

October 22, 2009

Mr. Kevin Medeiros  
Chevron Product Company  
324 W. El Segundo Blvd.  
El Segundo

**Re:** Rule 1173 Compliance Plan  
Application Number: 494607  
Plan Owner/Operator: Chevron Product Company  
Facility ID: 800030  
Site Address: 324 W. El Segundo Blvd.  
El Segundo, CA 90245

Dear Mr. Kevin Medeiros:

Please refer to the submitted application (Application #494607) for the evaluation of your facility's Rule 1173 compliance plan dated December 24, 2008 to comply with the South Coast Air Quality Management District's (AQMD) Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants. The Rule 1173 compliance plan has been reviewed and approved, subject to the conditions listed below.

### **CONDITIONS**

1. The operator shall install and operate its atmospheric PRD monitoring systems in accordance with all data and specifications submitted with this application under which this plan is approved unless otherwise specified below.
2. The operator shall install electronic monitoring devices on all atmospheric PRDs identified in Attachment A that are subject to Rule 1173 (h)(1)(A).

3. The operator shall use a continuous pressure monitoring system (CPMS) to continuously monitor and record the process pressure and the electronic monitoring device that are used as indicators of release for the PRD identified in the plan.
4. CPMS shall be defined to include the, electronic monitoring devices, pressure sensors or transmitters, receivers, and the data acquisitions or recording systems. Continuous recording shall be defined as the recorded pressure readings and electronic valve monitoring readings at a minimum of one minute intervals. The data recording systems shall be accurately synchronized with the time and date of the measurement.
5. The operator shall ensure that the CPMS for each of the subject atmospheric PRDs is properly maintained and kept in good operating condition at all times when the process equipment that it serves is in operation, except when it is taken out of service due to the following reasons:
  - a. Failure, breakdown, or unplanned maintenance of the data acquisition or recording system, which shall not exceed 48 hours cumulatively in any given calendar quarter. The operator shall also report the time period that the data recording system is out of service in the quarterly report.
  - b. Planned maintenance of the CPMS shall not exceed 7 days in a calendar year unless the operator has notified the District by e-mail detailing the specific reason for the maintenance within 24 hours of taking the CPMS from service. All notifications shall be forwarded to [refinery.compliance@aqmd.gov](mailto:refinery.compliance@aqmd.gov).
6. The operator shall use following equation(s) or other alternative District-approved methodology to determine the volatile organic compound (VOC) emissions from a PRD release. The operator shall submit a plan application in order for the District to evaluate an alternative VOC emission estimation methodology.

PRD Equation for Vapor or Gas Service

$$W_s = \frac{(ACK_d K_b K_c)(P+14.7)}{3600 \sqrt{\frac{(T+460)Z}{M}}}$$

$$W_{\text{voc}} = W_s * \text{VOC} * t$$

$$W_{\text{TVOC}} = \sum W_{\text{voc}}$$

Where:

A = Relief Valve Orifice Size

$$C = \text{Sizing Coefficient} = 520 \sqrt{k \left( \frac{2}{k+1} \right)^{\frac{k+1}{k-1}}}$$

$k$  =  $C_p/C_v$  = Specific Heat Ratio for the released gas

$K_d$  = Effective Coefficient of Discharge (use  $K_d = 0.975$  in absence of manufacturer's PRD specific data)

$K_b$  = Capacity Correction Factor

$K_c$  = Combination Correction Factor. ( $K_c = 1$  if no rupture disk;  $K_c = 0.9$  if rupture disk)

$M$  = Molecular Weight of the released gas

$P$  = Pressure (psig), as measured with Continuous Process Monitoring System

$T$  = Temperature ( $^{\circ}\text{F}$ )

