

**SIP CONSTRUCTION & OPERATING PERMIT AND TITLE V 502(b)10 CHANGE APPLICATION REVIEW**

Facility Name: **CITGO Asphalt Refining Company**

City: Savannah

County: Chatham

AIRS #: 04-13-051-00012

Application #: TV17164

Date SIP Application Received: December 18, 2006

Date Title V Application Received: December 18, 2006

Permit No: 2911-051-0012-V-02-1

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**Introduction**

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and operate and Section 502(b)(10) change to the Part 70 source. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1), 391-3-1-.03(2), and 391-3-1-.03(10). of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the permit and is presented in the same general order as the permit amendment. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

**I. Facility Description**

A. Existing Permits

Table 1 below lists the current Title V permit, all administrative amendments and minor and significant modifications to that permit, and any 502(b)(10) changes. Comments are listed in Table 2 below.

**Table 1: Current Title V Permit and Amendments**

Permit/Amendment Number	Date of Issuance	Comments	
		Yes	No
2911-051-0012-V-02-0	November 22, 2005	X	

**Table 2: Comments on Specific Permits**

Permit Number	Comments
2911-051-0012-V-02-0	Renewal Title V Permit.

B. Regulatory Status

1. PSD/NSR/RACT

CITGO Asphalt Refining Company (hereinafter facility) is located in Chatham County, an attainment area for all criteria pollutants. It is one of the 28 named source categories under PSD regulations because the facility is a refinery. This plant is a major source under PSD/NSR regulations because its potential-to-emit (PTE) for nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOC), and sulfur dioxide (SO<sub>2</sub>) is greater than 100 tpy, each, and its PTE for reduced sulfur (TRS/H<sub>2</sub>S) is greater than 10 tpy. The facility has made several modifications to its plant in the past but has avoided PSD reviews by accepting various operating and emission caps.

The facility modified No. 2 Unit Heater (ID No. F002) in 1984. The facility received a PSD avoidance permit, through a PSD netting exercise. The sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) emissions from Heater F002 were capped by limiting the residual oil usage of Heater F002 and the sulfur content in the residual oil; the limits are now contained in Condition 3.2.1 of renewal TV Permit No. 2911-051-0012-V-02-0.

The facility submitted Application No. TV-13891 for the replacement of distillation tower No. 1 (ID No. D001) in 2002. The facility received a PSD avoidance permit by accepting facility-wide emission limits of NO<sub>x</sub>, SO<sub>2</sub>, volatile organic compounds (VOC), and reduced sulfur (H<sub>2</sub>S). The emission limits were contained in Conditions 2.1.2 – 2.1.5 of TV Permit Amendment No. 2911-051-0012-V-01-1 but were later replaced by the new caps specified in Conditions 2.1.2 – 2.1.5 of Title V Permit Amendment No. 2911-051-0012-V-01-2.

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The facility submitted Application No. TV-14951 for the replacement of distillation tower No. 2 (ID No. D002), received on January 13, 2004. The facility got a PSD Avoidance Permit No. 2911-051-0012-V-01-2 on November 9, 2004, to authorize the replacement of Distillation Tower D002. The permit amendment contained new emission limits to avoid a PSD review and existing Conditions 2.1.2 – 2.1.5 of TV Permit Amendment No. 2911-051-0012-V-01-1 were replaced. Conditions 2.1.3-2.1.5 of Title V Permit Amendment No. 2911-051-0012-V-01-2 included new emission limits for NO<sub>x</sub>, VOC, and H<sub>2</sub>S. Condition 2.1.2 of Title V Permit Amendment No. 2911-051-0012-V-01-2 contained an annual facility-wide residual fuel oil consumption limit that effectively limited annual SO<sub>2</sub> emissions to 192.4 tpy. Note that this residual fuel oil limit was more stringent than the limit in existing Condition 3.2.2 of TV Permit No. 2911-051-0012-V-01-0; the residual fuel oil consumption limit in existing Condition 3.2.2 was deleted in Permit No. 2911-051-0012-V-01-2. Please refer to the narrative that explained Permit No. 2911-051-0012-V-01-2 for further details. These limits are now contained in Conditions 2.1.2 – 2.1.5 of renewal Title V Permit No. 2911-051-0012-V-02-0.

