Hilcorp Energy (formerly ConocoPhillips Company)[1]
Sunnyside Compressor Station
Full Compliance Evaluation (FCE)
On-Site Clean Air Act Evaluation

Inspection Date:	May 14, 2018
Date of Inspection Report:	July 3, 2018
EPA Representative	Laurie Ostrand
Tribal Representatives:	David Heermance, Southern Ute Indian Tribe Andrew Switzer, Southern Ute Indian Tribe
Company Representatives	Jennifer Deal, Hilcorp. Cory Minton, Operations Manager, Elite San Juan2 Clint Thompson, Area Supervisor, Elite San Juan
Inspection Report Prepared By:	Laurie Ostrand /s/
Inspection Report Reviewed By:	Scott Patefield /s/
Applicable Rules:	MACT HH and ZZZZ (both area), NSPS OOOO (compressors),and Tribal minor new source review
CAA Permit History **Issued:**	SMNSR-SU-000032-2011.001 June 5, 2014

I. General Source Information

Parent Company Name:	Hilcorp Energy
Corporate Office Location:	382 Road 3100, Aztec, NM 87410
Facility Name:	Sunnyside Compressor Station
Facility Location	Latitude 37.1194, Longitude -107.8372
EPA Region:	8
County, State:	La Plata County, Colorado
Reservation:	Southern Ute Indian Reservation
Tribe:	Southern Ute Indian Tribe
SIC Code:	1311
AFS Plant Id Number:	08-067-U0041 (previously 08-067-00252)
Other Clean Air Act Permits:	None

[1] This facility was formally owned and operated by ConocoPhillips but as of August 1, 2017 was purchased by Hilcorp.
2Hilcorp contracts with Elite San Juan to operate and maintain the compressors for Hilcorp.

ED_004016P_00004945-00001

II. Summary of Enforcement Actions: *None in the last five (5) years. Although, the permit incorporates a 2/4/10 Federal Compliance Agreement and Final Order (CAFO) between the EPA and ConocoPhillips, see Docket No. CAA-08-2010-0007.)*

III. Overall Inspection Findings

As of the date of this inspection report, not all needed information was provided. Once all information is received EPA will issues an addendum to this report. EPA is still waiting to receive catalyst replacement information and catalyst pressure drop readings, both from 5/1/16 to 4/30/18.

- *If ASTM D6348 is going to be used for performance testing, the performance test protocol should be revised to assure that ASTM D6348-03 is used rather than ASTM D6348-12.*
- *Based on the information provided, it's not clear whether all appropriate actions have been taken when engine pre-catalyst temperature falls below 405°F;*
- *It appears that a performance test was not conducted within 90 calendar days after engine #2 was rebuilt in 3/2017.*
- *When Hilcorp initially purchased Sunnyside they were late in submitting performance test results and failed to notify EPA of upcoming testing. This issue has since been resolved.*
- *Annual deviation reports indicate that the pressure drop across engine catalysts haven't always met permit requirements. It's not clear whether all appropriate actions have been taken when this has occurred. As of the date of this report the pressure drop data had not been provided to the EPA.*
- *The annual NSPS OOOO report was not submitted in 2018.*

IV. Description of Facility

The Sunnyside Compressor Station (Sunnyside) dehydrates and compresses natural gas. The natural gas comes from wells located in the vicinity of the Florida River producing natural gas from the Fruitland Coal Formation. The natural gas entering the compressor station flows through an inlet separator and mist screens where most of the water is removed. The water produced by this step is transferred to an on-site storage tank and eventually disposed of in a Class II underground disposal well.

The facility currently operates four 4-stroke, lean burn Waukesha L7042GL engines with a site rating of 1,330 horsepower (hp) each, a glycol dehydration system capable of processing 45 million standard cubic feet per day (MMscfd), miscellaneous organic liquid storage tanks, and three tank heaters.

According to the permit application, the Sunnyside engines were manufactured prior to July 1, 2007 and, therefore, are <u>not</u> subject to NSPS Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. The permit application also indicates that the Sunnyside is an area source of hazardous air pollutants (HAPS) and all the engines commenced construction prior to June 12, 2006. Therefore, the engines are existing affected sourced under NESHAP Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines (RICE), and subject to the emission limits and standards in Subpart ZZZZ.

