasadena

Texans working for clean air

#### GENERAL PROVISIONS

#### Permit No. 4221A

- 1. Equivalency of Methods It shall be the responsibility of the holder of this permit to demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods and monitoring methods proposed as alternatives to methods indicated in the provisions of this permit. Alternative methods shall be applied for in writing and shall be reviewed and approved by the Executive Director prior to their use in fulfilling any requirements of this permit.
- 2. <u>Sampling Requirements</u> If sampling of stacks or process vents is required, the holder of this permit must contact the Source and Mobile Monitoring Division of the Texas Air Control Board (TACB) prior to sampling to obtain the proper data forms and procedures. The holder of this permit is also responsible for providing sampling facilities and conducting the sampling operations at his own expense.
- 3. <u>Appeal</u> This permit may be appealed pursuant to Rule 103.81 of the Procedural Rules of the TACB and Section 382.032 of the Texas Clean Air Act. Failure to take such appeal constitutes acceptance by the applicant of all terms of the permit.
- 4. <u>Construction Progress</u> Start of construction, construction interruptions exceeding 45 days and completion of construction shall be reported to the appropriate regional office of the TACB not later than 10 working days after occurrence of the event.
- 5. <u>Recordkeeping</u> Information and data concerning production, operating hours, sampling and monitoring data, if applicable, fuel type and fuel sulfur content, if applicable, shall be maintained in a file at the plant site and made available at the request of personnel from the TACB or any local air pollution control program having jurisdiction. The file shall be retained for at least two years following the date that the information or data is obtained.
- 6. <u>Maintenance of Emission Control</u> The facilities covered by this permit shall not be operated unless all air pollution emission capture equipment and abatement equipment are maintained in good working order and operating properly during normal facility operations.

#### SPECIAL PROVISIONS

#### Permit No. 4221A

#### EMISSION STANDARDS AND FUEL SPECIFICATIONS

- 1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and those sources are limited to the emission limits and other conditions specified in that attached table. Annual emissions are based upon a consecutive 12-month period.
- 2. Fuels used in this boiler shall be limited to either, or any combination of, natural gas or waste gas consisting of hydrogen, carbon monoxide, methane, carbon dioxide, nitrogen, ethane, ethylene, oxygen, and argon. All fuels shall contain no more than 0.25 grains of hydrogen sulfide and 5 grains of total sulfur per 100 dry standard cubic feet. Use of any other fuel shall require an amendment to the permit.
- 3. For the purpose of demonstrating compliance, the fuel heat input value of 1,000 Btu/cubic foot (±5 percent) shall be used.
- 4. Opacity of emissions from the steam generator identified as Emission Point No. (EPN) BOILER 5 shall not exceed 5 percent, averaged over a 6-minute period, except for those periods described in Rule 111.111(a)(1)(E) of TACB Regulation I.

### CONTINUOUS DETERMINATION OF COMPLIANCE

- 5. The average hourly emission rate shall be calculated based upon:
  - A. A 24-hour operating day;
  - B. The steam production during the operating day;
  - C. The fuel consumption during the operating day calculated as a function of the steam produced;
  - D. The Btu/cubic foot value described in Special Provision No. 3; and,
  - E. The emission factors listed in AP-42 Table 1.4-1, revision October, 1986, for utility boilers.

#### RECORDKEEPING AND REPORTING REQUIREMENTS

6. The holder of this permit shall maintain daily records of steam production and corresponding fuel consumption for the steam generator identified as EPN BOILER5. These records shall be kept in a manner which facilitates review and SPECIAL PROVISIONS Permit No. 4221A Page 2

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maintained at the site for a period of two years and shall be made available to the Executive Director or his designated representative upon request.

#### ADDITIONAL PROVISIONS

- 7. The holder of this permit shall physically identify and mark in a conspicuous location all equipment that has the potential of emitting air contaminants as follows:
  - A. The facility identification number as submitted to the Emissions Inventory Section of the TACB.
  - B. The EPN as listed on the maximum allowable emission rates table.

#### EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

#### Permit No. 4221A

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

#### AIR CONTAMINANTS DATA

Emission	Source	Air Contaminant	Emission Rates*		
<u>Point No. (1)</u>	Name_(2)	Name (3)	#/hr	TPY	
BOILER 5	150 MMBtu/hour gas	PM10	0.88	3.87	
	fired Boiler No. 5	VOC	1.14	4.99	
		NOX	21.42	93.81	
		SO2	0.23	1.00	
		CO	5.69	24.92	

- (1) Emission point identification either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources use area name or fugitive source name.
- (3) VOC volatile organic compounds as defined in General Rule 101.1
  - NOx total oxides of nitrogen
    - SO2 sulfur dioxide
    - PM10 particulate matter less than 10 microns in diameter
    - CO carbon monoxide
  - \* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

Hrs/day 24 Days/week 7 Weeks/year 52 or Hrs/year 8,760



John Hall, *Chairman* Pam Reed, *Commissioner* Peggy Garner, *Commissioner* Anthony Grigsby, *Executive Director* 

# TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

October 12, 1994

Mr. J. R. Harrison Site Manager THE DOW CHEMICAL COMPANY P.O. Box 685 La Porte, Texas 77572-0685

> Re: Permit Renewal Permit No. 1483B Boiler No. 4 La Porte, Harris County Account ID No. HG-0769-0

Dear Mr. Harrison:

Pursuant to Texas Natural Resource Conservation Commission Rule 116.314(a) of Regulation VI, your permit is hereby renewed. Enclosed are new conditions and a maximum allowable emission rates table. Please attach these to your permit. We will appreciate your carefully reviewing the conditions of the permit and assuring that all requirements are consistently met.

Thank you for your cooperation in sending us the information necessary to evaluate your operations and for your commitment to air pollution control. Please let us know if you have any questions.

Sincerely, Campbe. ecutive Director Enclosures

CC: Ms. Karen Kilpatrick, Manager, Air Program, Houston Mr. Rob Barrett, Director, Harris County Pollution Control Department, Pasadena

### SPECIAL CONDITIONS

#### Permit No. 1483B

### MAXIMUM ALLOWABLE EMISSION RATES

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and those sources are limited to the emission limits and other conditions specified in that attached table.

#### FEDERAL APPLICABILITY

2. This facility shall comply with all requirements of Environmental Protection Agency Regulations on Standards of Performance for New Stationary Sources promulgated for Fossil Fuel-Fired Steam Generators in Title 40 Code of Federal Regulations, Subparts A and D.

### OPERATING PARAMETERS

3. Fuel for the steam generator shall be sweet natural gas, as defined in the general rules and/or Acetylene Off-Gas (AOG), waste gas consisting of hydrogen, carbon monoxide, methane, carbon dioxide, nitrogen, ethane, ethylene, oxygen, and argon. Use of any other fuel for normal operation or standby purposes will require prior approval of the Executive Director of the Texas Natural Resource Conservation Commission (TNRCC).

#### PRODUCTION LIMITATIONS

- 4. The steam production rate of this facility shall not exceed by more than 10 percent the 255,000 pounds per hour steam production rate which was maintained during sampling. The permit holder shall notify the TNRCC Austin Office in writing if this limit is exceeded, and this source may be subject to additional sampling to demonstrate continued compliance with all applicable state and federal regulations. Plant personnel shall demonstrate to representatives of the TNRCC upon request that the maximum hourly steam production rate is not being exceeded. Records shall be kept of daily, monthly, and annual steam production.
- 5. The maximum boiler firing rate shall be limited to 245 MMBtu/hr. Plant personnel shall demonstrate to representatives of the TNRCC upon request that the maximum boiler firing rate is not being exceeded.

