SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT *STATIONARY SOURCE COMPLIANCE DIVISION* APPLICATION PROCESSING AND CALCULATIONS	PAGES 23 + Attachments	PAGE 1
	APPL. NO. 470283	DATE 10/20/09
	PROCESSED BY Hannea Cox	CHECKED BY

PERMIT-TO- CONSTRUCT CONVERSION TO PERMIT-TO-OPERATE

APPLICANT'S NAME: TESORO REFINING & MARKETING CO)

MAILING ADDRESS: P.O. BOX 817
WILMINGTON, CA 90748

EQUIPMENT ADDRESS: 2101 E. PACIFIC COAST HWY
WILMINGTON, CA 90748
FACILITY ID: 800370

EQUIPMENT DESCRIPTION:

Additions to the equipment description are **bold** and **underlined.** Deletions are ~~struckthrough.~~

Section D of Facility Permit, ID # 800436
(The following equipment under Process 5, System 3, will be moved from Sections H to Section D of the facility permit.)

Description	ID No.	Connected To	RECLAIM Source Type	Emissions* And Requirements	Conditions
Process 5: CATALYTIC REFORMING					P13.1
SYSTEM 3: CATALYTIC REFORMING UNIT NO. 2					~~S11.2~~, S13.4, S15.2, S15.3, S31.1
REACTOR, NO. 1, V-735, HEIGHT: 14 FT; DIAMETER: 12 FT 6 IN A/N: ~~469959~~ **470283**	D1197			HAP: (10) [40CFR 63 Subpart UUU, #1, 4-20-2006]	
REACTOR, NO. 2, V-736, HEIGHT: 21 FT; DIAMETER: 12 FT 6 IN A/N: ~~469959~~ **470283**	D1198			HAP: (10) [40CFR 63 Subpart UUU, #1, 4-20-2006]	
REACTOR, NO. 3, V-737, HEIGHT: 20 FT; DIAMETER: 12 FT 6 IN A/N: ~~469959~~ **470283**	D1199			HAP: (10) [40CFR 63 Subpart UUU, #1, 4-20-2006]	

Description	ID No.	Connected To	RECLAIM Source Type	Emissions* And Requirements	Conditions
REACTOR, NO. 3B, V-738, HEIGHT: 14 FT; DIAMETER: 12 FT 6 IN A/N: ~~469959~~ **470283**	D1200			HAP: (10) [40CFR 63 Subpart UUU, #1, 4-20-2006]	
VESSEL, SEPARATOR, V-739, REACTOR PRODUCT, LENGTH: 24 FT; DIAMETER: 9 FT 6 IN A/N: ~~469959~~ **470283**	D197				
COLUMN, DEBUTANIZER, V-741, HEIGHT: 75 FT; DIAMETER: 7 FT A/N: ~~469959~~ **470283**	D198				
VESSEL, SEPARATOR, V-742, DEBUTANIZER PRODUCT, LENGTH: 20 FT; DIAMETER: 5 FT A/N: ~~469959~~ **470283**	D199				
COLUMN, SPLITTER, V-743, HEIGHT: 72 FT 6 IN; DIAMETER: 8 FT A/N: ~~469959~~ **470283**	D200				
VESSEL, RECEIVER, V-744, SPLITTER PRODUCT, LENGTH: 20 FT; DIAMETER: 5 FT A/N: ~~469959~~ **470283**	D201				
DRUM, HALIDE, V-746/747, 2 TOTAL, INJECTION CHEMICAL, HEIGHT: 5 FT; DIAMETER: 1 FT 6 IN A/N: ~~469959~~ **470283**	D203				
TANK, PERCHLOROETHYLENE, 300 GALS; WIDTH: 4 FT; HEIGHT: 3 FT 6 IN; LENGTH: 3 FT 6 IN A/N: ~~469959~~ **470283**	D1120				
DRUM, SURGE, V-2071, FEED PREP, HEAVY NAPHTHA, HEIGHT: 15 FT; DIAMETER: 6 FT A/N: ~~469959~~ **470283**	D1203				
VESSEL, V-2235, SULFUR GUARD BED, HEIGHT: 17 FT; DIAMETER: 6 FT **5 IN** A/N: 470283 ~~Permit to Construct Issued: 10/15/01~~	D1501				