Additionally, the permit application indicates that the TEG dehydrator uncontrolled potential benzene emissions are below 1.0 tpy; therefore, the Sunnyside station must only maintain records of this

determination under 40 CFR 63.774(d)(1) in the NESHAP Subpart HH – Oil and Natural Gas Production Facilities.

On April 20, 2014, the EPA issued a Synthetic Minor New Source Review (SMNSR) permit in accordance with the Tribal Minor New Source Review Permit Program at 40 CFR part 49 for Sunnyside. The SMNSR permit incorporated enforceable requirements previously established in the Operating permit issued by the EPA in accordance with the title V Operating Permit Program at 40 CFR Part 71. As of July 5, 2014, the effective date of the SMNSR permit, Sunnyside ceased to be a major source of HAPs.

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Table 1: Emission Units and Emission Generating Activities

Unit ID	Description	Control Equipment	Observations
E001 (Engine #4)	Natural Gas Fired Waukesha 4-SLBurn Engine Reciprocating internal combustion engine (RICE) Model No. L 7042 GL - 1330 hp Serial Number - C-11100/8[3] Manufacture Date: Prior to 07/01/07 Installation Date - 04/25/2006	Miratech Oxidation Catalyst	*Not Operating* *Serial # read: 11100/1* *Build date not shown; Rebuilt date: 8/20/12* *Per 5/30/18 email from Ms. Deal:* *Install date: 01/13/2005* *Manufacture date: 04/1998* *Rebuild date: 08/20/2012*
E002 (Engine #2)	Natural Gas Fired Waukesha 4-SLBurn Engine Reciprocating internal combustion engine (RICE) Model No. L 7042 GL - 1330 hp Serial Number - C-10664/2 Manufacture Date: Prior to 07/01/07 Installation Date - 12/07/2005	Miratech Oxidation Catalyst	*Operating* *Serial # read: 11542/1* *Build date not shown; Rebuilt date: 6/2013* *Catalyst inlet temp: 649°F* *Pressure drop across catalyst: 3.8-4.5"* *Inlet pressure: 22 psi; 1st stage: 110 psi; 2nd stage: 320; RPM: 1033* *Per 5/30/18 email from Ms. Deal:* *Install date: 01/12/2005* *Manufacture date: 04/1995* *Rebuild date: 03/7/2017*

[3] On 8/18/15 ConocoPhillips indicated that they replaced the Ariel compressor with a compressor of the same make, model and configuration on 7/20/15. The 8/18/15 letter indicated that the compressor commenced construction prior to 8/23/11 and was therefore not subject to NSPS Subpart OOOO.

Unit ID	Description	Control Equipment	Observations
E003 (Engine #1)	Natural Gas Fired Waukesha 4-SLBurn Engine Reciprocating internal combustion engine (RICE) Model No. L 7042 GL - 1330 hp Serial Number - C-13405/1 Manufacture Date: Prior to 07/01/07 Installation Date - 03/06/2007	Miratech Oxidation Catalyst	*Operating* *Serial # read: 13405/1* *Build date 8/01; Rebuilt date: 6/1/2012* *Catalyst inlet temp: 653°F* *Pressure drop across catalyst: 2.6"* *Inlet pressure: 22 psi; 1st stage: 110 psi; 2nd stage: 320; RPM: 1045* *Per 5/30/18 email from Ms. Deal:* *Install date: 01/12/2005* *Manufacture date: 08/2001* *Rebuild date: 06/1/2012*
E004 (Engine #3	Natural Gas Fired Waukesha 4-SLBurn Engine Reciprocating internal combustion engine (RICE) Model No. L 7042 GL - 1330 hp Serial Number - C-11542/1[4] Manufacture Date: Prior to 07/01/07 Installation Date -	Miratech Oxidation Catalyst	*Operating* *Serial # read: 10788/1* *Build date not shown; Rebuilt date: 6/25/17* *Catalyst inlet temp: 708°F* *Pressure drop across catalyst: 2.5-3.1"* *Inlet pressure: 21 psi; 1st stage: 110 psi; 2nd stage: 330; RPM: 1046* *Per 5/30/18 email from Ms. Deal:* *Install date: 09/29/2005* *Manufacture date: 02/1993* *Rebuild date: 06/7/2017*

4 On 2/9/17 ConocoPhillips submitted a letter indicating that the E004, Ariel Compressor was being replaced with a compressor of the same make, model and configuration between March 14-15, 2017. In emails dated 6/28/18 and 6/29/18, Ms. Deal indicated that it appears this compressor was never swung.