SPECIAL CONDITIONS Permit No. 1483B Page 2

RECORDKEEPING

- 6. Notification shall be made to the TNRCC regional office and the Harris County pollution control department of any major upset or maintenance conditions as specified by the requirements of General Rules §101.6 and §101.7 respectively.
- 7. All records shall be maintained on the plant site for a minimum of two years and be made available to representatives of the TNRCC upon request.

Dated 10-12-94

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### EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

#### Permit No. 1483B

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

#### AIR CONTAMINANTS DATA

Emission	Source	Air Contaminant	<u>Emission</u> lb/br	n Rates *
POINT NO. (1)				<u>+ E 4</u>
BOILER 4	245 MMBtu/hr Gas Fired Boiler	PM <sub>10</sub> VOC NO <sub>x</sub> SO <sub>2</sub> CO	1.23 2.89 29.80 0.17 4.93	5.39 12.70 130.50 0.74 21.60

- (1) Emission point identification either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name.
- (3) VOC volatile organic compounds as defined in General Rule 101.1
  - $NO_x$  total oxides of nitrogen
    - $SO_2$  sulfur dioxide
    - $PM_{10}^{-}$  particulate matter less than 10 microns in diameter
    - CO carbon monoxide
  - \* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

Hrs/day\_24\_Days/week\_7\_Weeks/year\_52\_or Hrs/year\_8,760\_

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The Dow Chemical Company P.O. Box 685 La Porte, Texas 77572-0685

THE DOW CHEMICAL COMPANY HG-0769-O DISCRETE EMISSION REDUCTION CREDIT

NOTIFICATION OF INTENT TO USE

Emission Banking and Trading Program, MC-162

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Petroliteration

JAN 0 7 2000

Dear Ms. Hildebrand:

January 4, 2000

P.O. Box 13087

**CERTIFIED MAIL** 

Ms. Susana Hildebrand

Austin, TX 78711-3087

Summary	This notification to TNRCC of Dow's intent to use DERCs is submitted in compliance with §101.29 and §117.570.						
Scope	DERCs previously registered with TNRCC by The Dow Chemical Company will be used to increase the NOx limits on three boilers at the La Porte site. These boilers are Boiler No. 3 (Permit T-9801), Boiler No. 4 (Permit 1483-B) and Boiler No. 5 (Permit 4221-A).						
Attachments	The attached TNRCC Form D-2 Notice of Intent to Use completes the pre-use notification requirements.						
Future Regulatory Changes	This submittal is based on guidance from TNRCC's Regulatory Development Section and should be in compliance with their anticipated changes to the criteria for DERC creditability in §117.570.						
Future Contact	For future correspondence please contactDavid LaVine(713) 246-0635 orFAX(713) 246-0577 ore-maildrlavine@dow.com						
Sincerely,							

R. hall David R. LaVine,

David R. LaVine, Delivery Leader Environmental, Health, and Safety

XC: Mr. Richard Flannery, Director

Mr. Rob Barrett Mr. Christopher Mudd Mr. Steve Kilpatrick Air Program, TNRCC, OCE/FO Region XII 5425 Polk Avenue, Suite H, Houston, TX 77023-1423 Harris County Pollution Control HDC4C1 OC-708



# Form D-2 (Page 1) Notice of Intent To Use of Discrete Emission Reduction Credits (Title 30 Texas Administrative Code § 101.29)

A notice of intent to use must be submitted to the Texas Natural Resource Conservation Commission (TNRCC) DERC Registry in accordance with the following requirements:

I.C	COMPANY IDENTIFYING INFORMATION							
А.	Company Name: The Dow Chemical Company		<u> </u>					
В.	3. Owner or Operator of User Source: The Dow Chemical Company							
C.	Plant/Site Name: La Porte Plant							
D.	Street Address: 550 Battleground Road (Texas Highway 13	4)						
E.	Nearest City:La PorteF.Zip Code: 77572							
G.	County: Harris	H. Primary SIC: 2869	JAN 07 2003 10					
I.	TNRCC Account No.: HG-0769-O	J: Air Permit No.: 9801, 148	3 <b>B, 4221A</b>					
K.	Telephone: 713-246-0635	L. Fax: 713-246-0577	er est. ett.					
M.	Mailing Address: P.O. Box 685							
	City: La Porte	State: Texas	Zip Code:77572-0685					
П.	I. TECHNICAL CONTACT IDENTIFYING INFORMATION							
А.	A. Technical Contact Name: (XMr. Mrs. Ms. Dr.) David R. LaVine							
В.	B. Technical Contact Title: Environmental, Health, & Safety Delivery Leader							
C.	Telephone: 713-246-0635	D. Fax: 713-3-246-0577						
E.	Mailing Address: same as above							
F.	City:	State:	Zip Code:					
III.	CONTACT FOR PURCHASE OF CREDIT							
А.	Contact Name: ( <u>X</u> MrMrsMsDr.) James Da	avenport	·					
В.	Sale Contact Title: Senior Environmental Specialist							
C.	Telephone: 409-238-7877	D. Fax: 409-238-4903						
E.	E. Mailing Address: 2301 Brazosport Boulevard							
F.	City: Freeport	State: Texas	Zip Code: 77541-3257					
IV.	STATE AND FEDERAL REQUIREMENTS							
	Applicable State and Federal requirements that the DERCs will be used for compliance: <u>30 TAC 117</u>							
v.	INTENDED USE PERIOD							
	Intended Use Start Date <u>3 / 1 / 00</u>	Intended Use End	Date <u>3/1/01</u>					

Form D-2, September 1999 - These forms are for use by the sources

participating in the Emission Banking and Trading Program and are subject to revision.

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# Form D-2 (Page 2) Notice of Intent To Use of Discrete Emission Reduction Credits (Title 30 Texas Administrative Code § 101.29)

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VI. TONS OF DERCS REQUIRED								
Emission Point No.	FIN	Air Contaminant	Baseline Activity (MMBtu/hr)	Baseline Emission Rate (tpy)	Expected Activity (MMBtu/hr)	Expected Emission Rate (tpy)	Most stringent emission rate (lb/MMBtu)	DERCs (T)
E18B2102	Boiler 3	NOx	79.45	24.32	70.83	32.32 53.3	0.12	8.0
Boiler 4	Boiler 4	NOx	138.67	130.5	123.62	132.5 130.5	0.12	2.0
Boiler 5	Boiler 5	NOx	77.50	93.81	69.09	99.81 <b>93.8</b>	0.14	6.0
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Form D-2, September 1999 - These forms are for use by the sources participating in the Emission Banking and Trading Program and are subject to revision.



# Form D-2 (Page 3) Notice of Intent To Use of Discrete Emission Reduction Credits (Title 30 Texas Administrative Code § 101.29)

VII. MOST STRINGENT EMISSION RATE							
Describe basis for most stringent allowable emission rate: Permit CRACT CONTRACT CONTRACT CONTRACT							
VIII. PROTOCOL		240 S					
Protocol used to calculate DERC: Note: Attach the actual calculations that were used to determine the amounts of DERCs needed to this form							
IX. TOTAL DERCs REC	QUIRED FOR PUR	CHASE (rou	nd up t	o the nearest to	n) "		
Tons of DERCs required (from Sect. VI.)	CO:	NO <sub>x</sub> :	<u>16</u>	PM <sub>10</sub> :	SO <sub>2</sub> :		VOC:
Environmental Contribution (+ 10%)	CO:	NO <sub>x</sub> :	2	PM <sub>10</sub> :	SO <sub>2</sub> :		VOC:
Compliance Margin (+ 5%) (If DERCs requires >10 tons)	CO:	NO <sub>x</sub> :	_1_	PM <sub>10</sub> :	SO <sub>2</sub> :		VOC:
Total DERCs required	CO:0_	NO <sub>x</sub> :	<u>19</u>	PM <sub>10</sub> :	0 SO <sub>2</sub> :	0_	VOC: <u>0</u>
X. DERC INFORMATION							
X. DERC INFORMATION         Name of the DERC Generator: The Dow Chemical Company Freeport Plant         DERC Generator Account Number: BL-0082-R         Serial numbers of the DERCs acquired or to be acquired:         Note: The serial numbers are assigned by the TNRCC							