Description	ID No.	Connected To	RECLAIM Source Type	Emissions* And Requirements	Conditions
TOWER, FEED PREP, V-732, HEIGHT: 87 FT; DIAMETER: 13 FT A/N: 470283 ~~Permit to Construct Issued: 10/15/01~~	D1204				
TOWER, SIDE SPLITTER, V-733, HEIGHT: 29 FT; DIAMETER: 6 FT A/N: ~~469959~~ **470283**	D1205				
POT, V-1992, SPLITTER REBOILER CONDENSATE, HEIGHT: 6 FT; DIAMETER: 3 FT A/N: ~~469959~~ **470283**	D1206				
DRUM, V-2005, SPLITTER WATER DRAW, HEIGHT: 5 FT; DIAMETER: 1 FT 6 IN A/N: ~~469959~~ **470283**	D1207				
COMPRESSOR, C-73, RECYCLE GAS, CENTRIFUGAL, (VH-504) A/N: 470283 ~~Permit to Construct Issued: 10/15/01~~	D209				
ACCUMULATOR, V-734, FEED PREP OVERHEAD, HEIGHT: 37 FT; DIAMETER: 7 FT A/N:~~469959~~ **470283**	D210				
FUGITIVE EMISSIONS, MISCELLANEOUS A/N: ~~469959~~ **470283**	D1451			HAP: (10) [40CFR 63 Subpart CC, #5A,6-23-2003]	H23.5

CONDITIONS

PROCESS CONDITIONS

P13.1 All devices under this process are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Benzene	40CFR61, SUBPART	FF

[40CFR 61, SUBPART FF, 12-4-2003]

SYSTEM CONDITIONS

~~S11.2 The operator shall comply with all applicable mitigation measures stipulated in the "Statement of Findings, Statement of Overriding Consideration, and Mitigation Monitoring Plan" document which is part of the AQMD Certified Final Environmental Impact Report dated 15 Oct 2001 for this facility.~~

~~This condition shall only apply to equipment listed in Section H of this facility permit.~~

~~[CA [RC CEQA. 11-23-1970]~~

S13.4 All devices under this system are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1123

[RULE 1123, 12-7-1990]

S15.2 The vent gases from all affected devices of this process/system shall be vented as follows:

All emergency vent gases shall be directed to the refinery flares (Process 21, System 1) or flare gas recovery system (Process 21, System 4) which may include DCU Blowdown Compressor C-137 (device D68) except Devices IDs D898, D20, D910, D1269, D1283, D1284, D1288, D1292, D219, D226, D1212, D275, D1256, D375, D928, D1267 & D916 that vent to the atmosphere.

This process/system shall not be operated unless the blowdown flare system is in full use and has a valid permit to receive vent gases from this system.

[RULE 1303(a)(1)- BACT, 5-10-1996; RULE 1303(b)(2)- Offset, 5-10-1996]

S15.3 The vent gases from all affected devices of this process/system shall be vented as follows:

All vent gases under normal operating conditions shall be directed to a blowdown vapor recovery system (Process 21, System 3) consisting of compressors, D641, D642, D643, and/or D644, which can be operated independently to maintain a system vacuum that efficiently collects all vented gases or the flare gas recovery system (Process 21, System 4).

This process/system shall not be operated unless the vapor recovery system (process 21, system 3) is in full use and has a valid permit to receive vent gases from this system.

[RULE 1303(a)(1)- BACT, 5-10-1996; RULE 1303(b)(2)- Offset, 5-10-1996]

S31.1 The following BACT requirements shall apply to VOC service fugitive components associated with the devices that are covered by application number(s) 347559, 347560, 347564, 336048, 366083, 376616, 376622, 376623, 376624, 376625, 376626, 376627, 376628, 381228, 457927, 501287, & 501288:

All open-ended valves shall be equipped with cap, blind flange, plug, or a second valve.

All pressure relief valves shall be connected to closed vent system or equipped with rupture disc.

All process drains shall be equipped with water seal, or a closed vent system and control device complying with the requirements of 40CFR 60 Subpart QQQ.

All sampling connections shall be closed-purge, closed-loop, or closed-vent system.

All components are subject to District Rule 1173 and 40CFR 60 Subpart GGG.

All new components in VOC service as defined in Rule 1173, except valves and flanges, shall be inspected quarterly using EPA reference Method 21. All new valves and flanges in VOC service except those specifically exempted by Rule 1173 shall be inspected monthly using EPA Method 21.

All new components in VOC service, a leak greater than 500 ppm but less than 1,000 ppm measured as methane above background as measured using EPA Method 21, shall be repaired within 14 days of detention.