Unit ID	Description	Control Equipment	Observations
E005 (Engine #3)	NATCO Glycol Dehydration Unit Actual Rate 22.3 MMscf/day Maximum Rate 45 MMscf/day Model No. - Unknown Serial No. – Unknown Installation date 3/12/2002		*Has two Kimray 200 model pumps. One operates and the other is plumbed but in standby mode. Kimray tag indicates 200 gal/hr max and 33 max strokes/minute. Measured 30 strokes/minute*
E006	Miscellaneous tanks – shown in Table 2		
E007	Miscellaneous Heaters – shown in Table 2		

*Hp = horsepower; MMscfd = million standard cubic feet per day

Table 2

Description
LO-1 to LO-4, Lube Oil, 500 gallons each, annual throughput 5,000 gallons each
BGT-1, Pit Sump Liquids, 5,040 gallons, annual throughput 20,160 gallons
UO-1 Used Oil, 12,600, gallons, annual throughput 126,000 gallons
UO-2, Used Oil 2,400 gallons, annual throughput 24,000 gallons
AF-1, Antifreeze, 500 gallons, annual throughput 5,000 gallons
TEG-1 Triethylene Glycol, 500 gallons, annual throughput 5,000 gallons
PWT-1 to PWT-2, Produced Water, 21,000 gallons each, annual throughput 210,000 gallons each
(2) 0.25 MMBtu/hr
(1) 0.45 MMBtu/hr Tank Heaters

*Million British thermal units per hour (MMBTU/hr)

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Table 3: Allowable Emission Proposed in Permit Application (tons per year)

Unit ID	NOx*	CO*	VOC*	PM*	SO_2*	CH_2O*	Benzene	Total HAPs*
E001	23.12	5.5	1.28	0.50	0.73	0.45	0.002	0.525
E002	23.12	5.5	1.28	0.50	0.73	0.45	0.002	0.525
E003	23.12	5.5	1.28	0.50	0.73	0.45	0.002	0.525
E004	23.12	5.5	1.28	0.50	0.73	0.45	0.002	0.525
E005	0.66	0.55	7.0	0.05	0.09	-	0.22	3.14
E006	-	-	0.005	-	-	-	-	-
E007	0.42	0.36	0.02	0.03	0.06	-	-	0.008
Total	93.13	22.74	12.14	2.05	3.03	1.79		5.25

*NOx = nitrogen oxide; CO = carbon monoxide; VOC = volatile organic compound; PM = particulate matter; SO_2 = sulfur dioxide; CH_2O = formaldehyde; HAP = hazardous air pollutant.

V. General Inspection Observations and Commentary:

On May 14, 2018, EPA representative Laurie Ostrand met with Jennifer Deal, Hilcorp, and Cory Minton and Clint Thompson from Elite San Juan, along with David Heermance and Andrew Switzer of the Southern Ute Indian Tribe. Ms. Ostrand travelled with Mr. Heermance and Mr. Switzer to Sunnyside and then to Argenta. On May 15, 2018, following an inspection of the Hilcorp's Ute Compressor Station, Ms. Ostrand, Mr. Heermance and Mr. Switzer went to Hilcorp's offices and met with Ms. Deal to conduct a records review.

VI. Opening Meeting:

We arrived at Sunnyside at 1:25 pm. Mr. Minton gave us a safety orientation. Ms. Ostrand indicated we wanted to walk around the facility and look at the equipment.

VII. Walk Through Inspection Observations:

Mr. Minton indicated that:

- *Gas coming into the facility is at about 22 psi and at about 350 psi going out of the facility;*
- *Incoming gas is all coal bed methane and comes from about 86-87 nearby Hilcorp wells;*
- *Outgoing gas goes to the Williams Ignacio Gas Plant;*
- *Engine #4 is not operating and is on standby as it is not needed for production;*
- *The site continuously monitors pre-catalyst temperature and pressure drop across the catalyst but only records a reading once every 15 minutes;*
- *Someone comes out and manually writes down pressure drops periodically, they also spot check the pressure drop with a manometer about once/month;*
- *They monitor engines to see when a rebuild should occur, but an engine is typically rebuilt every 40,000 – 48,000 hours or on a 5-year rotation;*
- *An engine is tested after a rebuild;*
- *They have a swing engine for Sunnyside and Argenta;*
- *Rebuilt engines do no result in a reconstruction under the regulations as a rebuild of an engine is about $160,000 and an engine package is about $1,000,000;*
- *When there is an engine head failure they pull and clean the catalyst; when there are abnormalities in temperature and pressure they will clean the catalyst; they keep two spare catalysts at all times and when they replace the catalysts they retest;*
- *Typically change the catalysts when do an engine overhaul every 40,000 to 48,000 hours;*
- *When they do annual maintenance on the engines will typically flip the catalysts;*
- *They have a preventative maintenance schedule for the engines and typically follow what is recommended by the manufacturer;*
- *They have a maintenance management program (called EAM) that contains all equipment and list maintenance task list and schedules as well as when the maintenance has occurred;*
- *Use No bleed or Low bleed pneumatics.*

During the inspection, Mr. Heermance was also videoing various equipment with a FLIR camera. See Table 14.

Image 1: Aerial view of Sunnyside CS from Google Maps.

