



**FACILITY PERMIT TO OPERATE  
TESORO REFINING AND MARKETING CO**

**SECTION I: PLANS AND SCHEDULES**

This section lists all plans approved by AQMD for the purposes of meeting the requirements of applicable AQMD rules specified below. The operator shall comply with all conditions specified in the approval of these plans, with the following exceptions:

- a. The operator does not have to comply with NOx or SOx emission limits from rules identified in Table 1 or Table 2 of Rule 2001(j) which become effective after December 31, 1993.
- b. The operator does not have to comply with NOx or SOx emission limits from rules identified in Table 1 or Table 2 of Rule 2001(j) after the facility has received final certification of all monitoring and reporting requirements specified in Section F and Section G.

Documents pertaining to the plan applications listed below are available for public review at AQMD Headquarters. Any changes to plan applications will require permit modification in accordance with Title V permit revision procedures.

Application	Rule
<u>474117</u>	<u>1123</u>
474582	2002
476506	1173

NOTE: This section does not list compliance schedules pursuant to the requirements of Regulation XXX - Title V Permits; Rule 3004(a)(10)(C). For equipment subject to a variance, order for abatement, or alternative operating condition granted pursuant to Rule 518.2, equipment specific conditions are added to the equipment in Section D or H of the permit.



# South Coast Air Quality Management District

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**DRAFT**

February 12, 2010  
Facility ID No. 800436  
A/N 474117

Ms. Royann Winchester  
Tesoro Refining and Marketing Co., Los Angeles Refinery  
2101 E. Pacific Coast Highway  
Wilmington, CA 90744

Subject: Refinery Process Turnaround Plan Approval

Dear Ms. Winchester,

This letter is in regard to Tesoro Los Angeles Refinery's process turnaround plan submitted under Application No. 474117 to comply with SCAQMD Rule 1123—Refinery Process Turnarounds. The plan was originally submitted on September 24, 2007, but was replaced with an updated version dated December 18, 2009. The South Coast Air Quality Management District (SCAQMD) has evaluated your December 2009 plan for compliance with the applicable requirements of Rule 1123. The plan (copy attached) is approved subject to the following conditions:

1. Refinery process turnarounds shall be conducted in accordance with the attached plan received December 18, 2009, unless otherwise specified below.
2. During refinery process turnaround, the vapors released from the vessel shall not vent to the atmosphere at any time unless the vessel has been depressurized to below 5 psig, or is within 10 percent above the minimum gauge pressure at which the vapors can be collected, whichever is lower, and has met all the requirements in Condition No. 3 and 4 below.
3. To depressurize vessels pursuant to Condition No. 2, the vapors released from the vessel shall be recovered by (i) the vapor recovery system (VR system) or (ii) the flare gas recovery system (FGR system). The vapors released from the vessels may be directed to a flare provided that all flares have been operated in accordance with flaring minimization procedures pursuant to Rule 1118(c)(3) and (c)(4).
4. If inert gases are used for refinery process turnaround, the operator shall comply with all of the following requirements:

- (A) Prior to introducing inert gases into the vessel, the operator shall initially depressurize the vessel in accordance to Condition No. 2 and 3.
- (B) After introducing inert gases into the vessel, the vapors released from the vessel shall be recovered by the VR or FGR systems.
- (C) Condition No. 4B above shall not apply if the facility operator can demonstrate that recovering the vapors would result in: (i) equipment damage due to incompatibility with recovery system equipment or with refinery fuel gas systems, (ii) malfunction of pollution control equipment or safety devices, or (iii) violations of safety regulations. The vapors are permitted to be routed directly to the flare if condition (i), (ii), or (iii) is met and provided that all flares have been operated in accordance with flaring minimization procedures pursuant to Rule 1118(c)(3) and (c)(4).

5. The operator shall keep records of each refinery process unit turnaround, in a manner approved by the AQMD, for the following items:

- The date the unit was shut down.
- The time, date, and hydrocarbon concentration measured when the vapors from the vessel were first discharged into the atmosphere.
- The approximate amount of hydrocarbons emitted into the atmosphere.
- Records to demonstrate that condition No. 4C is applicable

The records shall be kept for at least five years and made available for District inspection upon request.

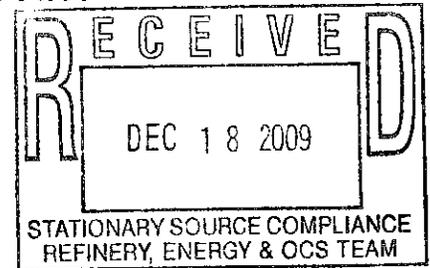
If you have any further questions, please contact Meredith Hankins by phone at (909) 396-2493 or by email at [mhankins@aqmd.gov](mailto:mhankins@aqmd.gov).

Sincerely,

Jay Chen  
Senior Manager  
Refinery and Waste Management  
Engineering and Compliance

Attachment: Tesoro Refining and Marketing Company, Los Angeles Refinery – Process Turnaround Plan

**TESORO REFINING AND MARKETING COMPANY  
LOS ANGELES REFINERY  
PROCESS TURNAROUND PLAN  
SCAQMD RULE 1123**



**GENERAL INFORMATION**

Name of Facility: Tesoro Refining and Marketing Company,  
Los Angeles Refinery

Address: 2101 E. Pacific Coast Highway  
Wilmington, CA 90744

Facility Contact: Jo-Anne Alvarez  
Environmental Engineer

**INTRODUCTION**

This plan outlines the procedures used to depressure and purge process vessels so that organic vapor emissions are minimized during process unit turnarounds. It provides for the maximum feasible control of emissions of displaced or educed organic gases without causing damage to equipment, malfunction of control equipment or safety devices, or violations of safety regulations. The plan will be implemented for all displacement or vacuum eduction operations associated with process turnarounds. Tesoro's process turnaround procedures are designed specifically to be compliant with Rule 1123 requirements.