All new valves in VOC service shall be of leakless type, except those specifically exempted by Rule 1173 or approved by the District in the following applications: heavy liquid service, control valves, instrument piping/tubing, applications requiring torsional valve stem motion, applications where failures could pose safety hazards (e.g. drain valves with valve stems in horizontal position), retrofits with space limitations, and valves not commercially available.

If 98.0 percent or greater of the new valve and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppm for two consecutive months, then the operator may revert to a quarterly inspection program with approval of the executive officer. This condition does not apply to leakless valves.

The operator shall keep records of the monthly inspection (and quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District.

The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The operator shall also submit a complete, as built, piping and instrumentation diagram(s) and copies of requisition data sheets for all non-leakless type valves with a listing of tag numbers and reasons why leakless valves are not used.

For the purpose of this condition, leakless valve shall be defined as any valve equipped with sealed bellow or equivalent as approved in writing by the District prior to installation.

Components shall be defined as any valve, fitting, pump, compressor, pressure relief device, diaphragm, hatch, sight-glass, and meter, which are not exempt by Rule 1173.

[Rule 1303(a)(1)- BACT, 5-10-1996]

DEVICE CONDITIONS

H23.5 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1173

[RULE 1173, 5-13-1994; RULE 1173, 2-6-2009]

[Devices subject to this condition: D1354, D1355, D1357, D1359, D1361, D1362, D1363, D1366, D1367, D1384, D1399, D1415, D1416, D1419, D1425, D1443, D1444, D1451, D1454, D1459, D1460, D1461, D1465, D1466, D1467, D1469, D1470, D1471, D1472, D1473, D1477, D1553, D1556, D1557, D1561]

End of Conditions

BACKGROUND:

In response to the federal Clean Air Act (CAA) requirements to reduce CO emissions from automobile fuel combustion, California Air Resources Board imposed several standards in phases that stipulate the specifications for gasoline. The latest standard is called California Air Resources Board Reformulated Gasoline (RFG) Phase 3. The requirements of this phase were adopted on December 9, 1999. These requirements set the following standards:

- Prohibited the use of methyl tertiary butyl ether (MTBE) by 12-31-2002
- Established more stringent standards for sulfur and benzene
- Relaxing two standards for distillation temperatures (T50 and T90)

In order to meet the above requirements set forth, Tesoro (formerly known as Equilon) upgraded their production process and submitted application number 376624. This upgrade included the Catalytic Reforming Unit, No.2 (CRU-2). The modifications to the CRU-2 were proposed to process the feeds from the Feed Prep Tower and Hydrocracker Unit (HCU) fractionator. The modification also includes a new reactor that uses a nickel oxide catalyst to remove additional quantities of sulfur from CRU-2 feed and a retray of the Debutanizer tower.

The original Permit to Construct was issued on 10-15-01. Since the issuance of the original Permit to Construct, the refinery's ownership has changed. Application number 376624, initially submitted by Equilon, will be canceled since the Permit to Construct has been reissued under the Change of Operator application number 470283. The above modifications described for application no. 376624 were made in the Facility Permit under Change of Operator application number 470283.

PERMIT HISTORY:

The District received on 11-1-2000 one Modification Permit to Construct application for Catalytic Reforming Unit No. 2. Table 1 provides further details for this application.

Table 1: Application List for Permit History

AP Number	A/N Type	A/N Status	Equipment ID	Previous AP Number	Previous AP Status	Description
470283	40	26	D150, D1204 & D209	376624	Active	Catalytic Reforming Unit No. 2 and Change of Ownership from Equilon to Tesoro
376624	50	52	D150, D1204 & D209	347193	Active	Catalytic Reforming Unit No. 2
347193	40	31	CRU No. 2	310355	Active	Change of Ownership From Texaco to Equilon
310335	50	31	D1114, D1115, D1116, D1117	136728	Inactive	Replaced two pumps and connected 4 pumps to flare in CRU No. 2
136728	40	31	CRU No.2	C40396	Inactive	Change of Ownership
C40936	50	31	CRU. No. 2	A06681	Inactive	Replaced 8 horizontal shell-and-tube heat exchangers with 2 custom designed vertical heat exchangers (E-1266 and E-1267)

AP Number	A/N Type	A/N Status	Equipment ID	Previous AP Number	Previous AP Status	Description
A06681	0	31	CRU No. 2	None	Inactive	Initial PC/PO for the CRU No.2

COMPLIANCE RECORD REVIEW:

In the District's Compliance Tracking System,. NOVs and NCs from both Equilon and Tesoro were reviewed.