Image 2: Sunnyside CS, pig inlet on right. RIMG0001.JPG

Image 3: Sunnyside CS, 3 tanks, 2 on right are produced water. RIMG0002.JPG

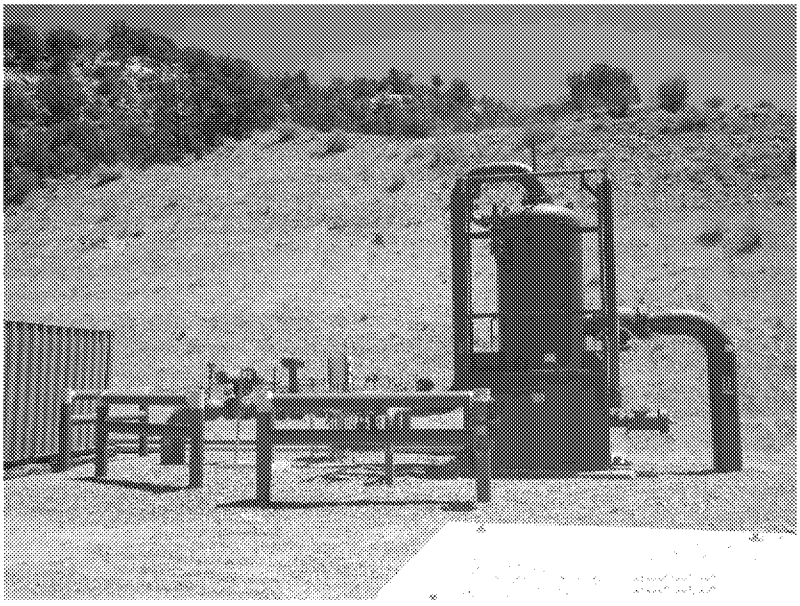

Image 4: Sunnyside CS scrubber. RIMG0003.JPG

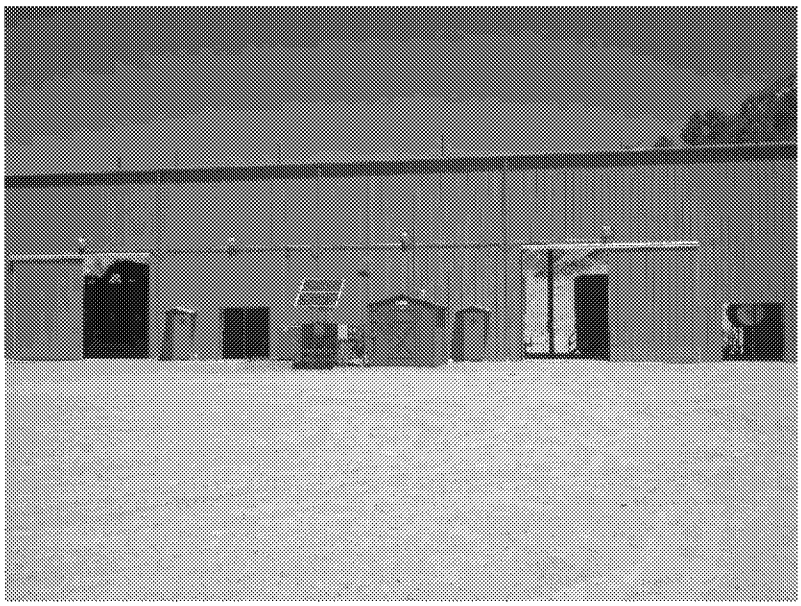

Image 5: Sunnyside CS compressor building. RIMG00004.JPG

Image #6: Engine #1 catalyst part of muffler. RIMG0005.JPG

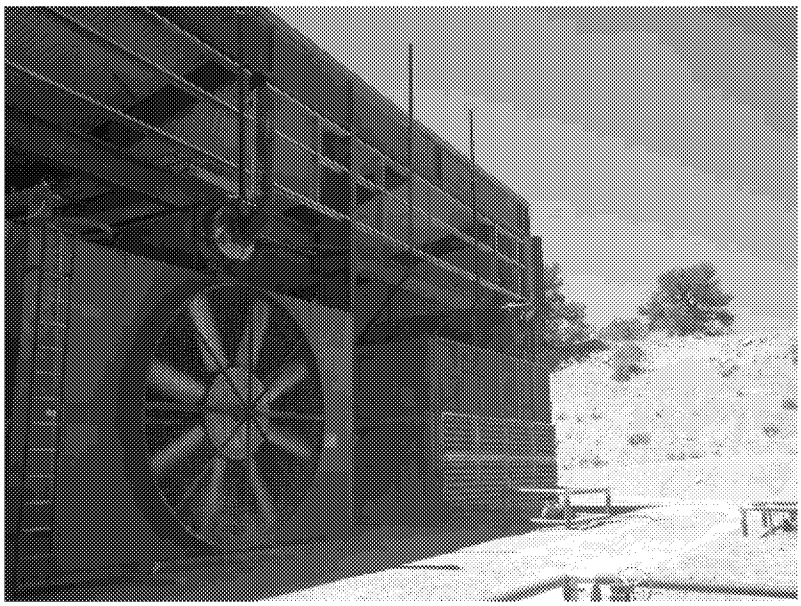

Image #7: Sunnyside CS. Engine #4 muffler and catalyst. RIMG0006.JPG

Image #8: Sunnyside CS, Dehy pumps. RIMG0007.JPG

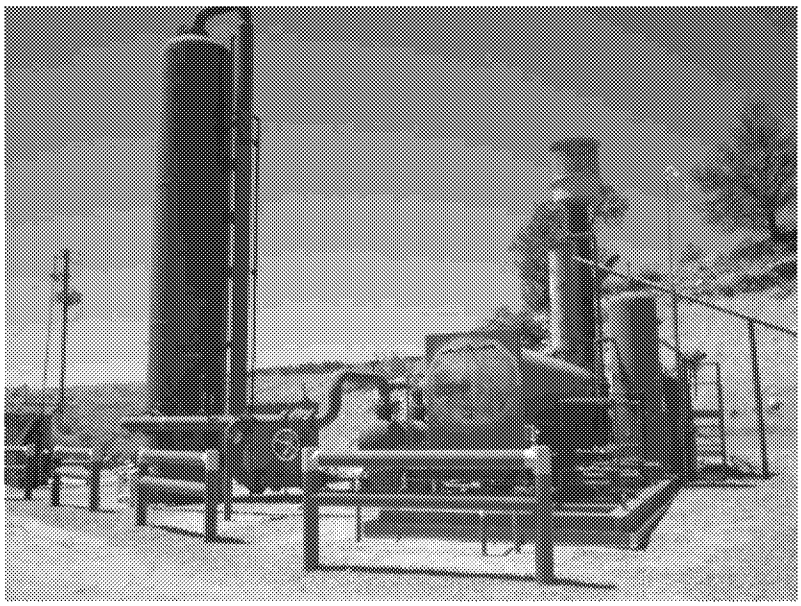

Image #8: Sunnyside CS Dehy reboiler on right and contactor on left. RIMG0008.JPG

VIII. Permit Requirements:

Note that with respect to this full compliance evaluation, the EPA is generally reviewing data and information from roughly 5/1/16 to 4/30/18.

