OhioEPA
State of Ohio Environmental Protection Agency

STREET ADDRESS:
1800 WaterMark Drive
Columbus, OH 43215-1099

TELE: (614) 644-3020 FAX: (614) 644-2329

MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

Re: Permit to Install
Lucas County
Application No: 04-1046
NSPS
CEM
SYNTHETIC MINOR
NETTING

CERTIFIED MAIL

June 2, 1997

BP OIL CO., TOLEDO REFINERY
RONALD H. YOUNGS
PO BOX 696
TOLEDO, OH 43697

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Board of Review pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Board of Review within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Board. An appeal may be filed with the Environmental Board of Review at the following address:

Environmental Board of Review
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo

Thomas G. Rigo, Manager
Field Operations & Permit Section
Division of Air Pollution Control

cc: US EPA
TOLEDO ENVIRONMENTAL SERVICES DIVISION
MICHAEL J. WHITE, CITY OF OREGON

George V. Voinovich, Governor
Nancy P. Hollister, Lt. Governor
Donald R. Schregardus, Director

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State of Ohio Environmental Protection Agency

Permit to Install
Terms and Conditions

Application No. 04-1046
APS Premise No. 0448020007
Permit Fee: $6400.00

Name of Facility: BP OIL CO., TOLEDO REFINERY

Person to Contact: RONALD H. YOUNGS

Address: PO BOX 696
TOLEDO, OH 43697

Location of proposed source(s): 4001 CEDAR POINT RD
OREGON, OHIO

Description of proposed source(s):
FURNACE & FURNACE MODIFICATION, COKER AND COKE HANDLING, SUL FUR RECOVERY UNIT, & AMINE TREATER.

Date of Issuance: June 2, 1997

Effective Date: June 2, 1997

The above named entity is hereby granted a permit to install for the above described source(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described source(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Donald R Schregardus

Director

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons)

may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

PUBLIC DISCLOSURE

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

BEST AVAILABLE TECHNOLOGY

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

PERMIT TO OPERATE APPLICATION

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

AIR EMISSION SUMMARY

The air contaminant sources listed below comprise the Permit to Install for BP OIL CO., TOLEDO REFINERY located in Lucas County. The sources listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

Ohio EPA Source Number	Source Identification Description	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
B001	Hydrogen furnace/270 MMBTU/hr RFG fired heater	Use of low-NO_x burners and meeting NSPS Subpart J	3745-31-05 3745-17-07 3745-17-10 3745-15-06 NSPS Subpart J	16.2 lbs/hr and 47.3 TPY CO; 0.10 grain H_2S/dscf of fuel gas burned as an average concentration per rolling 3-hour period as per NSPS; 40.5 lbs/hr and 118.26 TPY NO_x; 1.22 lbs/hr and 3.55 TPY PM/PM_{10}; 8.5 tons/yr SO_2; 0.69 lb/hr and 2.01 TPY VOC
B032	Coker 3 furnace/250 MMBTU/hr RFG fired heater	Use of low-NO_x burners and meeting NSPS Subpart J	3745-31-05 3745-17-07 3745-17-10 3745-15-06 NSPS Subpart J	15.0 lbs/hr and 43.8 TPY CO; 0.10 grain H_2S/dscf of fuel gas burned as an average concentration per rolling 3-hour period as per NSPS; 26.25 lbs/hr and 76.65 TPY NO_x; 1.19 lbs/hr and 3.29 TPY PM/PM_{10}; 13.9 tons/yr SO_2; 0.66 lb/hr and 1.86 TPY VOC

Ohio EPA Source Number	Source Identification Description	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
F005	Coke handling/ coke pit, clamshell crane	Partial enclosure on pit, hopper	3745-31-05 3745-17-08 3745-17-07	5.02 tons/yr PM/PM_{10}; Visible emissions shall not exceed 20% opacity as a 3-minute average
F006	Coke Crusher	Partial enclosure	3745-31-05 3745-17-08 3745-17-07	1.86 tons/yr PM/PM_{10}; Visible emissions shall not exceed 20% opacity as a 3-minute average
P036	Coker 3/delayed petroleum coker	Venting blowdown to flare, compliance with NSPS Subpart GGG	3745-31-05 3745-21-09 (DD) 3745-15-06 NSPS Subpart GGG NSPS Subpart QQQ	91.37 lbs/hr and 77.9 tons/yr SO_2 emissions; 5.07 lbs/hr and 4.3 tons/yr VOC emissions from flare stack and 7.38 lbs/hr and 10.8 TPY VOC emissions from coke cutting 20.5 TPY VOC from fugitives
P037	Sulfur recovery units/two 105 long ton/day (each) Claus sulfur recovery units with tail gas treater and thermal oxidizer (with flare pilot)	Compliance with NSPS Subparts J and GGG	3745-31-05 3745-15-06 NSPS Subpart J NSPS Subpart GGG NSPS Subpart QQQ	2.7 lbs/hr and 8.07 TPY CO; 4.4 lbs/hr and 12.76 TPY NO_x; 0.6 lb/hr and 1.74 TPY PM/PM_{10}; 250 ppm SO_2 by volume (dry basis) at 0% oxygen as an average concentration per 12-hour period as per NSPS; 172 tons/yr SO_2 6.2 TPY VOC from fugitives

Ohio EPA Source Number	Source Identification Description	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
P038	TRP Amine treating unit	Compliance with NSPS Subpart GGG	3745-31-05 3745-15-06 NSPS Subpart GGG NSPS Subpart QQQ	0.1 lb/hr and 0.29 TPY VOC 5.0 TPY VOC from fugitives

* Unless specified otherwise, all ton/yr (TPY) limits are 12-month rolling totals.