NOVs/ NCs

There were no NOVs/NCs issued against the CRU-2 in the District compliance/enforcement database. However, the facility was issued two Notices to Comply (NCs) and ten Notice of Violations (NOVs). All of the notices have been brought back into compliance or have been closed. Please refer to Attachment I for a print out of NC and NOV results.

Complaints

There were no complaints logged involving the Catalytic Reforming Unit No.2 or its components in the District compliance/ enforcement database.

Rule 301 Fee Evaluation:

Equilon submitted the following fee:

A/N	Equipment	Type	Fee Schedule	Fee Required, $	Fees Paid, $	R301 Date
376624	Catalytic Reforming Unit No. 2	50	E	$3,660.26	$3,660.26	FY 00-01
470283	Catalytic Reforming Unit No. 2	40	E	$290.32	$290.32	FY 06-07

PROCESS DESCRIPTION:

According to Tesoro, the CRU-2 feed preparation receives hydrotreated naphtha feed from HTU-1 and HTU-2. The full range naphtha is separated into light naphtha, medium naphtha, heavy naphtha and jet fractions in a distillation column that utilizes a fired heater for reboiling duty. The medium naphtha consisting of C5's and C6's is sent to the reaction section of CRU-2, while light and heavy naphthas are sent to other systems.

The reactor section of the CRU-2 is a series of reactors that converts the medium naphtha into high octane reformates. A new sulfur guard bed (Device D1501) has been added upstream of the reactor beds in order to protect the catalyst from sulfur poisoning during upset conditions. A feed tower (Device D1204) and a recycle gas compressor (Device D209) were also modified to support feed composition changes and an increase in feed throughput. A PRV was connected to the flare for pressure relief. As built Piping and Instrument Diagrams were submitted by Equilon/Tesoro. See Attachment III for As Built P&ID's.

Emissions Calculations:

VOC emissions estimated and final fugitive emissions counts from the above modifications are summarized below in Table 3. These emissions are calculated from fugitive components that consist of valves, flanges, pumps and compressors. A detailed analysis of the VOC emissions from the aforementioned modifications to this process can be found in the PC evaluation, Appendix B, Section 2. Fugitive emission for the PO can be found in Attachment IV of this evaluation. Tesoro also submitted a detailed pre and post project fugitive emissions calculations, a list of all non-bellow seal valves with clarifications why bellow seals were not used. This information can be found in Attachment II.

Table 3- Fugitive Emissions

		Pre-Modification Fugitive Emissions		**As-Built Fugitive Emissions**		**Total Emissions Increase**	
AN	**Equipment**	**VOC (lb/yr)**	**VOC (lb/day)**	**VOC (lb/yr)**	**VOC (lb/day)**	**VOC (lb/yr)**	**VOC (lb/day)**
470283	CRU-No.2	43,755	120	44.951	123.28	1,196	3.28

The CRU-2 has an increase of 3.28 lbs/day of VOC fugitive emissions from the pre-project phase calculations to the as-built components. Table 3 from the previous page summarizes the emissions increase. This increase is due to a net increase in the number of fugitive components added. Table 4 below lists the number of components that were added and/or removed. Pursuant to Rule 1304(c)(4), the above emission increase is exempt from offsets since this project was required in order to comply with CARB RFG Phase 3 specifications. (See Regulation XIII below for further details).

Table 4- Number of Fugitive Components Added or Removed

Source	Pre Modification No. of Sources	Post Modification No. of Sources	No. of Source Added/Removed
Valves			
Sealed Bellows- Gas/Vapor & Light Liquid	0	233	233
Live Loaded with dual -G/V	595	610	15
Others -Light Liquid (LL)	1086	1129	43
Heavy Liquid (HL)	18	22	4
PRV (G/LL/HL)	29	28	-1
Pumps LL	16	16	
Fittings (flanges, etc)	4291	4528	236
Compressor	2	1	-1
Others- (G/L/H) (assumed connectors)	168	289	121

In the PC, the estimated emissions increase was calculated to be 103 lb/yr (0.28 lb/day). Therefore, overall emissions increase for this PC to PO conversion is the difference between PC estimated emissions and the PO, As-built emissions.

PC Emissions (lb/day)	PO Emissions (lb/day)	Overall Emissions Increase PC to PO (lb/day)
0.28	3.28	3.00

For NSR,123 lbs/yr will be entered into the NSR database for this application, resulting in and overall emissions increase of 3 lb/day.