2. Title V Major Source Status by Pollutant

**Table 3: Title V Major Source Status**

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓			✓
PM <sub>10</sub>	✓			✓
SO <sub>2</sub>	✓	✓		
VOC	✓	✓		
NO <sub>x</sub>	✓	✓		
CO	✓			✓
TRS	✓	✓		
H <sub>2</sub> S	✓	✓		
Individual	✓		✓	
Total HAPs	✓		✓	

## II. Proposed Modification

### A. Description of Modification

An existing fixed roof storage tank with ID No. T001, with a capacity of 77077 barrels, is designated to store asphalt. However, this tank has been out of service for the last six years. CITGO submitted Title V Application No. TV-17164 dated December 13, 2006 and proposed to replace Tank T001 during the first quarter of 2007. The new storage tank with ID No. T001 will be built with the same capacity (77077 barrels or approximately 3,240,000 gallons) at the same location. This new tank will be equipped with an internal floating roof. The facility proposed to use new Tank T001 in crude service.

The modification projects described above will be an approved change in accordance with 502(b)(10) of the federal Clean Air Act, which states:

“Provisions to allow changes within a permitted facility (or one operating pursuant to section 503(d)) without requiring a permit revision, if the changes are not modifications under any provision of title I and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions.) Provided, that the facility provides the administrator and the permitting authority with written notification in advance of the proposed changes which shall be a minimum of 7 days, unless the permitting authority provides in its regulations a different timeframe for emergencies.”

The following describes how the proposed change meets the requirements under 502(b)(10) of the federal Clean Air Act:

**1. The facility must provide the administrator and permitting authority with a written notification in advance of the proposed change, which shall be a minimum of 7 days.** A written notification dated December 13, 2006 was submitted to the Air Protection Branch and the U.S. EPA. The Air Protection Branch received the letter on December 18, 2006. The 502(b)(10) Permit for Part 70 Source will be issued more than 7 days after the receipt of the notification.

**2. A 502(b)(10) amendment cannot allow a change that would contravene an existing federally enforceable monitoring (including testing methods), record keeping, reporting, or compliance certification permit condition.** To satisfy this requirement, no existing permit requirement is being modified in any way.

**3. A 502(b)(10) amendment cannot allow a change that results in an exceedance of an allowable emission limit in a permit.** No change will be made to any emission limits or emission caps contained in the existing permit due to this modification.

**4. A 502(b)(10) amendment cannot allow a change that would be a Title I modification, which includes the following:**

**a. A significant modification which triggers Non-attainment Area New Source Review (NAA NSR), as per 40 CFR Part 52.**

NAA NSR is not applicable since Chatham County is in an attainment area for all regulated pollutants.

**b. A significant modification, which triggers Prevention of Significant Deterioration PSD review, as defined in Part 52.21.**

As discussed previously, CITGO Asphalt Refining Company is located in an attainment area for all criteria pollutants, is one of the 28 named source categories under PSD regulations, and is a major source under PSD for NO<sub>x</sub>, VOC, SO<sub>2</sub>, and TRS/H<sub>2</sub>S. Existing Conditions 2.1.1 through 2.1.5 and 3.2.1.b of the renewal Title V Permit (No. 2911-051-0012-V-02-0) contain PSD avoidance limits. No change will be made to any of these PSD avoidance limits so that no retroactive PSD review will be triggered.

As discussed in Section II.B of this narrative, potential emission increases for all criteria pollutants, without any operating/emission restraints, are all below their PSD significant modification thresholds (40 tpy for NO<sub>x</sub>, VOC, and SO<sub>2</sub> each, and 10 tpy for TRS/H<sub>2</sub>S). The proposed modification is, therefore, a minor modification under PSD regulations and will not trigger any PSD review.

**c. A modification under New Source Performance Standards (NSPS) as defined in 40 CFR Part 60 Subpart 60.14.**

The new storage tank with ID No. T001 is subject to an NSPS (Subpart Kb); however, their installation is not considered a modification according to the NSPS definition of “modification.” Therefore, this issue does not prevent the use of 502(b)(10) for this permit change.

**d. A modification under National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61).**

There is not a NESHAP from 40 CFR Part 61 which could be applicable to the new storage tank with ID No. T001.