I. Conditional Permit to Construct

C. Requirements for Engines Error! Bookmark not defined.

1. Construction and Operational Limits:

The Permittee shall install and operate emission controls as specified in this permit on four (4) reciprocating internal combustion engines each meeting the following specifications:

(a) Operated as a 4-stroke lean-burn;

(b) Fired with natural gas; and

(c) Limited to a maximum site rating of 1,330 horsepower (hp).

(d) Only the engines that are operated and controlled as specified in this permit are approved for installation under this permit.

Observations: *Hilcorp's database indicates that all engines are Waukesha model # L7042GL. The engine information sheet submitted with the Argenta permit application indicates that Waukesha Model L7042GL are "turbocharges and intercooled, twelve-cylinder, lean combustion, four-cycle gas engines." The engine information sheet also indicates that at 1000 rpm the brake horse power is 1289. During the inspection Engine #1 was at 1045 rpms, #2 at 1033, and #3 at 1046. #4 was not operating.*

2. Emission Limits

(a) Emissions from each engine shall not exceed the following:

(i) NO_X: 5.28 pounds per hour (lb/hr);
(ii) CO: 1.27 lb/hr; and
(iii) CH_2O: 0.10 lb/hr.

(b) Emission limits shall apply at all times, unless otherwise specified in this permit.

***Observations**: See Table 5 below showing annual stack test results and Table 7 showing quarterly monitoring results.*

3. Control and Operational Requirements

(a) The Permittee shall ensure that the engines are equipped with a catalytic control system capable of reducing the uncontrolled emissions of CO and CH_2O to meet the emission limits specified in this permit.

***Observations:** During the inspection, Mr. Minton identified where the catalysts were located on all the engine stacks. See Images #6 and #7.*

(b) The Permittee shall install, operate, and maintain temperature sensing devices (i.e., thermocouple or resistance temperature detectors) before the catalytic control system on each engine in order to continuously monitor the exhaust temperature at the inlet of the catalyst bed. Each temperature sensing device shall be calibrated and operated by the Permittee according to manufacturer specifications or equivalent specifications developed by the Permittee or vendor.

***Observations:** During the inspection, Ms. Ostrand observed the real-time pre-catalyst inlet temperature being monitored on each engine. See also information below regarding temperature data provided following the inspection.*

(c) Except during startups, which shall not exceed 30 minutes, the engine exhaust temperature of each engine, at the inlet to the catalyst bed, shall be maintained at all times the engines operate with an inlet temperature of at least 450° F and no more than 1,350°F.

***Observations:** No start-ups were observed during the inspection. See discussion below regarding review of temperature data submitted following the inspection.*

(d) During operation, the pressure drop across the catalyst bed on each engine shall be maintained to within ±2 inches of water from the baseline pressure drop measured during the most recent performance test. The baseline pressure drop for the catalyst bed shall be determined at 100% ± 10% of the engine load measured during the most recent performance test.

***Observations:** During the inspection, Ms. Ostrand observed the real-time pressure drop monitored across each engine catalyst. See information below regarding pressure drop readings provided following the inspection.*

(e) The Permittee shall only fire each engine with natural gas. The natural gas shall be pipeline-quality in all respects except that the carbon dioxide (CO_2) concentration in the gas is not required to be within pipeline-quality.

Observations: *In an email dated 6/25/18, Ms. Deal indicated that they perform annual gas analysis to demonstrate that the fuel used for engines is pipeline quality natural gas.*

(f) The Permittee shall follow, for each engine and its respective catalytic control system, the manufacturer recommended maintenance schedule and procedures or equivalent maintenance schedule and procedures developed by the Permittee or vendor to ensure optimum performance of each engine and its respective catalytic control system.

Observations: *During the records review Ms. Deal indicated that the manufacturer recommended engine maintenance is included in a "Task List" for the engine. Ms. Deal indicated that the catalyst maintenance is also included in the Task Lists. In an email dated 6/6/18, Ms. Deal provided engine and catalyst manufacturer recommended maintenance specifications. In an email dated 6/21/18 Ms. Deal provided example preventative maintenance checklists for the 1-month, 2-month, 4-month, 6-month and 1-year preventative maintenance. Additionally, Ms. Deal provided a spreadsheet indicating when preventative maintenance had been conducted in 2016, 2017 and 1/2018.*

(g) The Permittee may rebuild an existing permitted engine or replace an existing permitted engine with an engine of the same hp rating, and configured to operate in the same manner as the engine being rebuilt or replaced. Any emission limits, requirements, control technologies, testing or other provisions that apply to the permitted engines that are rebuilt or replaced shall also apply to the rebuilt and replaced engines.