RULE EVALUATION:

Part I AQMD REGULATIONS

Rule 212 – Standards for Approving Permits, Amended Nov. 14, 1997

The overall emissions increase from the RFG Phase 3 project for all affected units in the refinery was calculated to be 262 lbs/day of VOC (see PC evaluation). Since this increase exceeded the daily emissions threshold of 30 lbs VOC/day specified in 212(g), a 30-day public notice was required. The public notice was mailed to neighboring addresses within a quarter mile of the project as stated in 212(d) and other notification requirements stipulated in 212(g). For proof of public notice mailing within a quarter of a mile of the project, please refer to Attachment IV of A/N 376625. See Attachment V of this evaluation for a copy of the public notice. There were no public comments on file. Therefore, compliance with this rule has been demonstrated.

Rule 401 – Visible Emissions, Amended Nov. 9, 2001

All new and/or modified permit units involved in the RFG Phase 3 Project have been installed with BACT or are completely enclosed systems. Visible emissions are not expected under normal operating conditions. Continued compliance is expected.

Rule 402 – Nuisance, Adopted May 7, 1976

All new and/or modified permit units involved in the RFG Phase 3 Project have been installed with BACT or are completely enclosed systems. Odors or nuisance complaints are not expected under normal operating conditions. Continued compliance with this rule is expected.

Rule 466 – Pumps and Compressors, Amended October 7, 1983

Pursuant to Rule 1173(I)(3), the provisions of this rule do not apply since Tesoro is subject to Rule 1173.

Rule 466.1– Valves and Flanges, Amended March 16, 1984

Pursuant to Rule 1173(I)(3), the provisions of this rule do not apply since Tesoro is subject to Rule 1173.

Rule 467- Pressure Relief Valves, Amended March 5, 1982

Pursuant to Rule 1173(I)(3), the provisions of this rule do not apply since Tesoro is subject to Rule 1173.

Rule 1173 – Fugitive Emissions of Volatile Organic Compounds, Amended Dec. 6, 2002

This rule applies to fugitive VOC components at refineries, chemical plants, oil and gas production fields, natural gas process plants and pipeline transfer stations. It specifies leak control, identification, operator inspection, maintenance, and recordkeeping requirements for valves, pumps, compressors, pressure relief valves, and other components from which fugitive VOC emissions may emanate.

The modification to CRU-2 will introduce new fugitive components that are subject to Rule 1173. The new fugitive components will be subject to leak control, identification, operator inspection, maintenance & reporting requirements for fugitive components. The applicant maintains a Rule 1173 inspection and maintenance (I&M) program and these new components are included in the I&M Program. Therefore, continued compliance is expected.

REGULATION XIII – New Source Review

The new construction proposed in this project results in an emission increase of 3.00 lb/day. Therefore, the requirements of this regulation apply.

Rule 1303 – REQUIREMENTS, Amended Dec. 6, 2002

1303(a): BACT.

BACT for fugitive components: The total fugitive emission sources consisting of valves fittings, pumps and compressors were estimated in the PC evaluation for the CRU-2 to be 6,206 components. Leakless valves were required for each valve in VOC service, regardless of size, with certain exemptions outlined in the AQMD memo dated April 2, 1999 from Jay Chen. This memo is included in Attachment VI for reference. A list of non-leakless type valves and reasons why theses valves are exempt was provided by Tesoro on June 18, 2008. Other components such as fittings, pumps, process drains comply with this rule and are included in AQMD approved Inspection and Maintenance Plan. Compliance is expected.

Permit condition **S31.1** assures compliance with this rule.

1303(b): Emission Increases.

As calculated pursuant to Rule 1306(b), there is a net increase in VOC emissions in the amount of 3.00 lb/day.

1303(b)(1): MODELING.

There was no increase in NO_x, SO_x, CO and PM_{10} emissions; therefore, modeling is not required. Although there is an increase in VOC, modeling for VOC is not required. Compliance is expected.

1303(b)(2)(A): OFFSET.
Pursuant to Rule 1304(c)(4)-Regulatory Compliance- the modification of CRU-2 is exempt form offsets since this project was required in order to comply with CARB RFG Phase 3 specifications.

1303(b)(2)(B): Short Term Credits. Not applicable

1303(b)(2)(C): Specific VOC ERCs. Not applicable

1303(b)(3): Sensitivity Zone Requirements. Not applicable

1303(b)(4): Facility Compliance.

Tesoro complies with all District rules.

