



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

STATIONARY SOURCE COMPLIANCE DIVISION

APPLICATION PROCESSING AND CALCULATIONS

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APPL. NO.

499905

DATE

02/03/10rev

PROCESSED BY

E.R.Ruivivar

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BY:

**PERMIT TO CONSTRUCT AND OPERATE (P/C-P/O)
-Modification-**

COMPANY NAME: Chevron Products Company

MAILING ADDRESS: 324 W. El Segundo Blvd.
El Segundo, CA 90245

EQUIPMENT LOCATION: 324 W. El Segundo Blvd.
El Segundo, CA 90245

EQUIPMENT DESCRIPTION:

APPLICATION NO. 499905

Additions to the equipment description are noted in bold & underlines. Deletions are noted in strikeouts

FACILITY PERMIT SECTION D			
PROCESS 16		SYSTEM 10	
STORAGE TANKS		DOMED EXTERNAL FLOATING ROOF TANKS	
DESCRIPTION	DEVICE ID NO.	Emissions and Requirements	CONDITIONS
STORAGE TANK, DOMED EXTERNAL FLOATING ROOF, NO. 871, WELDED SHELL, 45,600 <u>11,462</u> BBL; DIAMETER: 50 FT; HEIGHT: 47 FT 41 IN , WITH TWO MIXERS, WITH DOME COVER, GEODESIC FLOATING ROOF, DOUBLE DECK PRIMARY SEAL, CATEGORY A, METALLIC SHOE SECONDARY SEAL, CATEGORY B OR BETTER, RIM MOUNTED GUIDEPOLE, SLOTTED, WITH GASKETED SLIDING COVER, POLE SLEEVE AND POLE WIPER A/N: 478032 <u>499905</u>	D1406	BENZENE: (10) [40 CFR 61 Subpart FF, 02-12-2003]; HAP: (10) [40CFR 63 Subpart CC, #3A, 5-25-2001]	Process: P13.1 System: S13.9, S31.15 Device: C6.10, H23.1, K67.51, & K171.11

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- CONDITIONS -

Additions to the permit condition are noted in **bold & underlines**. Revision (device added to existing condition) in **bold** only. Deletions are noted in strikeouts.

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]

[Processes subject to this condition : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16]

SYSTEM CONDITIONS

S13.9

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

Contaminant	Rule	Rule/Subpart
VOC	District Rule	463
VOC	District Rule	1149
VOC	District Rule	1178

For Rule 463 applicability, only subdivision (d) in the March 11, 1994 amendment, or equivalent requirements in the future amendments, shall apply to domed external floating roof tanks. This does not preclude any requirements specified in Rule 1178.

[RULE 1149, 7-14-1995; RULE 1178, 12-21-2001; RULE 463, 3-11-1994; RULE 463, 5-6-2005]

[Systems subject to this condition : Process 16, System 10]

S31.15

The following BACT requirements shall apply to VOC service fugitive components associated with the devices that are covered by application number(s) 378811, 380595, 380596, 380597, 380611, 385371, 385372, 385373, and 385374:

The operator shall provide to the District, no later than 60 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The valves and flanges shall be categorized by size and service. The operator shall submit a listing of all new non-bellows seal valves which shall be categorized by tag no., size, type, operating temperature, operating



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pressure, body material, application, and reasons why bellows seal valves were not used.

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

All new valves and major components in VOC service as defined by Rule 1173, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in R1173, shall be distinctly identified from other components through their tag numbers (e.g., numbers ending in the letter "N"), and shall be noted in the records.

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.

If 98.0 percent or greater of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv for two consecutive months, then the operator may change to a quarterly inspection program with the approval of the District.

The operator shall revert from quarterly to monthly inspection program if less than 98.0 percent of the new(non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv.

All new components in VOC service with a leak greater than 500 ppmv but less than 1,000 ppmv, as methane, measured above background using EPA Method 21 shall be repaired within 14 days of detection. Components shall be defined as any valve, fitting, pump, compressor, pressure relief valve, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173.

The operator shall keep records of the monthly inspection (quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District. Records shall be kept and maintained for at least two years, and shall be made available to the Executive Officer or his authorized representative upon request.

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

[Systems subject to this condition : Process 1, System 18; Process 3, System 5; Process 4, System 3 , 4; Process 7, System 7; Process 8, System 8; Process 14, System 28; Process 16, System 8, 10]



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DEVICE CONDITIONS

C. Throughput or Operating Parameter Limits

C6.10 (existing)

The operator shall use this equipment in such a manner that the hydrocarbon concentration being monitored, as indicated below, does not exceed 30 percent of the Lower Explosive Limit.