$t$  = Recorded Duration of Release in Seconds by Electronic Monitoring Device

VOC = weight percent VOC in the released gas

$W_s$  = Flow through the PRD, lb/sec

$W_{\text{voc}}$  = Flow of VOCs through the PRD

$W_{\text{TVOC}}$  = Total VOC Released during the Event, lbs

$Z$  = Compressibility Factor

#### PRD Equation for Liquid Service

$$Q = 0.63 A K_d K_w K_v \sqrt{\frac{P}{G}}$$

$$M = Q * 8.34 * G * t$$

$Q$  = flow rate, (U.S. gallon per second)

$K_d$  = Rated Coefficient of Discharge (use  $K_d = 0.65$  in absence of manufacturer's PRD specific data)

$K_w$  = Capacity Correction Factor ( $K_w = 1$  for atmospheric back pressure)

$K_v$  = Correction Factor due to Viscosity (assume = 1)

$P$  = Pressure (psig), as measured with Continuous Process Monitoring System

$G$  = Specific Gravity of the liquid at flowing temperature

$M$  = Release per Event in lbs

$t$  = Recorded Duration of Release in Seconds by Electronic Monitoring Device

For each PRD release event, it shall be assumed that the PRD is fully open for the duration of the release recorded by the monitoring device. Any alternative in determining the release duration or quantity shall be evaluated and approved in writing by the District.

7. The operator shall calibrate and maintain each pressure sensor and electronic monitoring device in accordance with manufacturer's specifications.
8. All components of the CPMS shall be made available to District personnel for inspection upon request.
9. The operator shall keep adequate records to show compliance with all plan conditions. Such records shall be made available to District personnel upon request. The operator shall maintain records for at least five years.
10. The operator shall connect valve E-302, E-354, E-201A/B, E201C/D, E-202A, E202B, E-202C, and E-202D to a vapor recovery system or pollution control equipment, or removed the valves from atmospheric PRD service by December 31, 2009.

If you have any question, please contact Mr. Johnny Pan at (909) 396-3602.

Sincerely yours,

Jay Chen, P.E.  
Senior AQ Engineering Manager  
Refinery & Waste Management  
Permitting

Attachment A-List of Atmospheric PRDs

cc: Compliance  
A/N 494607

# ATTACHMENT A

DRAFT

## PRD INVENTORY

Equipment Location ID	Location	Equipment Location Description
RTC-V-510	#2Crude	V-510PRD
2CU-C-308	#2Crude	C-308PRD
2CU-V-363	#2Crude	V-363PRD
MX-R-410	#2Crude	R-410PRD
MX-V-410	#2Crude	V-*10PRD
MX-V-441	#2Crude	V-441PRD
MX-V-442	#2Crude	V-442PRD
COGE-V4540	Cogen	V-4540eastPRD
COGE-V-4540-1	Cogen	V-4540westPRD
2RES-E-201CDS	#2Crude	E-201C/DShellsidePRD
2CU-C-301-1	#2Crude	C-301PRD-1
2CU-C-301-2	#2Crude	C-301PRD-2
2CU-C-351-1	#2Crude	C-351PRD-1
2CU-C-351-2	#2Crude	C-351PRD-2
2CU-C-351-3	#2Crude	C-351PRD-3
2CU-V-355	#2Crude	V-355PRD
2RES-C-201-1	#2Crude	C-201PRD-1
2RES-C-201-2	#2Crude	C-201PRD-2
2RES-E-201ABS	#2Crude	E-201A/BSHELLPRD
LPC-27	#2Crude	CUTBACKLINEPRD
MX-E-410	#2Crude	E-410TubePRD
MX-V-430	#2Crude	V-430PRD
MX-V-440	#2Crude	V-440PRD
RTC-E-510A	#2Crude	E-510APRD
RTC-E-510B	#2Crude	E-510BPRD
RTC-E-510C	#2Crude	E-510CPRD
RTC-E-510D	#2Crude	E-510DPRD
RTC-E-520A	#2Crude	E-520APRD
RTC-E-520B	#2Crude	E-520BPRD
RTC-E-530	#2Crude	E-530PRD
1atpv-202	S/A	V-202