SUMMARY
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons/Year	Tons/Year Net Increase*
CO	99.17	93.07
NO_x	207.67	25.26
PM/PM_{10}	15.45	14.58 (10.61 PM_{10})
SO_2	272.31	38.32
VOC	50.96	37.47

* Includes emissions decreases from units not listed above.

CONSTRUCTION STATUS

The Toledo Pollution Control Division shall be notified in writing as to (a) the construction starting date, (b) the construction completion date, and (c) the date the facilities were placed into operation for the following sources: B001, B032, F005, F006, P036, P037 and P038.

NSPS REQUIREMENTS

The following sources are subject to the applicable provisions of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60.

Source No.	Source Description	NSPS Regulation (Subpart)
B001, B032	RFG Furnaces	J
P036	Delayed coker	GGG, QQQ
P037	SRU	J, QQQ, GGG
P038	Amine treater	GGG, QQQ

The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to the NSPS, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

a. construction date (no later than 30 days after such date);
b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
c. actual start-up date (within 15 days after such date); and
d. date of performance testing (If required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency
DAPC - Permit Management Unit
P.O. Box 163669
Columbus, OH 43216-3669

and Toledo Pollution Control Division
26 Main Street
Toledo, Ohio 43605

PERFORMANCE TEST REQUIREMENTS

The permittee shall conduct, or have conducted, performance testing on the air contaminant source(s) in accordance with procedures approved by the Agency. Two copies of the written report describing the test procedures followed and the results of such tests shall be submitted and signed by the person responsible for the test. The Director, or an Ohio EPA representative, shall be allowed to witness the test, examine testing equipment, and require the acquisition or submission of data and information necessary to assure that the source operation and testing procedures provide a valid characterization of the emissions from the source and/or the performance of the control equipment.

A. A completed Intent to Test form shall be submitted to the Toledo Environmental Control where the original permit application was filed. This notice shall be made 30 days in advance and shall specify the source operating parameters, the proposed test procedures, and the time, date, place and person(s) conducting such tests.

B. Two copies of the test results shall be submitted within 30 days after the completion of the performance test.

C. Tests shall be performed for the following source(s) and pollutants(s):

Source	Pollutants
B001	H_2S, NO_x, CO
B032	H_2S, NO_x, CO
P037	SO_2
P036	H_2S
B006	NO_x

RECORD(S) RETENTION AND AVAILABILITY

All records required by this Permit to Install shall be retained on file for a period of not less than three years unless otherwise indicated by Ohio Environmental Protection Agency. All records shall be made available to the Director, or any representative of the Director, for review during normal business hours.

REPORTING REQUIREMENTS

Unless otherwise specified, reports required by the Permit to Install need only be submitted to Toledo Pollution Control Division, 26 Main Street, Toledo, Ohio 43605.

WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the Toledo Division of Environmental Services, 26 Main Street, Toledo, Ohio 43605.

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

NINETY DAY OPERATING PERIOD

The facility will be permitted to operate during a 90-day period in accordance with OAC Rule 3745-35-02(C)(4)(b). The purpose of this period of operation is to fulfill the performance tests conditions used in the determination of compliance with the provisions of this Permit to Install or other applicable Ohio EPA rules.

CONSTRUCTION COMPLIANCE CERTIFICATION

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

I. Operational Restrictions

A. The maximum H_2S concentration in the fuel gas burned in the Coker 3 Furnace (B032) shall not exceed 230 mg/dscm (0.10 gr/dscf) as an average concentration per rolling 3-hour period as per NSPS and 13.9 tons/yr as a 12-month rolling total.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the emission levels specified in the following table:

	Maximum Allowable Cumulative Emissions in Tons				
Month(s)	SO_2	CO	NO_x	PM/PM_{10}	VOC
1	2.8	8.8	15.3	0.7	0.4
1-2	3.8	11.9	20.9	0.9	0.5
1-3	4.8	15.1	26.5	1.1	0.6
1-4	5.8	18.3	32.1	1.4	0.8
1-5	6.8	21.5	37.6	1.6	0.9
1-6	7.8	24.7	43.2	1.9	1.0
1-7	8.8	27.9	48.8	2.1	1.2
1-8	9.9	31.1	54.4	2.3	1.3
1-9	10.9	34.2	59.9	2.6	1.5
1-10	11.9	37.4	65.5	2.8	1.6
1-11	12.9	40.6	71.1	3.1	1.7
1-12	13.9	43.8	76.65	3.29	1.86

After the first 12 calendar months of operation, compliance with the annual emission limitations shall be based upon a rolling 12-month summation of the monthly emissions.

B. The maximum H_2S concentration in the fuel gas burned in the Hydrogen Furnace (B001) shall not exceed 230 mg/dscm (0.10 gr/dscf) as an average concentration per rolling 3-hour period as per NSPS and 8.5 tons/yr SO_2 as a 12-month rolling total.

The permittee shall install low NO_x burners on the Hydrogen Furnace (B001) in order to obtain the net 55.32 TPY decrease in NO_x emissions. Emissions of Nitrogen Oxides from the Hydrogen Furnace shall not exceed 40.5 lbs/hr.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the emission levels specified in the following table:

	Maximum Allowable Cumulative Emissions in Tons				
Month(s)	SO_2	CO	NO_x	PM/PM_{10}	VOC
1	1.7	9.5	23.7	0.7	0.4
1-2	2.3	12.9	32.3	1.0	0.5
1-3	2.9	16.3	40.9	1.2	0.7
1-4	3.6	19.8	49.5	1.5	0.8
1-5	4.2	23.2	58.1	1.7	1.0
1-6	4.8	26.7	66.7	2.0	1.1
1-7	5.4	30.1	75.3	2.3	1.3
1-8	6.0	33.5	83.9	2.5	1.4
1-9	6.6	37.0	92.5	2.8	1.6
1-10	7.3	40.4	101.1	3.0	1.7

		Maximum Allowable Cumulative Emissions in Tons			
Month(s)	SO_2	CO	NO_x	PM/PM_{10}	VOC
1-11	7.9	43.9	109.7	3.3	1.9
1-12	8.5	47.3	118.26	3.55	2.01

After the first 12 calendar months of operation, compliance with the annual emission limitations shall be based upon a rolling 12-month summation of the monthly emissions.