1303(b)(5): Major Polluting Facilities

A new major polluting facility or major modification at an existing major polluting facility shall comply with the requirements of this paragraph. This refinery is not a new major polluting facility, but the project is a major modification at an existing major polluting facility that will cause an increase of one pound per day or more, of the facility's potential to emit NOX or VOCs. Therefore, the requirements in this subparagraph apply.

(A) The requirement of this subpart was met through compliance with CEQA. See 1303 (b)(5)(D). This application is just part of a cumulative project. A CEQA analysis was required for this project because of the potential environmental impacts.

(B) The facility provided a Statewide Compliance Letter prior to the issuance of the Permit to Construct.

(C) This project does not have a net emission increase of 15 tons/yr or PM_{10} or 40 tons/yr of NO_x. Therefore, this requirement does not apply.

(D) The impacts of the proposed cumulative project has a potential significant impact on the environment, therefore, a CEQA analysis was submitted.

(i) This project is not exempt from CEQA.

(ii) The proposed project does not qualify for a negative declaration.

(iii) The proposed project has been analyzed by an EIR. The final certified EIR was approved by SCAQMD on October 15, 2001.

REGULATION XIV – Toxics and Other Non-Criteria Pollutants

Rule 1401 – New Source Review of Toxic Air Contaminants, Amended May 2, 2003

This rule specifies limits for maximum individual cancer risk (MICR), cancer burden, and non-cancer acute and chronic hazard index (HI) for new permit units, relocations, or modifications to existing permits that emit toxic air contaminants (TAC).

Rule 1401 requirement levels are as follows:

MICR, without T-BACT:	$\leq$ 1 in 1 million (1.0×10^{-6})
MICR, with T-BACT:	$\leq$ 10 in 1 million (1.0×10^{-5})
Cancer Burden:	$\leq$ 0.5
Maximum Chronic Hazard Index:	$\leq$ 1.0
Maximum Acute Hazard Index:	$\leq$ 1.0

Initially, a health risk assessment was performed in the PC. The PC calculations proved that the increase in toxic air contaminants were below the Rule 1401 requirement levels listed above. PC calculations can be found in Appendix D, Section #2 of the PC evaluation.

Based on the final post modification fugitive emissions count provided by Equilon, an increase of 3.00 lb/day in ROG emissions were calculated for CRU-2 (see Table 3). A new health risk assessment was conducted to ensure the MICR remained below the Rule 1401 threshold. The revised toxic emissions were calculated using the TAC concentration from Equilon's speciation data used in the 1995 Air Toxic Inventory Report and the respective (wt %) increase in TAC from the increase in ROG emissions.

Only benzene emissions from the CRU-2 are calculated. There are no screening level values for VOC vapors or toluene. MICR parameters utilized Version 6.0, Attachment G of the Risk Assessment Procedure since this application was deemed complete December 30, 2000. Values for the parameters used to calculate the MICR are listed on the following page.

MICR calculation parameters:

Screening level: 100 meters

Volume source

Operates 24 hrs/day

Location: Long Beach

Surface Area: 8800 m^2 (94,722 ft^2)

Resident Receptor: 4,200 ft

Fugitive Emissions: 3.00 lb/day (1,196 lb/yr) 0.60 tpy

Fraction of TACs in product:

Benzene : 0.20

Using the above parameters the MICR is calculated. See Table 5 below. The Post Construction MICR is below the one part per million threshold despite the emission increase.

Table 5- Post Construction MICR

Chemical	Q (ton/yr)	X/Q (ug/m3/tpy)	MET	U	MP	LEA	MICR
VOC vapors	0.60	0.12	0.99	-	1	1	n/a
Benzene	0.12	0.12	0.99	2.90E-05	1	1	3.83E-07

In the PC, the MICR was calculated using the MET factor of 0.58. The correct factor is 0.99 for a volume source that operates 24 hours a day, 7 days per week. (Refer to SCAQMD Permit Application Package "L" Tables, Table 5B). Table 6 below displays the MICR calculation using the correct MET factor. The MICR is still well below one part per million threshold set forth in Rule 1401.

Table 6- Revised Pre Construction MICR

Chemical	Q (ton/yr)	X/Q (ug/m3/tpy)	MET	U	MP	LEA	MICR
VOC vapors	0.051	0.12	0.99	-	1	1	n/a
Benzene	0.01	0.12	0.99	2.90E-05	1	1	3.48E-08

Continued compliance with rule is expected.

