UNDER PUBLIC REVIEW SMAQMD BACT CLEARINGHOUSE

CATEGORY: **FUEL DISPENSING**

BACT Size: Minor Source BACT **AVGAS LOADING AND/OR UNLOADING**

BACT Determination Number: 187	**BACT Determination Date:**

Equipment Information

Permit Number: 24806
Equipment Description: AVGAS LOADING AND/OR UNLOADING
Unit Size/Rating/Capacity:
Equipment Location: MCCLELLAN JET SERVICES
4545 DUDLEY BLVD
MCCLELLAN, CA

BACT Determination Information

ROCs	**Standard:**	See Comment Field Below
	Technology Description:	See Comment Field Below
	Basis:	Achieved in Practice
NOx	**Standard:**	NA
	Technology Description:	
	Basis:	
SOx	**Standard:**	NA
	Technology Description:	
	Basis:	
PM10	**Standard:**	NA
	Technology Description:	
	Basis:	
PM2.5	**Standard:**	NA
	Technology Description:	
	Basis:	
CO	**Standard:**	NA
	Technology Description:	
	Basis:	
LEAD	**Standard:**	NA
	Technology Description:	
	Basis:	

Comments: 1) The use of vapor recovery system with at least 95% control efficiency for aboveground storage tanks,
2) The use of vapor recovery system with at least 98% control efficiency for underground storage tanks

Control efficiency of a system can be verified either by using an equivalent system that is certified by CARB for use with other fuels, or by testing the system using the test procedure used by CARB for certification.

District Contact: Isam Boulad Phone No.: (916) 874 - 4859 email: iboulad@airquality.org

777 12th Street, Third Floor

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Sacramento, CA 95814

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

DETERMINATION NO.:	187
DATE:	3/26/18
ENGINEER:	Isam Boulad

Category/General Equip Description:	Avgas/Aviation Fuel loading and/or unloading at airports
Equipment Specific Description:	Loading of Avgas/Aviation Fuel from delivery vessels into stationery storage tank and reloading into delivery vessels or directly into airplanes.
Equipment Size/Rating:	Stationary storage tanks having a capacity of less than or equal to 19,800 gallons and dispensing less than 20,000 gallons per day, and less than 6,000,000 gallons per year.
Previous BACT Det. No.:	None

This is a new BACT/T-BACT determination for loading and/or reloading of Avgas/Aviation Fuel into or from stationary storage tanks.

This BACT was determined under the project for A/C 24806 (McClellan Jet Services).

BACT/T-BACT ANALYSIS

A. ACHIEVED IN PRACTICE (Rule 202, §205.1a):

The following control technologies are currently employed as BACT/T-BACT for loading and/or reloading of Avgas/Aviation Fuel into or from stationery storage tanks:

US EPA
BACT Source: EPA RACT/BACT/LAER Clearinghouse There are no BACT standards published in the clearinghouse for this category. **T-BACT** There are no T-BACT standards published in the clearinghouse for this category. The NESHAP standard 40 CFR PART 63 SUBPART CCCCCC “National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities”, exempts the loading of aviation fuel into storage tanks at airports.

California Air Resources Board (CARB)

BACT
Source: ARB BACT Clearinghouse

There are no BACT standards published in the clearinghouse for this category.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:
There are no regulations with standards for this source category. However, the State Board is required to certify gasoline vapor recovery systems including bulk terminal loading racks. (H&S Code 41954). Based on CARB's legal opinion of the definition of gasoline, Avgas/Aviation Fuel is not included in the definition of gasoline in D-200, and H&S Code 41954 can only be applicable to Avgas or aviation fuel only after ARB adopts and implements applicable regulations.

Sacramento Metropolitan AQMD

BACT
Source: SMAQMD BACT Clearinghouse

There are no BACT standards published in the clearinghouse for this category

T-BACT
There are no T-BACT standards published in the clearinghouse for this category

RULE REQUIREMENTS:
RULE 446 STORAGE OF PETROLEUM PRODUCTS

This Rule is not applicable to storage containers with a capacity less than 40,000 gallons.