C. The permittee shall not discharge or cause the discharge of any gases into the atmosphere from any Claus sulfur recovery plant (P037) containing in excess of 250 ppm by volume (dry basis) of sulfur dioxide (SO_2) at zero percent excess air as an average concentration per 12-hour period as per NSPS and 172 tons/yr SO_2 as a 12 month rolling total.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the emission levels specified in the following table:

		Maximum Allowable Cumulative Emissions in Tons		
Month(s)	SO_2	CO	NO_x	PM/PM_{10}
1	34.4	1.61	2.55	0.35
1-2	46.9	2.20	3.48	0.48
1-3	59.4	2.79	4.41	0.61
1-4	71.9	3.38	5.34	0.74
1-5	84.4	3.97	6.27	0.87
1-6	96.9	4.56	7.20	1.00
1-7	109.5	5.15	8.13	1.13
1-8	122.0	5.74	9.06	1.26
1-9	134.5	6.33	9.99	1.39
1-10	147.0	6.92	10.92	1.52
1-11	159.5	7.51	11.85	1.65
1-12	172.0	8.07	12.76	1.74

After the first 12 calendar months of operation, compliance with the annual emission limitations shall be based upon a rolling 12-month summation of the monthly emissions.

D. The permittee shall install an Amine Contactor to remove H_2S on the existing Crude Vac 1 (P011) unit in order to obtain the net 227.59 TPY decrease in SO_2 emissions. Offgas H_2S content from the unit after scrubbing shall be burned in an appropriate firebox of a furnace in accordance with OAC 3745-21-09(M)(1). The H_2S content of

this gas shall be controlled so that SO_2 emissions resulting from combustion of the offgas shall not exceed 3.57 tons per year on a 12-month rolling total.

To ensure enforceability during the first 12 calendar months of operation, the SO_2 emissions from the combustion of the offgas shall not exceed the emissions levels in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of SO_2 (Tons)
1	0.71
1-2	0.97
1-3	1.18
1-4	1.44
1-5	1.70
1-6	1.96
1-7	2.22
1-8	2.48
1-9	2.74
1-10	3.00
1-11	3.27
1-12	3.57

After the first 12 calendar months of operation, compliance with the annual emission limitation for SO_2 shall be based upon a rolling 12-month summation of the monthly emissions.

E. The Crude and Vac 2 furnace emission unit (B019) will not undergo a physical modification. However, it will experience a net increase in actual emissions due to the Repositioning Project (installations under this PTI). Sulfur dioxide emissions from the Crude and Vac 2 furnace (B019) shall not exceed 21.02 TPY on a 12-month rolling total.

Emissions of Nitrogen Oxides shall not exceed 262.8 TPY on a rolling 12 month total.

To ensure enforceability during the first 12 calendar months of operation, the SO_2 and NO_x emissions shall not exceed the emissions levels in the following table:

Month(s)	Maximum Allowable Cumulative Emissions in Tons SO_2	NO_x
1	4.2	52.6
1-2	5.7	71.7
1-3	7.3	90.8
1-4	8.8	109.9
1-5	10.3	129.0
1-6	11.8	148.1
1-7	13.4	167.2
1-8	14.9	186.3
1-9	16.4	205.5
1-10	18.0	224.6
1-11	19.5	243.7
1-12	21.0	262.8

After the first 12 calendar months of operation, compliance with the annual emission limitation for SO_2 and NO_x shall be based upon a rolling 12-month summation of the monthly emissions.

F. The permittee shall install low NO_x burners on Reformer 2 Furnace (B006) in order to obtain the net 103.92 TPY decrease in NO_x emissions. Emissions of Nitrogen Oxides from the Reformer 2 Furnace shall not exceed 42.0 lbs/hr and 122.64 tons/year on a rolling 12-month total.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the emission levels specified in the following table:

Month(s)	Maximum Allowable Cumulative Emissions of NO_x (Tons)
1	24.5
1-2	33.4
1-3	42.4
1-4	51.3
1-5	60.2
1-6	69.1
1-7	78.0
1-8	87.0
1-9	95.9
1-10	104.8
1-11	113.7
1-12	122.64

After the first 12 calendar months of operation, compliance with the annual emission limitation for NO_x shall be based upon a rolling 12-month summation of the monthly emissions.

G. The permittee shall reduce the usage of the Coker 1 Furnace (B016) in order to obtain the net 25.40 TPY decrease in NO_x emissions. The Coker 1 Furnace shall be limited to a maximum input capacity of 262,800 MMBtu/yr based on a rolling, 12-month summation of the monthly firing rate.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the firing rates in the following table:

Month(s)	Maximum Allowable Firing Rate in MMBtu
1	39,420
1-2	59,730
1-3	80,040
1-4	100,350
1-5	120,660
1-6	140,970
1-7	161,280
1-8	181,590
1-9	201,900
1-10	222,210
1-11	242,520
1-12	262,800

After the first 12 calendar months of operation, compliance with the annual firing rate shall be based upon a rolling 12-month summation of the monthly firing rate.