REGULATION XVII- PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

As of July 25, 2007, the USEPA signed a new Limited PSD Delegation agreement with SCAQMD. SCAQMD now has the PSD responsibility for all new PSD sources and all modifications to existing PSD sources where the applicant is requesting to use SCAQMD's existing Regulation XVII to determine PSD applicability for a modification (and not recent calculation methodology adopted by EPA as part of the NSR reform).

A PSD is not applicable for this project since the District is not in attainment for Ozone of which VOC is a reactant and a pollutant from this modification.

REGULATION XX – RECLAIM May 6, 2005

Tesoro is a RECLAIM facility. Therefore, it is subject to REG XX. Since this permit action will not result in an emission increase in RECLAIM pollutants, there are no RECLAIM requirements applicable to this modification.

REGULATION XXX – TITLE V PERMITS

Rule 3001 – Applicability

3001(a): Having emissions greater than that specified in the table in the rule, Tesoro is considered a Phase One Title V facility. On November 23, 2009, Tesoro's initial Title V permit was issued effective.

Rule 3000 – General

3000(b)(6) This project is considered a "De Minimis Significant Permit Revision" because the installation of this equipment results in an emission increase of 3.00 lbs/day. However, the modification of this permit unit does not trigger any new or additional requirements to NSPS or NESHAP. This revision is a permit to operate for an existing permit unit previously subject to NSPS and NESHAP. This permit unit also meets the requirements set forth in 3000(b)(12)(A)(i)- 3000(b)(12)(A)(ix) of this rule for "Minor Permit Revision".

In addition, the cumulative emission increase is not greater than the following thresholds:

Air Contaminant	Daily Maximum in Pounds Per Day
HAP	30
VOC	30
NO_x	40
PM_{10}	30
SO_x	60
CO	220

Facility *De Minimis* Emissions Accumulation
(As of Initial Title V Issuance, November 23, 2009)

Air Contaminant	Existing	Additional due to this project	Total
VOC	0 lb/day	3.00 lb/day	3.00 lb day

Rule 3003- EPA Review

3003(j): This revision requires a 45-Day EPA review, but not public participation. SCAQMD will submit this application to the EPA Administrator

Rule 3005-Permit Revisions

3005(e): The modification of this permit unit results in an emissions increase of 3.00 lb/day of VOC. According to the permit revisions described in paragraph (b)(6) of Rule 3000, this permit revision is a De Minimis Significant Permit Revision. As a result, this application will be submitted to EPA for review.

Therefore, the requirements of this regulation have been met and Tesoro is expected to continue to comply.

PART II STATE REGULATIONS

California Environmental Quality Act (CEQA)

A CEQA analysis was performed for the RFG Phase 3 Project since the project could pose a potential impact to the environment. Tesoro went through the various stages of the CEQA requirements including Initial Study, Environmental Impact Report, public review, and comment periods. Tesoro complied with all of the applicable mitigation measures stipulated in the Statement of Findings, Statement of Overriding Consideration, and Mitigation Monitoring Plain in the EIR report (certified by AQMD on 10-15-2001). The emissions increase from final fugitive emissions is not anticipated to have any adverse impact to the PC CEQA analysis because the increase in toxic risk is below the threshold. Compliance is expected

PART III FEDERAL REGULATIONS

40CFR Part 60 - NEW SOURCE PERFORMANCE STANDARDS (NSPS)

The Catalytic Reforming Unit #2 is already an "affected facility" and is modified as defined in NSPS. According to 40CFR Part 60 Subpart A- General Provisions: §60.2 Definitions, *modification* is defined as "any physical change in, or change in the method of operation of, an existing facility which increases the amour of any pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted." Therefore, NSPS' standards apply.

40CFR Part 60 Subpart GGG-*Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, of Modification Commenced After January 4, 1983, and on or Before November 7, 2006*

§60.590 Applicability and designation of affected facility. In accordance with §60.590(b), any affected facility (petroleum refinery) that commences construction or modification after January 4, 1983 and on or before November 7, 2006 is subject to the requirements of this subpart.

Since the Catalytic Reforming Unit has been subject to Subpart GGG, it will continue to be subject to this regulation.

40CFR Part 60 Subpart GGG-*Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, of Modification Commenced After January 4, 1983, and on or Before November 7, 2006 Continued…..*

§60.592 Standards.