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	Fe	orm D-2 (Page 4)	
	Noti	ce of Intent To Use	
	of Discrete <b>E</b>	Emission Reduction	Credits
TNRCC	(Title 30 Texas	Administrative Cod	le § 101.29)
XI. PURCHASE DATES A	ND PRICES		
Date on which the DERCs	were acquired or will be ac	cquired: <u>NA</u>	
Price of the DERCs acquir	ed or the expected price of	the DERCs to be acquired:	: <u>\$ 1,000 . 00</u>
XII. CERTIFICATION BY	Y RESPONSIBLE OFFICI	AL	
I, <u>Wayne Turner</u>		,hereby certify that the en	nission reductions claimed on this notice
meet the requirements of 30	TAC §101.29 and are not ba d that the information entered	ased on an emission strategy	prohibited in 30 TAC 101.29 to the best of ct to the best of my knowledge and belief.
iny knowledge and benef an			
Signature (1)	a grow		Date January 4 2000
Title_Site Manager		- ·	

Mail application to: Emission Banking and Trading Program TNRCC MC 162 PO BOX 13087 AUSTIN, TX 78711-3087

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#### Calculation Estimate for LaPorte Boiler NOx DERC's

The Calculation Method used for Boilers #3 and #5 will be described below. Based on stack testing these boilers exhibited NOx emissions that would exceed the permitted NOx (lbs/MMBtu) if operated at 3% excess oxygen continuously. The CO emissions for the stack testing at 3% excess oxygen would also have exceeded the permitted CO without proper air register adjustment. Therefore, a safety factor of 1.4 was used to account for the increase in NOx that would accompany an air register adjustment to minimize CO emissions on Boiler #3 and #5. The calculation used looks something like this:

NOx DERC Credit Needed (tons/yr) = ((Measured NOx lbs/MMBtu @ 3% O2) – (Permitted Nox lbs/MMBtu)) (Maximum Permitted Production MMBtu/hr) (Safety Factor) (8760 hrs/yr)/ (2000 lbs/ton)

#### **Boiler #3:**

Boiler #3 NOx Credit = (0.129 – 0.120) lbs/MMBtu (138 MMBtu/hr) (1.4) (8760 hrs/yr) / (2000 lbs/ton) = 7.62 tons/yr ~ 8 tons/yr

#### **Boiler #5:**

Boiler #5 NOx Credit = (0.146 -0.140) lbs/MMBtu (150 MMBtu/hr) (1.4) (8760 hrs/yr) / (2000 lbs/ton) = 5.52 tons/yr ~ 6 tons/yr

The Calculation Method used for Boiler #4 was different because the stack testing indicated this boiler would meet the NOx emissions (lbs/MMBtu) if operated continuously at 3% excess oxygen. The CO emissions for the stack testing at 3% excess oxygen, however, would have exceeded permitted CO without proper air register adjustment. A 1.18 safety factor was applied directly to the Measured NOx (lbs/MMBtu @ 3% O2) in this instance to account for a higher NOx after air register adjustment. The calculation looks something like this:

NOx DERC Credit Needed (tons/yr) = (((Safety Factor) (Measured NOx lbs/MMBtu @ 3% O2)) – (Permitted NOx lbs/MMBtu)) (Maximum Permitted Production MMBtu/hr) (8760 hrs/yr) / (2000 lbs/ton)

#### **Boiler #4:**

Boiler #4 NOx Credit = (((1.18)(.103 lbs/MMBtu)) – (.120 lbs/MMBtu)) (245 MMBtu/hr) (8760 hrs/yr) / (2000 lbs/ton)

= 1.65 tons/yr~ 2 tons/yr

How were air register adjustment factors derived?

MRM 12/17/99