H. Emissions from Coker 3 (P036) shall not exceed 77.9 tons SO_2/yr on a 12-month rolling total and 15.1 tons VOC/yr on a 12-month rolling total.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the emission levels specified in the following table:

	Maximum Allowable Cumulative Emissions in Tons	
Month(s)	SO_2	VOC
1	15.6	2.3
1-2	21.3	3.5
1-3	27.0	4.7
1-4	32.7	5.9
1-5	38.4	7.1
1-6	44.1	8.3
1-7	49.8	9.5
1-8	55.5	10.7
1-9	61.2	11.9

	Maximum Allowable Cumulative Emissions in Tons	
Month(s)	SO_2	VOC
1-10	66.9	13.1
1-11	72.6	14.3
1-12	77.9	15.1

After the first 12 calendar months of operation, compliance with the annual emission limitation for SO_2 and VOC shall be based upon a rolling 12-month summation of the monthly emissions.

II. NSPS (other requirements are summarized elsewhere in this permit)

A. No later than 90 days after startup, the permittee shall complete and submit a detailed analysis of whether or not the annual expenses on piping and related equipment in each unit has triggered NSPS Subpart GGG. The results of this analysis shall be submitted to the Toledo Division of Environmental Services.

B. Within 60 days of achieving maximum production, or 180 days of startup, whichever is earlier, the permittee shall complete improvements sufficient to ensure that there will be no net increase in emissions from the aggregate facility as a result of the addition of the new individual drain systems associated with the process units covered by this permit. Prior to startup, the permittee shall submit to TDES a description of the proposed improvements together with a demonstration that the improvements are sufficient to prevent an increase in emissions from the aggregate facility, all in accordance with NSPS Subpart QQQ.

III. Continuous Emission Monitoring Requirements

A. SO_2/O_2 Monitoring (P037)

i. Certification

Prior to the installation of the continuous SO_2/O_2 monitoring system, the permittee shall submit information detailing the proposed location of the sampling site(s) in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specifications 2 and 3 for approval by the Ohio EPA, Central Office.

Within 60 days after achieving the maximum rate at which the affected facility will be operated, but not later than 180 days after the initial startup,

the permittee shall conduct certification tests of the continuous SO_2/O_2 monitoring system pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specifications 2 and 3. Personnel from the Toledo Division of Environmental Services shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the Toledo Division of Environmental Services within 30 days after the test is completed. Copies of the test results shall be sent to the Toledo Division of Environmental Services and the Ohio EPA, Central Office. Certification of the continuous SO_2/O_2 monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specifications 2 and 3.

ii. The permittee shall operate and maintain equipment to continuously monitor and record SO_2/O_2 from this emissions unit in units of the applicable standard(s). Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

The permittee shall maintain such records of data obtained by the continuous SO_2/O_2 monitoring system as is required by applicable provisions of 40 CFR Part 60, including ppm (dry basis) at 0% O_2 12-hour average readings, monthly averages, results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

iii. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Toledo Division of Environmental Services documenting the date, commencement and completion times, duration magnitude, reason (if known), and corrective actions taken (if any), of all instances of SO_2 values in excess of the applicable limits. These reports shall also contain the total SO_2 emissions for the calendar quarter (in tons), including any excess emissions attributed to the malfunction, startup, or shutdown of emissions unit P037.

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Toledo Division of Environmental Services

documenting any continuous SO_2/O_2 monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the individual SRU operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and/or control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while either SRU was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of SRU, amine unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

iv. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous SO_2/O_2 monitoring system designed to ensure continuous valid and representative readings of SO_2. The quality assurance/quality control plan and a logbook dedicated to the continuous SO_2/O_2 monitoring system must be kept on site and available for inspection during regular office hours.

B. Hydrogen Sulfide Monitoring (B001, B032)

i. <u>Certification</u>

Within 60 days after achieving the maximum rate at which the affected facility will be operated, but not later than 180 days after the initial startup, the permittee shall conduct a performance specification test of such equipment pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 7. Personnel from the Toledo Division of Environmental Services shall be permitted to examine equipment and witness the certification tests, and two copies of the test results shall be submitted to the Toledo Division of Environmental Services within 30 days after the

test is completed. Certification of the continuous hydrogen sulfide monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 7. In accordance with OAC rule 3745-15-04, the permittee shall submit the test results for approval of the Ohio EPA within 30 days of conducting the test.

ii. The permittee shall operate and maintain existing equipment to continuously monitor and record hydrogen sulfide from this emissions unit in units of the applicable standard. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13. The permittee shall maintain such records of data obtained by the hydrogen sulfide monitoring system as is required by applicable provisions of 40 CFR Part 60, the emissions of hydrogen sulfide in units of the applicable standard in the appropriate averaging period (e.g. 3-hour readings and monthly averages), results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

iii. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC Sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within thirty (30) days following the end of each calendar quarter to the Toledo Division of Environmental Services documenting all instances of hydrogen sulfide values in excess of the limitations specified in the terms and conditions of this permit, detailing the date, commencement and completion times, duration, magnitude, reason (if known) and corrective actions taken (if any) of all values above the applicable emission limitations.

The permittee shall submit reports within thirty (30) days following the end of each calendar quarter to the Toledo Division of Environmental Services documenting any continuous hydrogen sulfide monitoring system downtime while the emissions unit was on-line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of source and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall be included in the quarterly report. If there are no excess emissions during the calendar quarter, then the permittee

shall submit a statement to that effect along with the emissions unit and monitor operating times. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during previous calendar quarters.

iv. Within one hundred eighty (180) days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the CEMS designed to ensure continuous valid and representative readings of hydrogen sulfide. A logbook dedicated to the monitoring system must be kept on site and available for inspection during regular office hours.

