

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BUREAU OF AIR

DIVISION of AIR POLLUTION CONTROL

PERMIT SECTION

PROJECT SUMMARY for the
DRAFT TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
For

CITGO Petroleum Corporation
Lemont, Illinois

Permit Engineer/Technical Contact: Dan Punzak, 217/782-2113

Community Relations/Comments Contact: Brad Frost, 217/782-7027

Springfield, Illinois

I. INTRODUCTION

This source has applied for renewal of its Title V - Clean Air Act Permit Program (CAAPP) operating permit (I.D. 197090AAI, Permit 96030079) for its operation. The CAAPP is the program established in Illinois for operating permits for significant stationary sources as required by the federal Clean Air Act, as amended in 1990, and 40 CFR Part 70. Unlike state operating permits, the conditions in a CAAPP permit are enforceable by both the Illinois Environmental Protection Agency (Illinois EPA) and the USEPA. This document is for informational purposes only and does not shield the Permittee from enforcement actions or its responsibility to comply with applicable regulations. This document shall not constitute a defense to a violation of the Act or any rule or regulation.

A Title V permit contains conditions listing the applicable state and federal air pollution control regulations that apply to a source. The permit conditions also establish emission limits, appropriate compliance procedures, and specific operational flexibility. The appropriate compliance procedures may include monitoring, record keeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the source is operating in accordance with the requirements of the permit.

II. SOURCE DESCRIPTION INFORMATION

a. Location and nature of business

The CITGO Petroleum Corporation Refinery is located at 135th Street and New Avenue in Lemont. The source produces petroleum distillates, petroleum coke and petrochemicals. In addition, petroleum refining requires a large amount of heat which the Permittee generates with numerous process heaters and three boilers.

b. National Ambient Air Quality Standard status for this area

This permit is issued based on the source being located in an area that, as of the date of permit issuance, is designated nonattainment for the National Ambient Air Quality Standards for ozone (moderate) and PM_{2.5} and attainment or unclassifiable for all other criteria pollutants (CO, lead, NO_x and SO₂).

c. Major source status

The proposed permit is based on:

1. The source requiring a CAAPP permit as a major source of PM_{2.5}, NO_x, CO, SO₂, VOM and HAP emissions.

d. Significant emission units

Permit Emission Unit Number	Permittee Unit Number ^a	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
Section 7.1				
01	102	FCCU Gasoline Hydrotreater ISAL Reactor Heater 102B-2	2002	Ultra Low NO _x Burners
02	103	Hydrotreater Feed Heater 103B-1	1988	None
03	104	Absorber Feed Heater 104B-20	1988	None
04	104	Hydrogen Recycle Heater 104B-21	1988	None
05	106	Vacuum Heater 106B-1	1985	Low NO _x Burners
06	107	Recycle Gas Heater 107B-21	1985	Low NO _x Burners
07	108	Process Heater 108B-41	1985	Low NO _x Burners
08	108	Steam Superheater 108B-42	1985	Low NO _x Burners
09	109	Steam HC Reformer Heater 109B-62	1985	Low NO _x Burners
10	111	Atmospheric Heater 111B-1A	Pre-1973	Ultra Low NO _x Burners
11	111	Atmospheric Heater 111B-1B	Pre-1973	Ultra Low NO _x Burners
12	111	Vacuum Heater 111B-2	Pre-1973	Ultra Low NO _x Burners
13	112	FCC Air Heater 112B-1	Pre-1973	None
14	112	CO Boiler 112B-2	Pre-1973	None
15	113	Coker Charge Heater 113B-1	Pre-1973	Ultra Low NO _x Burners
16	113	Coker Charge Heater 113B-2	Pre-1973	Ultra Low NO _x Burners
17	113	Coker Charge Heater 113B-2	1985	Low NO _x Burners
18	114	Feed Preheater 114B-1	Pre-1973	None
19	114	Stripper Trim Reboiler 114B-2	Pre-1973	None
20	114	Stripper Reboiler 114B-3	Pre-1973	None
21	115	Feed Heater 115B-1	Pre-1973	None
22	115	Stripper Reboiler 115B-2	Pre-1973	None