The operator shall use an explosimeter or equivalent device to monitor the hydrocarbon concentration in the vapor space between the floating roof and geodesic dome twice a year at 4 to 8 months interval.

[RULE 1178, 12-21-2001]

[Devices subject to this condition : D1343, D1367, D1382, D1388, D1389, D1406, D1435, D1439, D1460, D1465, D1473]

H. Applicable Rules

H23.1 (existing)

This equipment is 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]

[Devices subject to this condition : D1237, D1318, D1326, D1338, D1343, D1345, D1354, D1364, D1365, D1369, D1379, D1380, D1381, D1383, D1385, D1388, D1396, D1406, D1407, D1427, D1434, D2151, D3958]

K. Record Keeping/Reporting

K67.51 (existing)

The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Tank throughput in barrels.

Commodity/product stored and time period of its storage.

Actual vapor pressure, in psia, of each commodity/product stored.

Hydrocarbon concentration measurements done in the vapor space above the floating roof of the tank.

Other records that may be required to comply with the applicable requirements of District Rules 463(d), 1149, 1178, 40CFR 61 Subpart FF, and 40CFR 63 Subpart CC.



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[RULE 1149, 7-14-1995; RULE 1178, 12-21-2001; RULE 463, 3-11-1994;
40CFR 61 Subpart FF, 12-4-2003; 40CFR 63 Subpart CC, 5-25-2001]

[Devices subject to this condition : D1343, D1352, D1369, D1388, D1406]

K171.11 (existing)

The operator shall provide to the District the following items:

Final drawings and/or specifications of the geodesic dome cover and deck fitting upgrade to be installed/constructed shall be submitted to the District within 30 days after its construction.

[RULE 1178, 4-7-2006]

[Devices subject to this condition : D1406, D1435]

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I. BACKGROUND / GENERAL INFORMATION:

Chevron Products Co. submitted this AN499905 on 06-19-09 to modify the working volume of its Tank No. 871 (D1406) from 15,600 bbls to 11,462 bbls as a result of a foundation seismic analysis that showed the necessity to reduce the safe oil height to 37 ft although its overall tank height is still 47 ft (permit description is 47 ft 11 in) per its latest strapping chart shown in **Appendix A**. This change in the working capacity of the subject tank is not expected to change its throughput as previously evaluated under AN478032 for the construction of a dome cover and the replacement of its unslotted guidepole with slotted guidepole to meet the requirements of Rule 1178 (This project reportedly has been completed). Also, no other changes are expected from its previous permit under AN478032 (see **Appendix B** for copy of permit).

A brief permit history of the equipment based on District records is given below:

<u>Appl. No.</u>	<u>P/O (Date Issued)</u>	<u>Purpose of the Application</u>
6800	9068 (9-29-53)	New construction of the subject tank by previous owner, Standard Oil of California. The equipment was installed in 1953.
C18621	M17414 (4-15-81)	Installation of a secondary seal per Rule 463.
478032	P/C-P/O F96190 (4-1-08)	Construction of a dome cover & slotted guidepole
499905	(This application)	Change in safe oil height or working cap.of the tank.

According to Chevron, the proposed modification would not increase the tank throughput or change the kind of materials normally stored in the tank. The tank roof fittings count (see **Appendix C**) would remain the same. The tank location is shown in the plot plan in **Appendix D**.

District records do not indicate any outstanding compliance problem with the operation of the subject storage tank.

II. EMISSION ESTIMATE:

In order to show the change in VOC emissions from the subject storage tank as a result of the proposed change in its working capacity, calculations were done as shown in **Appendices E** (pre-modification) & **F** (post-modification). The calculations for the post-modification scenario assume the same operating parameters to reflect no change in the method of operation and rating (same throughput rate of 30,420 bbls/mon for same commodity, vapor pressure, etc. as the pre-modification scenario) as proposed by Chevron except the change in the tank working capacity from 15,600 bbls to 11,462 bbls. Results of these calculations are shown below (see also **Appendix G**):

Commodity	Estimated Total VOC Emissions, Lbs/Yr		Net Emission Change, Lbs VOC/Day
	Post-modification**	Pre-modification *	
Gasoline product (worst case scenario)	1,480.14	1,480.14	0

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* Pre-modification – 15,600 bbls/tank turnover; 23.40 tank turnovers/yr; 30,420 bbl/mon throughput.