IV. Refinery MACT 40 CFR Part 63 Subpart CC (P036, P037, P038)

The sources listed in this Permit to Install shall comply with the existing source MACT requirements of 40 CFR Part 63, subpart CC upon startup or August 18, 1998 whichever is later. The new units listed in this Permit to Install are not major sources of HAP by themselves and therefore are subject to existing source MACT requirements.

V. Monitoring, Recordkeeping and Reporting Requirements (other requirements are listed elsewhere in this permit)

A. For the Coker 1 Furnace (B016), the permittee shall monitor and record the monthly total fuel gas firing rate in terms of standard cubic feet and the monthly average heating value of the fuel gas fired. From these data, the permittee shall calculate and record the monthly total firing rate in terms of millions of BTUs in accordance with the procedures in section VI and shall calculate and record the rolling 12-month summation of the monthly firing rates of in million BTUs per rolling 12-month period.

B. For Crude and Vac 2 Furnace (B019), the permittee shall monitor and record the daily average fuel gas firing rate in terms of standard cubic feet per hour, and shall determine the daily average H_2S concentration in the fuel gas by indicator tube readings or other comparable analytical technique performed once per day. From these data, the permittee shall calculate and maintain records of the 12-month rolling total SO_2 and NO_x emission rates in units of tons per year in accordance with the procedure in section VI.

C. The permittee shall monitor and record the hourly and monthly average flow of the offgas from Crude Vac 1 (P011) in terms of standard cubic feet. At least once per day, the permittee shall determine the H_2S

concentration in the offgas by indicator tube readings or other comparable analytical technique. H_2S concentration shall be determined at a point which is representative of the offgas H_2S concentration that will be entering the firebox, but before the offgas is combined with any other gas stream. Each sample shall be representative of the day's H_2S level, to the extent possible. The permittee shall keep records of the hourly and daily average offgas flow and all H_2S concentration measurements. From this data, the permittee shall calculate and record the total SO_2 emissions for that month and the rolling 12 month period in accordance with the procedures in Section VI.

D. For the Hydrogen Furnace (B001), the Coker 3 Furnace (B032), the Sulfur Recovery Unit (P037), Thermal Oxidizer and the Reformer 2 Furnace (B006), the permittee shall monitor and record the hourly and monthly average fuel gas firing in terms of standard cubic feet per hour and the daily average heat value of the fuel gas fired. From this information, the permittee shall calculate and record the monthly and rolling 12-month total CO, NO_x, PM/PM_{10} and VOC emissions for B001 and B032, and for P037, the monthly and rolling 12-month total for CO, NO_x and PM/PM_{10}. The monthly and rolling 12-month total NO_x emissions shall be calculated for B006. All the calculations shall be in accordance with the procedures in Section VI.

E. For the Hydrogen Furnace (B001) and the Coker 3 Furnace (B032), the permittee shall also keep records of the monthly average H_2S content of the fuel gas burned as recorded by the continuous emission analyzer. Using these data and the data on daily volume of fuel gas burned required to be collected under paragraph D above, the permittee shall calculate and record the total SO_2 emissions for each source for that month in accordance with the procedures specified in Section VI, and shall calculate and record the 12-month rolling summation of monthly emissions for each source.

F. The permittee shall maintain monthly records of the amount of coke handled (F005) and the amount of coke crushed (F006). From this data, the permittee shall calculate and record the total particulate emissions for that month and the 12-month, rolling summation of monthly emissions in accordance with the procedures specified in Section VI.

G. The permittee shall maintain monthly records of the total coking cycles completed for that month for Coker 3 (P036). From this data, the permittee shall calculate and record monthly the total SO_2 emissions and total VOC emissions for that month and the 12-month, rolling

summation of the monthly emissions in accordance with the procedures specified in Section VI.

H. The permittee shall monitor and record the monthly average stack oxygen content, fuel gas rate, and tail gas treater vent gas rate to the Sulfur Recovery Unit (P037) Thermal Oxidizer, and determine the monthly total gas flow. In addition, the permittee shall calculate and record the monthly average SO_2 concentration in the SRU stacks from data recorded by the continuous emission monitor. From these data, the permittee shall calculate and record the monthly total SO_2, emissions for that month and the 12-month, rolling summation of the monthly emissions in accordance with the procedures specified in Section VI.

I. Emissions occurring during any malfunction, bypassing, startup or shutdown period for units P011, P036, P037 and P038 must quantified and recorded.

J. For purposes of these monitoring and recordkeeping requirements, average daily or monthly gas flow rates shall be determined from data provided by continuous gas flow monitors, except that, in the event of a monitor malfunction, flow rate may be estimated based on historical data corresponding to the production rate of the source for the period of monitor malfunction. The monitor shall be repaired as soon as possible. Average fuel gas heat content shall be determined through analysis of grab samples of the fuel gas collected once per day where the limit of concern is expressed as hourly number and no less than once per week where the limit is expressed as a 12-month rolling average.

K. Copies of all records are required to be kept under this section shall be retained by the permittee for a period of 5 years, and shall be made available to the Toledo Division of Environmental Services upon verbal or written request.

L. Flares (P036 and P037)

i. A pilot flame shall be maintained at all times in the flare's pilot light burner.

ii. The permittee shall properly install, operate, and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

For each day the associated emissions unit is in operation, the permittee shall record all periods during which there was no pilot flame or the monitoring equipment was not operating.

iii. The permittee shall submit deviation (excursion) reports, as required under Additional Term N of this section, that identify all periods during which the pilot flame was not functioning properly. The reports shall include the date, time, and duration of each such period.

M. Records

Except as may otherwise be provided in the terms and conditions, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

i. the date, place (as defined in the permit), and time of sampling or measurements;

ii. the date(s) analyses were performed;

iii. the company or entity that performed the analyses;

iv. the analytical techniques or methods used; and,

v. the results of such analyses.