**B. Emissions Change**

**Table 4: Emissions Change Due to Modification**

<b>Pollutant</b>	<b>Is the Pollutant Emitted?</b>	<b>Net Actual Emissions Increase (Decrease) (tpy)</b>	<b>Net Potential Emissions Increase (Decrease) (tpy)</b>
PM	No		
PM <sub>10</sub>	No		
SO <sub>2</sub>	No		
VOC	Yes	1.5 tpy	1.5 tpy
NO <sub>x</sub>	No		
CO	No		
TRS	No		
H <sub>2</sub> S	No		
Individual	N/D		
Total HAPs	N/D		

N/D = Not Determined

Although the capacity of Tank T001 will remain the same, additional VOC emissions from the new tank will be expected because the stored material will be changed from asphalt to crude. The facility used the calculation method recommended in EPA AP-42 Chapter 7 “Liquid Storage Tanks” and estimated the potential emissions will change from 2.2 tpy to 3.7 tpy.

Please note that, although this modification is expected to cause additional VOC emissions, the entire facility is still subject to the facility-wide VOC emission cap contained in Condition 2.1.4 of renewal Title V Permit No. 2911-051-0012-V-02-0. The facility did not provide any information of any additional hazardous air pollutants (HAPs) emissions. Although the modification may be expected to cause some additional HAPs emissions, please also note that the facility is still subject to the facility-wide single HAP/combined HAPs emission caps contained in Condition 2.1.1 of renewal Title V Permit No. 2911-051-0012-V-02-0.

C. Title I Modification

See previous discussion “A. *Description of Modification*” that details consideration of the following: PSD/NSR Applicability, NSPS Modification, and NESHAP Modification.

**III. Regulated Equipment Requirements**

**A. Brief Process Description**

CITGO Asphalt Refining Company will replace the existing asphalt storage tank with ID No. T001 with a new tank with the same capacity. The new tank with the same ID (T001) will be a fixed roof tank with an internal floating roof and will be used to store crude.

**B. Equipment List for the New or Modified Process(es)**

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
T001	Fixed roof w/ internal floating roof crude storage tank	40 CFR 60 Subpart A 40 CFR 60 Subpart Kb	3.3.21, 6.2.17, 6.2.18	None	None

\* Generally applicable requirements contained in this permit may also apply to emission units listed above.

**C. Equipment & Rule Applicability**

- Emission and Operating Caps –

None applicable.

- Applicable Rules and Regulations -

The new crude storage tank with ID No. T001 is subject to New Source Performance Standards (NSPS) as found in 40 CFR Part 60, in particular Subpart A “General Provisions” and Subpart Kb “Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.” Tank T001’s capacity is 77077 barrels, which is equal to 3,240,000 gallons. According to a meeting between EPD and CITGO on November 15, 2006 and the 502(b)(10) request letter dated December 13, 2006, EPD realizes that when crude is delivered by vessels and unloaded in the storage tanks, the crude temperature is around 150°F; the crude temperature would not drop much in the storage tank. Previous test data shows that, when crude temperature is around 150°F, the vapor pressure of the crude is between 3.5 kPa (0.508 psi) and 5.2 kPa (0.754 psi). According to 40 CFR 60.110b(a) and (b), new Tank T001 is subject to NSPS Subpart Kb because its capacity is greater than 151 m<sup>3</sup> (39,900 gallons) and the vapor pressure of the stored material is greater than 3.5 kilopascals (kPa). However, it is not subject to any emission standard in 40 CFR 60.112b because the vapor pressure of the stored material is less than 5.2 kPa. It is subject to only the monitoring requirements specified in 40 CFR 60.116b(b) and (c).

**D. Compliance Status**

None applicable.

E. Operational Flexibility

None applicable.

F. Permit Conditions

New Condition 3.3.21 subjects the new crude storage tank with ID No. T001 to NSPS Subparts A and Kb. However, there are no applicable NSPS Subpart Kb emission or operating standards for Tank T001.

**IV. Other Record Keeping and Reporting Requirements**

As explained in Section III.C of this narrative, the new crude storage tank with ID No. T001 is subject to only the monitoring requirements specified in 40 CFR 60.116b(b) and (c). 40 CFR 60.116b(b) requires the owner or operator of an applicable storage tank to keep readily accessible records of the dimensions and an analysis showing the capacity of this tank. 40 CFR 60.116b(c) requires the owner or operator of an applicable storage tank to maintain a record of the volatile organic liquid (VOL) stored, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period for this tank. These record keeping requirements are now included in new Conditions 6.2.17 and 6.2.18 of the proposed 502(b)(10) permit (2911-051-0012-V-02-1).