** Post-modification – 11,462 bbls/tank turnover; 31.85 tank turnovers/yr; 30,420 bbl/mon throughput.

As shown above, the proposed tank modification would not trigger NSR at the same throughput of 30,420 bbl/mon (on this basis no throughput limit would be imposed on its permit). No Rule 1401 review is necessary because it would not result in an emission increase or corresponding increase in toxic risk. For NSR purposes, no change or same NSR data as reported in the previous application would be made to show the 0 emission increase above.

III. EVALUATION:

As stated above, the proposed modification to the subject storage tank by the change in working capacity but not in throughput (this parameter or basis would be specified as a limit) would not result in an emission increase and therefore, the modification is not subject to the provisions of NSR or new NSPS requirements.

The subject tank after the proposed modification is expected to continue to comply with the following District Rules and Regulations:

Rule 212: No public notice is required because there is no emission increase from the proposal. There is also no increase in toxic health risk. The equipment is not located within a 1,000-ft. of a school.

Rule 401: No visible emission to violate this rule is expected.

Rule 402: No nuisance problem is expected.

Rule 463: This tank is subject to the requirements of this rule since it has a storage volume of greater than 19,815 gallons and stores organic liquids, which is any liquid containing VOCs. Domed External Floating Roof Tanks are subject only to the requirements in Rule 463(d). Compliance with the requirements is expected.

Reg. IX: Standards of Performance for New Stationary Sources:

40CFR60, Subpart K (*Construction, Reconstruction or Modification after 6-1-73 and prior to 5-19-78*)

40CFR60, Subpart Ka (*Construction, Reconstruction or Modification after 5-18-78 and prior to 7-23-84*)

40CFR60, Subpart Kb (*Construction, Reconstruction or Modification after 7-23-84*)

The subject tank was installed in 1953. Subsequent modification (see details in Sec. I, p. 6) including the subject application do not result in any emission increase. Therefore, the said equipment is **not** subject to any of these subparts.

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**40CFR63,
Subpart CC**

The equipment is subject to this regulation because of its potential to emit hazardous air pollutants (HAP) including benzene [Note: The applicability of this regulation was overlooked in the previous evaluation]. The subject tank has been identified to belong to Grp 1 described in this subpart (see previous permit evaluation) since it meets the criteria on tank capacity, vapor pressure and HAP content of materials handled. Compliance to this regulation is expected with the Refinery's comprehensive LDAR program for inspections, repairs and recordkeeping.

Reg. X:

National Emission Standards for Hazardous Air Pollutants :

The subject tank is specifically subject to 40 CFR 61, Subpart FF because it would continue to handle waste materials such as recovered waste oils that contains benzene. Compliance with the applicable requirements of this subpart on monitoring, reporting, and recordkeeping is expected.

Rule 1149

Compliance with tank cleaning and degassing requirements of this rule is expected.

Rule 1173

There would be no new fugitive components whose emissions would be associated with the tank. The applicant has a maintenance and inspection program required by this rule for the facility.

Rule 1178

The proposal would not change compliance of the subject tank to this rule. The addition of a dome cover per R1178 (d)(2)(A) and replacement of its unslotted guidepole with a new slotted guidepole with a gasketed cover, a pole wiper and a pole sleeve to meet R1178(d)(1)(A)(ix) per R1178(d)(2)(D) were completed under the current P/C-P/O.

Reg. XIII: New Source Review

Emission Increase: No emission increase is expected from the modification. Therefore, no BACT or emission offset is required.

Modeling: There is no VOC dispersion modeling required under R1303(b)(1), Appendix A.

Sensitive Zone Requirements – Not applicable because no ERC is required for this application.

Facility Compliance - Not applicable since there is no emission increase from the modification.



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- Rule 1401:** There is no incremental increase in health risk that is expected from the modification and therefore, will comply with this rule.
- CEQA:** The proposed modification is not a significant project or part of a significant project requiring a CEQA document.
- Reg. XX:** RECLAIM rules do not apply since the modification does not affect NOx and SOx emissions from the facility. The facility, however, is covered by a RECLAIM Permit that would incorporate this change.
- Reg. XXX:** A initial Title V permit has been issued to the facility. The subject modification is a minor permit revision under Reg. XXX – Title V Permits because it would not result in any emission increase per Rule 3000(12)(A)(vi). No public notice is required but EPA has to be provided with the application and proposed permit revision and also a copy of the Title V permit within 5 days of its issuance.

IV. RECOMMENDATION:

Based on the foregoing evaluation, it is recommended that a Permit to Construct and Operate be issued for the subject storage tank modification because compliance with all applicable Rules and Regulations is most likely, subject to all the conditions on pages 2 to 5.

Emmanuel Ruivivar
A.Q. Engr. II