(a) The facility shall comply with the requirements of §§60.482-1 to §§60.482-10 as soon as practicable, but no later than 180 days after initial startup. §§60.482-1 to §§60.482-10 refers to Subpart VV- Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry and sets standards for the following:

- §60.482-1 Standards: General
- §60.482-2 Standards: Pumps in light liquid service
- §60.482-3 Standards: Compressors
- §60.482-4 Standards: Pressure relief devices in gas/vapor service
- §60.482-5 Standards: Sampling connection systems
- §60.482-6 Standards: Open-ended valves or lines
- §60.482-7 Standards: Valves in gas/vapor service and in light liquid service
- §60.482-8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service or connectors.
- §60.482-9 Standards: Delay of repair
- §60.482-10 Standards: Closed vent systems and control devices

All new fugitive components in VOC service are expected to meet the equipment standards and monitoring requirements in §§60.482-1 to §§60.482-10. In general, the equipment leak inspection and monitoring requirements of this regulation have been incorporated in Tesoro's Inspection and Monitoring Program for fugitive emissions. All new piping components associated with the equipment will be monitored on a monthly and quarterly basis by refinery personnel. It is expected that Tesoro will continue to comply with the inspection, maintenance, and recordkeeping requirements of this rule.

(b) The facility may elect to comply with the requirements of §60.483- to §§60.483-2.

- §§60.483-1 Alternative standards for valves—allowable percentage of valves leaking.

40CFR Part 60 Subpart GGG-*Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, of Modification Commenced After January 4, 1983, and on or Before November 7, 2006 Continued…..*

- §§60.483-2 Alternative standards for vales – skip period leak detection and repair.

Therefore, Tesoro may choose between two alternative monitoring plans for valves: allowable percentage of valves leaking or skip period leak detection and repair. Tesoro shall notify the EPA before implementing one of these alternative work practices.

(c) The facility may apply to EPA for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, Tesoro shall comply with the requirements of §60.484 (Equivalence of means of emissions limitation).

(d) The facility shall comply with the provisions of §60.485 (Test methods and procedures) except as provided in §60.593 (Exemptions found in Subpart GGG). Tesoro shall conduct all monitoring using EPA Method 21 as stated in §60.485(b)(1).

(e) The facility is required to comply with the provisions of §60.486 (Recordkeeping requirements) and §60.487 (Reporting requirements). The refinery will be required to submit semiannual reports to the EPA beginning six months from initial startup with the information identified in §60.487(b) for the initial report and §60.487(c) for the subsequent semiannual reports.

Permit condition **H23.5** has been previously tagged to the Fugitive Emissions device D1451 noting that all affected fugitive components are subject to 40CFR60, Subpart GGG. The facility is expected to continue to comply with this Subpart.

40CFR Part 60 Subpart GGGa- ***Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006***

GGGa does not apply to these modifications since the modifications were completed before November 7, 2006.

40CFR 63-NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)

National Emissions Standards for Hazardous Air Pollutants This part contains national emission standards for hazardous air pollutants (NESHAP) established pursuant to section 112 of the Act as amended November 15, 1990. These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants listed in this part pursuant to section 112(b) of the Clean Air Act. *Applicability*: Equilon/Tesoro is subject to this part since it is a stationary source that emits hazardous air pollutant listed in or pursuant to section 112(b) of the Clean Air Act.

40CFR Part 63 Subpart UUU- ***National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units***

Applicability: Tesoro meets both requirements of §63.1561 (a)(1) and (a)(2) of this subpart since Tesoro is considered a petroleum refiner that is located at major source for HAP and Equilon emits or has the potential to emit 10 tons per year of any single HAP and 25 tons per year of any combination of HAPs.

§63.1562 specify which devices are subject to this subpart. According to this section, carbon absorber V-2277 (device id D1525) is subject to this subpart. Therefore, device id D1525 has been previously tagged with 40 CFR 63 Subpart UUU and Tesoro is expected to continue to comply with the requirements set forth in this subpart.

RECOMMENDATION:

It is recommended that Permit to Operate be issued with the conditions listed in the Conditions Section of this evaluation. It is also recommended that the above devices be moved from Section H to Section D since Tesoro is currently operating in compliance with District, State, and Federal Rules and Regulations.

Attachments

List of Attachments:

I. South Coast AQMD NOV and NC Report

II. Fugitive Component Counts and Calculations from Tesoro & BSV Exemption Codes

III. As Build P& ID

IV. Permit to Operate (PO) Fugitive Emissions Calculations

V. Copy of Public Notice Completed Prior to Issuing the Permit to Construct

VI. Jay Chen April 2, 1999 BACT/LAER for Valves as VOC Fugitive Sources Memo