RULE 447 ORGANIC LIQUID LOADING

This Rule is applicable to bulk plants or bulk terminals as defined in this rule:

BULK PLANT: An organic liquid distribution facility which receives organic liquid from a refinery or bulk terminal by tank truck and distributes the organic liquid by railroad tank car or tank truck to motor vehicles as defined in Rule 449, TRANSFER OF GASOLINE INTO VEHICLE FUEL TANK or stationary storage containers.

BULK TERMINAL: An organic liquid distribution facility which receives organic liquid from the refinery by means other than truck.

The loading and reloading of Avgas/Aviation Fuel does not meet the definition of Bulk Plant or Bulk Terminal as defined in this rule.

Sacramento Metropolitan AQMD

RULE 448 GASOLINE TRANSFER INTO STATIONARY STORAGE CONTAINERS

This Rule is applicable to Avgas because it meets the definition of gasoline as defined in this Rule.

Section 301 - A person shall not transfer or permit the transfer of gasoline, or perform or permit switch loading, from any delivery vessel into any stationary storage container with a capacity of 250 gallons or more or mobile fueler with a capacity of 120 gallons or more, unless such container is equipped with a permanent submerged fill pipe and unless such transfer is made under the following conditions:

Underground storage tanks: Using a CARB-certified vapor recovery system that prevents emission to the atmosphere of at least 98%, by volume, of the fuel vapors displaced from the storage container during the loading of fuel into the storage container.

Aboveground storage tanks: Using a CARB-certified vapor recovery system that prevents emission to the atmosphere of at least 95%, by volume, of the fuel vapors displaced from the storage container during the loading of fuel into the storage container.

South Coast AQMD

BACT
Source: SCAQMD BACT Clearinghouse

There are no BACT standards published in the clearinghouse for this category. However, per email from Tom Lee, District staff, he indicated that the South Coast AQMD treats Avgas like gasoline, thus subject to District Rule 462.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category. However, since the primary VOCs controlled by the applicable District Rule includes HAPs, compliance with the District Rule is considered T-BACT.

RULE REQUIREMENTS:
Reg. IV, Rule 461 – Gasoline Transfer and Dispensing

The requirements of this Rule are applicable to motor vehicles and not airplanes.

Reg. IV, Rule 462 – Organic Liquid Loading

For Class B facilities, this rule requires vapor recovery system with 90% control efficiency.

Reg. IV, Rule 463 – Organic Liquid Storage

South Coast AQMD

This Rule requires the installation of Pressure Vacuum Relief Valve

San Joaquin Valley Unified APCD

BACT

Source: SJVUAPCD BACT Guideline 4.6.5

Aviation Fuel Dispensing Facility	
VOC	CARB Certified Phase I vapor recovery system

This BACT determination was established in 1996 before ARB clarified that there is no vapor recovery system that is certified by CARB for use with Avgas, The District took the clarification into consideration and included aviation fuel control requirements in Rule 4621 Section 5.2.

T-BACT

There are no T-BACT standards published in the clearinghouse for this category. However, since the primary VOCs controlled by the VOC BACT standard include HAPs, the VOC BACT standard will be considered the T-BACT standard.

RULE REQUIREMENTS:

Rule 4621 – Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants

This rule requires vapor recovery system that can recover 95 percent of displaced vapors and pressure vacuum relief valve.

Rule 4623 – Storage of Organic Liquid

This rule requires Group A Facilities (tank capacity 1,100 to 19,800 gallons):
Storing organic liquids 0.5 psia to <1.5 psia to use Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system
Storing organic liquids 1.5 psia to <11 psia to use Pressure-vacuum relief valve, or internal floating roof, or external floating roof
Storing organic liquids greater or equal 11 psia to use Pressure vessel or vapor recovery system

Rule 4624 – Transfer of Organic Liquid

This rule requires Class 2 Facilities (throughput 4,000 gallons or more but less than 20,000 gallons on any one day) vapor recovery system that can recover 95 percent of displaced vapors.