23	116	Charge Heater and Stabilizer Reboiler 116B-1	Pre-1973	None
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Permit Emission Unit Number	Permittee Unit Number ^a	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
24	116	Interheater and Naphtha Stripper Reboiler 116B-2	Pre-1973	None
25	116	#2 Interheater 116B-3	Pre-1973	None
26	116	Stabilizer Trim Reboiler 116B-4	Pre-1973	None
27	118	Hot Oil Heater 118B-1	Pre-1973	None
28	118	Reactor Charge Heater 118B-51	Pre-1973	None
29	122	ARU (Clay) Tower Furnace 122B-1	Pre-1973	None
30	122	Reactor Charge Heater 122B-2	Pre-1973	None
31	123	Feed Preheater 123B-1	Pre-1973	None
32	123	Feed Preheater 123B-2	Pre-1973	None
33	123	Reheat Furnace 123B-3	Pre-1973	None
34	123	Reheat Furnace 123B-4	Pre-1973	None
35	123	Reheat Furnace 123B-5	Pre-1973	None
36	125	Feed Heater 125B-1	Pre-1973	None
37	125	Stripper Reboiler 125B-2	Pre-1973	None
38	430	Auxiliary Boiler 430B-1	Pre-1973	None
39	431	North Plant Boiler 431B-20	2001	None
Section 7.2				
40	Storage Tanks - See Attachment 5			
Section 7.3				
41	112	Catalyst Regenerator 112D-1	Pre-1973	CO Boiler (112B-2) & ESPs (112P-1 & 2)
42	112	Catalyst Hoppers (112F-1 and 112F-2)	Pre-1973	Scrubber (112X-11)
Section 7.4				
43	120-1	HF Alkylation Reactor and Most Vessels are Closed Vent but Relief Valves Vent to Header and Knockout Drum	1984	Scrubber (Neutralizer) and Smokeless Flare
44	120-2	KOH Regeneration	1998	Carbon Canisters

Permit Emission Unit Number	Permittee Unit Number ^a	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
45	120-3	Lime Storage Silo	1998	
46	120-4	RADI System	1998	
Section 7.5				
47	119	Claus Sulfur Recovery Process (119A)	1969	Oxidizers
48	119	Claus Sulfur Recovery Process (119B)	1969	Oxidizers
49	121	Claus Sulfur Recovery Process (121C)	1974	BSRP and Combustor
50	121	Claus Sulfur Recovery Process (119B)	1974	BSRP and Combustor
Section 7.6				
51	333	Barge Loading	Pre-1973	Vapor Combustor
52	334	Santa Fe LPG and Racing Gasoline Tank Car Loading Rack	Pre-1973	Submerged Loading Pipe for Racing Gasoline
53	335	Fuels Transport Loading Rack	Pre-1973	Enclosed Flare
54	337	ICG Tank Car Loading Rack	Pre-1973	Submerged Loading Pipe
55	338	Solvent Truck Loading Rack	Pre-1973	Submerged Loading Pipe
56	335	Three Ethanol Storage Tanks (335 TK-5, 6, 7)	2001	Submerged Loading Pipe
57	335	Gasoline Additive Storage Tank (TK-401)	1992	Submerged Loading Pipe
Section 7.7				
58	844	North Refinery Flare Gas Recovery System and Flare Stack (844C-1)	Pre-1973	None
59	844	South Refinery Flare Gas Recovery System and Flare Stack (Block 2)	Pre-1973	None
60	844	South Refinery Flare Gas Recovery System and Flare Stack (Block 3)	Pre-1973	None

Permit Emission Unit Number	Permittee Unit Number ^a	Description and Permittee Equipment Number	Date Constructed	Emission Control Equipment
61	844	Needle Coker Flare Gas Recovery System and Flare Stack	1985	None
Section 7.8				
		Component Leaks		LDAR
Section 7.9				
62		Process Sewer Systems	Various	Water Seals on drains in certain units or portions of units
63	844	Nos. 4 and 5 North Plant Oil-Water Separators (844-1)	1983	Cover, Carbon Adsorber
64	844	No. 5 South Plant Oil-Water Separators (844-2)	1989	Cover, Bladder Tank, Carbon Adsorber
65	844	Wastewater Treatment Plant	Pre-1973	None
Section 7.10				
66	122	UDEX Unit	Pre-1973	None - No Open Vents
Section 7.11				
67	420	South Plant Cooling Tower (420E-1)	Pre-1973	None
68	420	Alky Cooling Tower (420E-7)	1985	None
69	421	North Refinery Cooling Tower (421E-2)	Pre-1973	None
70	421	Needle Coker Cooling Tower (421E-3)	1983	None
Section 7.12				
71	---	Cold Cleaning Degreaser with Spray	Pre-1973	Doors and Cover
Section 7.13				
72	123	Naphtha Desulfurizer/Catalytic Reformer #1	Pre-1973	None
73	116	Catalytic Reformer #2	Pre-1973	None

III. EMISSIONS INFORMATION

The proposed permit does not limit the maximum annual source wide emissions from significant emission units at the source. The Permittee has elected to pay the maximum

fee, which is currently \$250,000 per year. Unit specific emission unit limitations are found within Sections 5 and 7 of the proposed permit.

