



Section I – South Coast AQMD LAER/BACT Determination

Source Type: **Major/LAER**
 Application No.: **470738, 470739, 555856, and 555857**
 Equipment Category: **Sulfur Recovery Unit**
 Equipment Subcategory: **Claus Unit and Tail Gas Treatment Unit**
 Date: **February 2, 2024**

1. EQUIPMENT INFORMATION

A. MANUFACTURER:		B. MODEL:	
C. DESCRIPTION: Sulfur Recovery Unit (SRU) which consists of Claus Unit and Tail Gas Treatment Unit (TGTU) followed by a Tail Gas Incinerator and Caustic Scrubber.			
D. FUNCTION: The acid gas feeds to the SRU to recover elemental sulfur. Sulfur not recovered in the Claus unit (front portion of SRU) will process in an amine-based tail gas treatment unit (rear portion of SRU). The TGTU is vented to a tail gas incinerator, followed by a caustic scrubber for removal of remaining H ₂ S and SO _x , respectively.			
E. SIZE/DIMENSIONS/CAPACITY: Sulfur production capacity is 235 long tons per day when processing amine acid gas only.			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: 50.1 MMBTU/Hr			
G. BURNER INFORMATION			
TYPE		INDIVIDUAL HEAT INPUT	NUMBER
Ultra Low NO _x		50.1 MMBTU/HR	1
H. PRIMARY FUEL: Natural gas		I. OTHER FUEL: N/A	
J. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WEEK 52 WKS/YR			
K. EQUIPMENT COST: N/A			
L. EQUIPMENT INFORMATION COMMENTS:			

2. COMPANY INFORMATION

A. COMPANY: Chevron Products Company		B. FAC ID: 800030	
C. ADDRESS: 324 W El Segundo Blvd. CITY: El Segundo STATE: CA ZIP: 90245		D. NAICS CODE: 324110	
E. CONTACT PERSON: Sara Antunez		F. TITLE: Air Permitting Engineer	
G. PHONE NO.: (310) 615 - 2957		H. EMAIL: Sara.Antunez@chevron.com	

3. PERMIT INFORMATION

A. AGENCY: South Coast AQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Bob Sanford	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 5/13/10 and 8/11/2015 for 555856 and 555857 P/O NO.: PO ISSUANCE DATE: 5/31/2017	
E. START-UP DATE: 2012	
F. OPERATIONAL TIME: +10 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: .						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC (H₂S)
BACT Limit		0.05 LB/MMBTU NATURAL GAS*	12 PPMVD	0.03 LB/MMBTU NATURAL GAS*		2.5 PPMV
Averaging Time		24 hours	72 hours	24 hours		24 hours
Correction		-	0% O ₂	-		0% O ₂
B. OTHER BACT REQUIREMENTS: * Incinerator is equipped with ultra-low NOx burner and emission limits are based on the lower heating value (LHV) of natural gas.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: Permit conditions A99.17 and A99.18 have provisions for NOx and CO BACT limits during start-up and shutdown. SOx BACT limit does not need an equivalent allowance because sour gas/waste gas is not being routed to the SRU/TGTU during these periods.						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: N/A		B. MODEL: N/A	
C. DESCRIPTION: Tail gas incinerator (Ultra Low-NOx burner, Coen/Todd combustion Rapid Mix Burner (RMB)) and SO ₂ scrubber (tail gas polishing).			
D. SIZE/DIMENSIONS/CAPACITY: Condition C1.146) The operator shall limit the firing rate of burner to no more than 50.1 MMBTU per hour.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NOs.: 555856 and 555857 PC ISSUANCE DATE: See Section (3)(D) PO NO.: PO ISSUANCE DATE: 5/31/2017			
F. REQUIRED CONTROL EFFICIENCIES: N/A			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: The John Zink designed tail gas incinerator utilizes natural gas as the primary fuel to combust the tail gas from the TGTU to reduce the tail gas H ₂ S concentration below 2.5 ppmvd. The 1450°F temperature is required to meet the BACT CO limit of 0.03 lb/MMBtu at the stack and the H ₂ S limit of 2.5 ppmv (averaged over 24 hours, 0%).			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source tests and continuous emission monitoring system (CEMS)				
B. DATE(S) OF SOURCE TEST: 9/29/2015 - 10/2/2015				
C. COLLECTION EFFICIENCY METHOD: N/A				
D. COLLECTION EFFICIENCY PARAMETERS: N/A				
E. SOURCE TEST/PERFORMANCE DATA:				
Test Date		12/27/2012 – 2/6/2013	9/29/2015 - 10/2/2015	
Pollutant		Average Test Results	Average Test Result	Emission Limit
NO _x	lbs/MMBTU	0.01	0.04	0.05
CO	lbs/MMBTU	< 0.01	0	0.03
H ₂ S	ppmvd (0% O ₂)	0.12	0.13	2.5
SO _x	ppmvd (0% O ₂)	0.16	0.02	12
The test results are based on a 1-hour average.				