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

N. Reports

Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:

i. Reports of any required monitoring and/or recordkeeping information shall be submitted to the Toledo Division of Environmental Services.

ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in

accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be promptly made to the Toledo Environmental Control. These quarterly written reports shall satisfy the requirements of OAC rule 3745-77-07(A)(3)(c)(i) and (ii) pertaining to the submission of monitoring reports every six months and OAC rule 3745-77-07(A)(3)(c)(iii) pertaining to the prompt reporting of all deviations except malfunctions, which shall be reported in accordance with OAC rule 3745-15-06.

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter.

The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the Toledo Division of Environmental Services every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. These semi-annual written reports shall satisfy the requirements of OAC rule 3745-77-07(A)(3)(c)(i) and (ii) pertaining to the reporting of any deviations related to the monitoring, recordkeeping, and reporting requirements.

If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.

iv. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

VI. Compliance Method Requirements

A. Compliance with the emission limitations of this permit to install shall be determined in accordance with the following methods (where compliance is required to be determined by calculation, the data to be used in the

calculation is the data required to be collected by the terms of this permit):

	Emission Limitation	Applicable Compliance Method*
B001	16.2 lbs/hr and 47.3 TPY CO	Performance Stack testing to determine maximum hourly emissions. Multiply the monthly fuel gas flow (scf/hr) by the stack test derived CO emission factor, in terms of lb/MMSCF fuel gas burned corrected for heating value, to determine monthly total CO emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total CO emissions.
	0.10 gr H_2S/dscf fuel gas burned	Method 11 of 40 CFR Part 60, Appendix A
	40.5 lbs/hr and 118.26 TPY NO_x	Performance Stack testing to determine maximum hourly emissions. Multiply the stack test derived NO_x emission factor, in terms of lb/MMBtu by the monthly average hourly fuel gas burned to determine monthly total NO_x emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total NOx emissions.
	1.22 lbs/hr and 3.55 TPY PM/PM_{10}	Multiply AP-42 emission factor of 0.3 lb PM/MMSCF fuel gas burned corrected for heating value by the actual fuel gas burned in MMSCF/hr (average monthly fuel gas burned may be acceptable). Multiply this result by the number of hours operated per month to determine monthly total PM/PM_{10} emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total PM/PM_{10} emissions.
	8.5 tons/yr SO_2	Multiply the monthly average H_2S concentration by the monthly total gas flow to determine lbs H_2S per month. Convert H_2S to SO_2 at a rate of 34 lbs H_2S to 64 lbs SO_2 to determine monthly total SO_2 emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total SO_2 emissions.

	0.69 lb/hr and 2.01 TPY VOC	Multiply by AP-42 emission factor of 1.7 lbs VOC/MMSCF fuel gas burned corrected for heating value by the actual fuel gas burned in MMSCF/hr (average monthly fuel gas burned may be acceptable). Multiply this result by the number of hours operated per month to determine monthly total VOC emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total VOC emissions.
B006	42.0 lbs/hr and 122.64 TPY NO_x (new emissions level for netting decrease)	Performance Stack testing to determine hourly emissions. Multiply the stack test derived NOx emission factor, in terms of lb/MMBtu by the monthly average hourly fuel gas burned to determine monthly total NO_x emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total NOx emissions.
B016	262,800 MMBtu/yr (NO_x netting restriction)	Multiply monthly average MMSCF fuel gas burned by monthly average BTU content (MMBtu/MMSCF) to get the monthly total. Add monthly total to total for the previous 11 months to determine rolling 12-month total MMBTU/yr.
B019	21.02 TPY SO_2 (will experience net increase in actual emissions)	Multiply the monthly average H_2S net concentration by the monthly total gas flow to determine lbs H_2S per month. Convert H_2S to SO_2 at a rate of 34 lbs H_2S to 64 lbs SO_2 to determine monthly total SO_2 emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total SO_2 emissions.
	262.8 TPY NO_x (will experience net increase in actual emissions)	Multiply the BP NO_x emissions factor (pre-determined by similar unit testing) of 0.25 lb/MMBTU fuel gas burned by the fuel gas burned in MMBtu/month to determine monthly total NO_x emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total NO_x emissions.

B032	15.0 lbs/hr and 43.8 TPY CO	Performance Stack testing to determine hourly emissions. Multiply the monthly average hourly fuel gas flow (scf/hr) by the stack test derived CO emission factor, in terms of lb/MMSCF fuel gas burned corrected for heating value to determine monthly total CO emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total CO emissions.
	0.10 gr H_2S/dscf fuel gas burned	Method 11 of 40 CFR Part 60, Appendix A
	26.25 lbs/hr and 76.65 TPY NO_x	Performance Stack testing to determine hourly emissions. Multiply the stack test derived NO_x emission factor, in terms of lb/MMBtu by the monthly average hourly fuel gas burned to determine monthly total NOx emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total NOx emissions.
	1.19 lbs/hr and 3.29 TPY PM/PM_{10}	Multiply AP-42 emission factor of 0.3 lb PM/MMSCF fuel gas burned corrected for heating value by the actual fuel gas burned in MMSCF/hr (average monthly fuel gas burned may be acceptable). Multiply this result by the number of hours operated per month to determine monthly total PM/PM_{10} emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total PM/PM_{10} emissions.
	13.9 tons/yr SO_2	Multiply the monthly average H_2S concentration by the monthly total gas flow to determine lbs H_2S per month. Convert H_2S to SO_2 at a rate of 34 lbs H_2S to 64 lbs SO_2 to determine monthly total SO_2 emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total SO_2 emissions.
	0.66 lb/hr and 1.86 TPY VOC	Multiply by AP-42 emission factor of 1.7 lbs VOC/MMSCF fuel gas burned corrected for heating value by the actual fuel gas burned in MMSCF/hr (average monthly fuel gas burned may