This proposed permit contains terms and conditions that address the applicability, and, if determined applicable, substantive requirements of Title I of the Clean Air Act (CAA) and regulations promulgated thereunder, including 40 CFR 52.21, Prevention of Significant Deterioration (PSD) and 35 IAC Part 203, Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the proposed permit by T1, T1R, or T1N. Any conditions established in a construction permit [T1] pursuant to Title I and not revised or deleted in this proposed permit, remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them. Where the source has requested that the Illinois EPA establish new [T1N] or revise [T1R] such conditions in a Title I permit, those conditions are consistent with the information provided in the Title V application and will remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them.

This proposed permit does not establish any new [T1N] requirements or revised [T1R] requirements.

IV. EMISSIONS CONTROL PROGRAMS INFORMATION

a. Emissions Reduction Market System (ERMS)

Because this source is located in the Chicago ozone non-attainment area and emits volatile organic material (VOM), the proposed permit includes conditions to implement the Emissions Reduction Market System (ERMS). The ERMS is a market-based program designed to reduce VOM emissions from stationary sources to contribute to reasonable further progress toward attainment, as further described in Section 6.0 of the proposed permit. The proposed permit contains the Illinois EPA's determination of the source's baseline emissions and allotment of trading units under the ERMS, and identifies units not subject to further reductions.

b. NO_x Averaging

The Nitrogen Oxides (NO_x) Trading Program, as further described in Section 6.0, is a regional "cap and trade" market system for large sources of NO_x emissions in the eastern United States, including Illinois. It is designed to reduce and maintain NO_x emissions from the emission units covered by the program within a budget to help contribute to attainment and maintenance of the ozone ambient air quality standard in the multi-state region covered by the program. The NO_x Trading Program applies in addition to other applicable requirements for NO_x emissions and in no way relaxes these other requirements.

V. COMPLIANCE ASSURANCE MONITORING (CAM) PLAN INFORMATION

The Compliance Assurance Monitoring (CAM) plan is a program for pollutant-specific emission units which use an add-on control device to achieve compliance with an emission limitation or standard, has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than major source threshold levels, and is not specifically exempt by 40 CFR Part 64. Subject units and the CAM plans are identified in Attachment 3 of the proposed permit.

VI. OTHER PERTINENT INFORMATION

a. Fugitive Particulate Matter Operating Program

The fugitive operating program is intended to significantly reduce fugitive particulate matter emissions within certain affected locations and facilities in Illinois. The source is subject to the fugitive operating program for particulate matter. Normally, affected operations by this program include, but are not limited to, addressing normal traffic pattern roads, parking facilities, and material piles and handling. Usually a source addresses the programs through the use of water, oils, or chemical dust suppressants.

b. Risk Management Plan (RMP)

A risk management plan (RMP) is a program required for a source affected by Chemical Accident Prevention for reducing the levels of emissions during an emergency, consistent with safe operating procedures. The Permittee is required to immediately implement the appropriate steps described in this plan should an emergency be declared. The Permittee is required to maintain and have this plan on file with the Illinois EPA.

c. Episode Action Plan (EAP)

An episode action plan (EAP) is a program for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The Permittee is required to immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared. The Permittee is required to maintain and have this plan on file with the Illinois EPA.

d. PM₁₀ Contingency Measure Plan

This stationary source is required to prepare and submit a contingency measure plan reflecting the PM₁₀ emission reductions. Such plan is incorporated by reference into the proposed permit and shall be implemented by the Permittee.

VII. COMPLIANCE INFORMATION

The source has certified compliance with all applicable rules and regulations; therefore, a compliance schedule is not required for this source.

The source is operating under the following known Consent Decree: Global Consent Decree between the USEPA, Illinois EPA and various other state environmental agencies covering refineries at multiple locations in the United States. The Date of Lodging of the Consent Decree was October 6, 2004 and the Date of Entry was January 26, 2005.

VIII. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source's permit application meets the standards for issuance of a Title V permit. The Illinois EPA is therefore proposing to issue a Title V permit, subject to the conditions proposed in the draft permit.

Comments are requested by the Illinois EPA for the proposed permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 166.

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