**APPLICABLE PROCESS UNITS**

Tesoro's Rule 1123 Refinery Process Unit Turnaround Plan will be implemented for the following units at the refinery:

**PROCESS UNITS SUBJECT TO RULE 1123**

<b>South Area</b>	
Alkylation Unit	Fluid Catalytic Cracking Unit
Alkylation Feed Prep Unit	Merox Treating Unit
<b>Hydrogen Processing Area</b>	
Benzene Saturation Unit	Catalytic Reforming Unit No. 2
Catalytic Reforming Unit No. 3	Hydrocracker
Hydrogen Generation Unit No. 1	Hydrogen Generation Unit No. 2
Hydrotreater No. 1	Hydrotreater No. 2

Hydrotreater No. 3	Hydrotreater No. 4
Butane Isomerization Unit	
<b>Crude/Coker Area</b>	
Delayed Coking Unit	Gas Compression Plant
Crude Unit	

## **PROCESS TURNAROUND GAS PURGING PROCEDURE**

### **Procedure for Gas Displacement**

All liquids are routed to storage tanks. Tanks that receive volatile organic compounds comply with Rule 463 and Rule 1178.

Vessels are depressured to the refinery Flare Gas Recovery System (FGRS). The Flare Gas Recovery System is used to recover vent gases during unit shutdowns unless the vent gas volume exceeds the recovery capacity of the FGRS compressors or the composition of the vent gases are incompatible with the FGRS compressors or refinery fuel gas system, per AQMD Rule 1118. The vent gases recovered by the FGRS are treated in an amine absorber to remove H<sub>2</sub>S prior to being routed to the refinery fuel gas system. Both the East and West flares can be utilized during the turnaround process, should the necessity arise.

Vessels are depressured to the FGRS until the pressure in the vessel reaches flare line pressure, which is 5 psig or less. The pressure of the equipment is usually measured with pressure gauges. At the Fluid Catalytic Cracking Unit (FCCU), some vessels do not have connections to the flare system. Here, the vapors are routed to the flare knock out drum and the FGRS through temporary piping/hoses.

Steam, nitrogen or water can be introduced into the vessel to displace any remaining process vapors. These purge gases are typically routed to the flare system while liquids are collected in tanks. The system is opened to atmosphere only after it has been confirmed that the pressure is less than 5 psig and the hydrocarbon (LEL) concentration is less than 10%.

The following units are purged through gas displacement:

Alky, AFT, Merox, HGU1, HGU2, HTU4, DCU, Crude, GCP, FCCU, Bensat, Isomax

### **Procedure for Gas Education**

All liquids are routed to storage tanks. Tanks that receive volatile organic compounds comply with Rule 463 and Rule 1178.

Vessels are depressured to the refinery Flare Gas Recovery System (FGRS). The Flare Gas Recovery System is used to recover vent gases during unit shutdowns unless the vent gas volume exceeds the recovery capacity of the FGRS compressors or the composition of the vent gases are incompatible with the FGRS compressors or the refinery fuel gas system, per AQMD Rule 1118. The vent gases recovered by the FGRS are treated in an amine absorber to remove H<sub>2</sub>S prior to being routed to the refinery fuel gas system.

Vessels are depressured to the FGRS until the pressure in the vessel reaches flare line pressure, which is 5 psig or less. The pressure of the equipment is usually measured with pressure gauges.

Eduction is used only in reactor systems on the Hydrocracker, Hydrotreaters Nos. 1, 2, and 3, and Catalytic Reformers that contain catalyst that could be harmed by the use of a purge gas. After the vessels are depressured to flare line pressure, the eduction process is used to remove any residual organic vapors. The system is opened to atmosphere only after it has been confirmed that the pressure is less than 5 psig and the hydrocarbon (LEL) concentration is less than 10 %.

The following units are purged through eduction:  
HCU, HTU1, HTU2, HTU3, HTU4, CRU2, CRU3

### **PROCESS TURNAROUND CRITERIA WHICH DETERMINE WHEN ATMOSPHERIC VENTING BEGINS**

#### **Criteria which Determine when Atmospheric Venting Begins**

In the gas displacement procedure, the vessel is purged to the flare gas recovery system during the initial stages. Depending on the condition of the equipment at the time of shutdown, the duration of venting and purging will vary.

In both the gas displacement and eduction procedures, vessels are depressured to the Flare Gas Recovery System until the vessel pressure reaches flare line pressure. This pressure is below the 5 psig limit established for atmospheric venting in Rule 1123. The flare line pressure is known to be less than 5 psig. The flare line pressure is monitored and recorded electronically.

The fact that the vessel pressure has reached flare line pressure is determined by operator observation. Some vessels in a process unit are equipped with a pressure gauge that can be used to determine the pressure in the vessel. The flare line pressure can be determined if there is a pressure gauge on the unit flare knock out drum or a flare knock out drum that is nearby.