	be acceptable). Multiply this result by the number of hours operated per month to determine monthly total VOC emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total VOC emissions.
F005 5.02 tons/yr PM/PM_{10}	AP-42 calculation using sections 13.2.4 and 13.2.5 dated 1/95 and monthly total amount of coke handled to determine PM/PM_{10} emissions. Add monthly total to total for previous 11 months to determine rolling 12-month total.
F006 1.86 tons/yr PM/PM_{10}	Multiply emission factor of 0.02 lb PM/ton of coke crushed by the monthly total coke crushed in tons times the factor (0.3) to determine the monthly total PM/PM_{10} emissions. Add monthly total to total for previous 11 months to determine rolling 12-month total.
P011 3.57 tons SO_2/yr from combustion of the offgas	Multiply the daily sample(s) H_2S content result by the actual offgas flow in MMSCF/day (or sample period) to determine lbs/day (total daily gas flow may be used when only 1 sample/day is collected). Total the daily H_2S amounts to determine monthly total H_2S emissions. Convert H_2S to SO_2 at a rate of 34 lbs H_2S to 64 lbs SO_2 to determine monthly total SO_2 emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total SO_2 emissions.
P036 91.37 lbs/hr and 77.9 tons/yr SO_2	Performance Stack testing to determine maximum hourly emissions, and compliance with/accuracy of the BP-estimated lb/cycle emission factor. Multiply the stack test confirmed or derived emission factor (lbs/cycle) by the number of blowdown cycles per month to determine monthly total H_2S emissions. Convert H_2S to SO_2 at a rate of 34 lbs H_2S to 64 lbs SO_2 to determine monthly total SO_2 emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total SO_2 emissions.

	5.07 lbs/hr and 4.3 tons/yr VOC from blowdown gases	Multiply emission factor of 17.75 lbs/cycle by the number of blowdown cycles per month to determine monthly total VOC emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total VOC emissions. Emission factor to be verified post-startup.
	7.38 lbs/hr and 10.8 tons/yr VOC from coke cutting	Multiply emission factor of 44.28 lbs/cycle by the number of blowdown cycles per month to determine monthly total VOC emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total VOC emissions.
	20.5 TPY VOC from fugitive leaks	NSPS Subpart GGG
P037	250 ppm SO_2 by volume at 0% oxygen as an average per 12-hr period	Methods 3 and 6 of 40 CFR Part 60, Appendix A
	172 tons/yr SO_2	Multiply the monthly average SO_2 concentration from the CEM by the monthly total gas flow to determine monthly total SO_2 emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total SO_2 emissions.
	2.7 lbs/hr and 8.07 TPY CO	Multiply by AP-42 CO emission factor of 61 lb/MMSCF fuel gas burned corrected for heating value by the fuel gas burned in MMSCF/hr to determine lb/hr emissions (average monthly fuel gas burned may be acceptable). Multiply this result by the number of hours operated per month to determine monthly total CO. Add monthly total to total for the previous 11 months to determine rolling 12-month total CO emissions.
	4.4 lbs/hr and 12.76 TPY NO_x	Multiply manufacturer's guaranteed low-NO_x burner emission factor of 0.10 lb/MMBtu fuel gas burned by the actual fuel gas burned in MMBtu/hr to determine lbs/hr (average monthly fuel gas burned may be acceptable). Multiply this result by the number of hours operated per month to determine monthly total NO_x emissions.

		Add monthly total to total for the previous 11 months to determine rolling 12-month total NO_x emissions.
	0.6 lb/hr and 1.74 TPY PM/PM_{10}	Multiply AP-42 emission factor of 13.7 lbs/MMSCF fuel gas burned corrected for heating value by the actual volume of fuel gas burned in MMSCF/hr to determine lbs/hr (average monthly fuel gas burned may be acceptable). Multiply this result by the number of hours operated per month to determine monthly total PM/PM_{10} emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total PM/PM_{10} emissions.
	6.2 TPY VOC from fugitive leaks	NSPS Subpart GGG
P038	0.1 lb/hr and 0.29 TPY VOC	Multiply by AP-42 emission factor of 5.8 lbs/MMSCF fuel gas burned corrected for heating value by the actual volume of fuel gas burned in MMSCF/hr to determine lbs/hr (average monthly fuel gas burned may be acceptable). Multiply this result by the number of hours operated per month to determine monthly total VOC emissions. Add monthly total to total for the previous 11 months to determine rolling 12-month total VOC emissions.
	5.0 TPY VOC from fugitive leaks	NSPS Subpart GGG

* Unless specified otherwise, all ton/yr (TPY) and MMBtu/yr limits are 12-month rolling totals.

B. If the Ohio EPA or the Permittee believes that any of the emission factors specified in the above may not be representative of the actual emissions of the emission unit to which it applies, the Permittee shall conduct testing (unless the actual emissions are known to be lower than the current factor, in which case it is the applicant's choice to test) of the emission unit to determine what the actual emission factor is, and submit the results of that testing to the Ohio EPA together with a request that the Director approve a new emission factor to be used in determining compliance for the emission unit. Upon approval by the Director of the emission factor proposed by the Permittee, the new emission factor shall be used for purposes of demonstrating compliance with the affected emission limit.

The TPY fugitive emission allowables stated in this permit were developed by the permittee using U.S. EPA protocol documents and good engineering judgment, to estimate as accurately as possible the maximum emissions that could be expected. If it is determined that the allowable emissions are inaccurate, Ohio EPA will accept and review a request for permit modification from the permittee. Ohio EPA will modify the permit, in accordance with the permittee's request, and replace the current allowables with new emissions that the Ohio EPA finds to be acceptable.