F. TEST OPERATING PARAMETERS AND CONDITIONS: Condition D29.11) The test shall be conducted when this equipment is operating at 80 percent or greater of the maximum design capacity.			
G. TEST METHODS (SPECIFY AGENCY):			
Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NO _x	District Method 100.1	1 hour	Outlet of Scrubber
SO _x	District Method 100.1 or 6.1	1 hour	Outlet of Scrubber
CO	District Method 100.1 or 10.1	1 hour	Outlet of Scrubber
VOC	District Method 25.1 or 25.3	1 hour	Outlet of Scrubber
PM	District Method 5.1, 5.2, or 5.3	District-approved averaging time	Outlet of Scrubber
PM ₁₀	EPA Method 201A	District-approved averaging time	Outlet of Scrubber
NH ₃	Approved District method	District-approved averaging time	Outlet of Scrubber
The operator shall also conduct a source test for COS, CS ₂ , and H ₂ S using District Method 307-91.			
H. MONITORING AND TESTING REQUIREMENTS:			
D82.11 The operator shall install and maintain a CEMS to measure the following parameters: CO concentration in ppmv Oxygen concentration in percent volume The CEMS shall be approved, operated, and maintained in accordance with the requirements of Rule 218. To determine compliance with the CO emission limit, the CEMS data shall be converted from CO concentrations to mass emission rates (lbs/MMBtu of natural gas combusted) on a continuous basis. The natural gas firing rate shall be determined using a fuel meter that is calibrated according to manufacturer's recommendations and a low heating value (LHV) of 914 btu/scf for natural gas. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 407, 4-2-1982] [Devices subject to this condition: C4344*]			
D82.12 The operator shall install and maintain a CEMS to measure the following parameters: NO _x concentration in ppmv SO _x concentration in ppmv Oxygen concentration in percent volume To determine compliance with the NO _x emission limit, the CEMS data shall be converted from NO _x concentrations to mass emission rates (lbs/MMBtu of natural gas combusted) on a continuous basis. The natural gas firing shall be determined using a fuel meter that is calibrated according to manufacturer's recommendations and a low heating value (LHV) of 914 btu/scf for natural gas. [RULE 2005, 5-6-2005] [Devices subject to this condition: C4344*]			
*Incinerator			
I. DEMONSTRATION OF COMPLIANCE COMMENTS: N/A			

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 289620		B. CCAT: 91, 96 and 4B		C. APPLICATION TYPE CODE: -	
D. RECLAIM FAC? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		E. TITLE V FAC: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		F. SOURCE TEST ID(S): PR 12091 and R 16048	
G. SCAQMD SOURCE SPECIFIC RULES: -					
H. HEALTH RISK FOR PERMIT UNIT					
H1. MICR: -		H2. MICR DATE: -		H3. CANCER BURDEN: -	
H4. CB DATE: -		H5. HIA: -		H6. HIA DATE: -	
H7. HIC: -		H8. HIC DATE: -			