San Diego County APCD

BACT
There are no BACT standards published in the clearinghouse for this category.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:
Regulation 4, Rule 61.1 – Receiving and Storing Volatile Organic Compounds at Bulk Plants and Bulk Terminals

This Rule is not applicable to storage containers with a capacity less than 40,000 gallons.

Regulation 4, Rule 61.2 – Transfer of Organic Compounds into Mobile Transport Tanks

This rule requires bulk gasoline facilities with less than 6,000,000 gallons per year throughput to use submerged filling and have a vapor recovery with 90 percent control efficiency.

Regulation 4, Rule 61.3 – Transfer of Volatile Organic Compounds into Stationary Storage Tanks

This Rule is not applicable because it exempts bulk terminals in Section (b) (1).

Bay Area AQMD

BACT
There are no BACT standards published in the clearinghouse for this category.

T-BACT
There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:
Reg 8, Rule 5 – Storage of Organic Liquids

Submerged fill pipe and pressure vacuum relief valve.

Reg 8, Rule 6 – Organic Liquid Bulk Terminals and Bulk Plants

A person shall not transfer or allow the transfer of organic liquids from bulk plant loading equipment unless a vapor balance system or vapor loss control system is properly connected and used and submerged fill is used. Such transfer operations shall not emit into the atmosphere more than 44 grams of organic compounds per cubic meter (0.35 pounds per 1,000 gallons) of organic liquid loaded, this is equivalent to 90% control efficiency.

Reg 8, Rule 7 – Gasoline Dispensing Facilities
This Rule is applicable to gasoline dispensing facilities as defined in Section 8-7-209, therefore this Rule is not applicable to Avgas facilities.

The following control technologies have been identified and are ranked based on stringency:

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
VOC	A. Organic Liquid Loading loading/unloading 1. CARB certified system: 95% control efficiency for aboveground storage tanks or 98% control efficiency for underground storage tanks [SMAQMD] 2. Vapor recovery system : 95% control efficiency [SJVUAPCD] 3. Vapor Recovery system 90% control efficiency and P/V Valve [SCAQMD] 4. Submerged fill loading and 90% control efficiency vapor recovery system [BAAQMD, SDAPCD]
T-BACT	Same as achieved in practice BACT for VOC.

The following control technologies have been identified as the most stringent, achieved in practice control technologies:

BEST CONTROL TECHNOLOGIES ACHIEVED		
Pollutant	**Standard**	**Source**
VOC	CARB certified system: 95% control efficiency for aboveground storage tanks or 98% control efficiency for underground storage tanks (A)	SMAQMD,
T-BACT	Same as BACT for VOC.	

(A) Since CARB does not certify Avgas/Aviation Fuel vapor recovery equipment, the control efficiency of a system can be verified either by using an equivalent system that is certified by CARB for use with other fuels, or by testing the system using the test procedure used by CARB for certification.

B. TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (Rule 202, §205.1.b.):

Technologically Feasible Alternatives:
Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible by the Air Pollution Control Officer.

The table below shows the technologically feasible alternatives identified as capable of reducing emissions beyond the levels determined to be “Achieved in Practice” as per Rule 202, §205.1.a.

Pollutant	Technologically Feasible Alternative
VOC	No other technologically feasible option identified
NOx	No other technologically feasible option identified
Sox	No other technologically feasible option identified
PM10	No other technologically feasible option identified
PM2.5	No other technologically feasible option identified
CO	No other technologically feasible option identified

C. SELECTION OF BACT:

Based on the above analysis, BACT for control of VOC from Avgas/Aviation Fuel loading and/or unloading at airports:

1) The use of vapor recovery system with at least 95% control efficiency for aboveground storage tanks,
2) The use of vapor recovery system with at least 98% control efficiency for underground storage tanks

Control efficiency of a system can be verified either by using an equivalent system that is certified by CARB for use with other fuels, or by testing the system using the test procedure used by CARB for certification.

REVIEWED BY: _____ **DATE:** _____

APPROVED BY: _____ **DATE:** _____