C. Performance Tests (the above Performance Testing and Monitoring Requirements sections of this permit are also applicable)

i. Emission Tests For Purposes of Demonstrating NSPS Compliance

Within 60 days after achieving the maximum rate at which the following sources will be operated, but no later than 180 days after initial start-up, the owner or operator shall conduct tests in accordance with the methods indicated to demonstrate compliance with the indicated emission limit:

Source	Emission Limits	Test Method
B001	0.10 gr H_2S/dscf of fuel gas	Method 11
B032	0.10 gr H_2S/dscf of fuel gas	Method 11
P037	250 ppmv SO_2 (12 hr avg.)	Method 6

ii. Emission Tests for Purposes of Verifying Low-NO_x Emission Factors

Within 60 days after achieving the maximum rate at which the following sources will be operated, but no later than 180 days after initial start-up, the owner or operator shall conduct NO_x emission tests on sources B001 (Hydrogen Furnace), B032 (Coker 3 Furnace) and B006 (Reformer 2 Furnace) to verify or establish new emission factors to be used in demonstrating compliance with applicable NO_x limitations and the net emissions reductions included in the permit application for those sources. The appropriate test method shall be used (method 7 or 7E).

iii. The pounds per hour emission allowables stated in this permit were developed by the permittee using information contained in AP-42 and good engineering judgement, to estimate as accurately as possible the

maximum emissions that could be expected. For the units being required to conduct performance stack testing upon startup, if it is determined by testing that the allowable emission rates are inaccurate, Ohio EPA will accept and review a request for permit modification from the permittee. Ohio EPA will modify the permit, in accordance with the stack testing results and the permittee's request, and replace the current allowables with new emission rates that the Ohio EPA finds to be acceptable.

VII. SRU Flare Restrictions

A. The permittee shall install flow measuring devices to be used for quantification of emissions routed from the SRU to the flare. The flow measuring devices shall be installed, calibrated and operational prior to start-up of the new SRU(s). Subsequently, the data collected beginning with activation of the relief valve until the release is over, shall be quantified and submitted to the Toledo Division of Environmental Services and Ohio EPA as part of the excess emission report. The permittee shall continue to immediately report any malfunction of the sources in accordance with OAC rule 3745-15-06.

VIII. Preventive Maintenance Malfunction Abatement Plan (PMMAP)

A. No later than 180 days prior to startup of operations under this permit, the applicant is required to submit to the Ohio EPA for review and comment a Preventative Maintenance Malfunction Abatement Plan (PMMAP) for the three Sulfur Recovery Units (SRUs) at the facility.

This plan will be subject to Ohio EPA review and comment. The comprehensive plan shall include, but not be limited to, the following:

i. an identification of events, within the SRU or Tail Gas Treaters or upstream units/operations, likely to cause malfunctions and/or non-routine shutdowns or bypasses of the SRUs or Tail Gas Treaters (TGTs), and a description of the steps taken to prevent or minimize the likelihood of such events occurring;

ii. a description of steps or procedures reasonably available to be taken in order to prevent or minimize flaring of feeds to the SRUs during any period when one or more SRUs is shutdown or being bypassed, along with an indication of limitations on the availability of such steps;

iii. a description of steps to be taken to minimize excess emissions from the SRUs during routine or scheduled startups and shutdowns of the SRUs and TGTs;

iv. a comprehensive preventative maintenance program, including a description of the items or conditions that will be inspected, the frequency of these inspections or repairs, and an identification of the types and quantities of replacement parts which will be maintained in inventory for quick replacement;

v. an identification of the source and the operating outlet variables of the air pollution control equipment that will be monitored in order to detect a malfunction or failure, the normal operating range of these variables, and a description of the monitoring or surveillance procedures and of the method of informing operating personnel of any malfunction, including alarm systems, lights and/or other indicators; and,

vi. a description of the corrective procedures that will be taken in the event of a malfunction or failure in order to achieve compliance with any applicable law or permit limit as expeditiously as practicable.

B. Within 180 days of issuance of this permit, the applicant shall submit to the Ohio EPA an expanded outline and a status report on the development of the PMMAP for the SRUs required under A.

C. Prior to startup of operations under this permit, the applicant is required to submit to the Ohio EPA for review and comment a Preventative Maintenance Malfunction Abatement Plan for units/operations, other than the three SRUs, affected by the Toledo Repositioning Project that may have excess emissions during startup, shutdown or malfunctions.

D. Within 180 days of issuance of this permit, the applicant shall provide a listing of emissions units affected by the Toledo Repositioning Project that may have excess emissions during startup, shutdown or malfunctions, which will be included in the plan required under C. This listing shall be submitted to Ohio EPA for review and comment.

E. The plan may be revised and resubmitted in the future, subject to Ohio EPA review and comment. The permittee shall implement the PMMAP from the time of startup of the units/processes covered, so as to minimize to the greatest extent possible excess emissions. The permittee shall maintain records for a period of at least 5 years to verify that this requirement, and the content of the final PMMAP, has been met. These records shall be made available to Ohio EPA and Toledo Division of Environmental Services staff upon request. Nothing in this section shall be construed to relieve the permittee

from its obligation to comply with the requirements of OAC 3745-15-06(A) and (B), and OAC 3750-25-25 (related to toxic release reporting).

F. Nothing in this permit condition shall modify or limit the director's authority under OAC 3745-15-06(D) to require a preventative maintenance and malfunction abatement plan which is acceptable to the Director if, as the rule states, in the judgment of the Director, such a plan is needed for any units under this permit or existing at this facility.