Observations: *In an email dated 5/30/18, Ms. Deal indicated that #1 (SN C-13405/1) was installed on 1/12/05 and rebuilt on 6/1/12; #2 (SN C-11542/1) was installed on 1/12/05 and rebuilt on 3/7/17; #3 (SN C-10788/1) was installed on 9/29/05 and rebuilt on 6/7/17; and #4 (SN C11100/8) was installed on 1/13/05 and rebuilt on 8/20/12. During the inspection, Ms. Ostrand read on #2's tag that the rebuild date was 6/2013. Apparently, the tag had not been updated with the 3/7/17 rebuild. All other rebuild dates read on engines #1, #3 and #4 are consistent with the information provided by Ms. Deal.*

(h) The Permittee may resume operation without the catalytic control system during an engine break-in period, not to exceed 200 operating hours, for rebuilt and replaced engines.

Observations: *None made during the inspection.*

4. <u>Performance Testing Requirements</u>

(a) Performance tests shall be conducted on each engine for measuring NO_X, CO, and

CH_2O emissions to demonstrate compliance with each emission limitation in this permit. The performance tests shall be conducted in accordance with appropriate reference methods specified in 40 CFR Part 63, Appendix A and 40 CFR Part 60, Appendix A, or an EPA approved American Society for Testing and Materials (ASTM) method. The Permittee may submit to the EPA a written request for approval of an alternate test method, but shall only use that alternate test method after obtaining approval from the EPA.

(i) The initial performance test for each engine shall be conducted within 90 calendar days of startup of a new engine.
(ii) Subsequent performance tests for CH_2O emissions shall be conducted within 12 months of the most recent performance test.
(iii) Performance tests shall be conducted within 90 calendar days of each catalyst replacement.
(iv) Performance tests shall be conducted within 90 calendar days of startup of all rebuilt and replaced engines.

Observations: *See Table 5, below, for annual performance tests results. Engine installation date and rebuild date are provided in the* ***Observations*** *under Section C.3.(g), above. It appears that a performance test was not conducted within 90 calendar days after engine #2 was rebuilt in 3/2017.* ***As of the date of this report the catalyst replacement dates had not yet been provided to EPA.***

(b) The Permittee shall not perform engine tuning or make any adjustments to engine settings, catalytic control system settings, or processes or operational parameters the day of the engine testing or during the engine testing. Any such tuning or adjustments may result in a determination by the EPA that the test is invalid. Artificially increasing an engine load to meet testing requirements is not considered engine tuning or adjustments.

Observations: *During the records review Ms. Deal indicated that since she's been there she is not aware of any testing being aborted or any tuning or adjustments being made during testing.*

(c) The Permittee shall not abort any engine tests that demonstrate non-compliance with the emission limits in this permit.

Observations: *See discussion immediately above.*

(d) All performance tests conducted on each engine shall meet the following requirements:

(i) The pressure drop across each catalyst bed and the inlet temperature to each catalyst bed shall be measured and recorded at least once during each performance test.

(ii) All tests for NO_X and CO emissions shall be performed simultaneously.

(iii) All tests shall be performed at a maximum operating rate (90% to 110% of the maximum achievable engine load available on the day of the test). The

Permittee may submit to the EPA a written request for approval of an alternate load level for testing, but shall only test at that alternate load level after obtaining written approval from the EPA.

(iv) During each test run, data shall be collected on all parameters necessary to document how emissions were measured and calculated (such as test run length, minimum sample volume, volumetric flow rate, moisture and oxygen corrections, etc.).

(v) Each test shall consist of at least three 1-hour or longer valid test runs. Emission results shall be reported as the arithmetic average of all valid test runs and shall be in terms of the emission limits in this permit.

(vi) Performance test plans shall be submitted to the EPA for approval 60 calendar days prior to the date the test is planned.

(vii) Performance test plans that have already been approved by the EPA for the emission units approved in this permit may be used in lieu of new test plans unless the EPA requires the submittal and approval of new test plans. The Permittee may submit new plans for EPA approval at any time.

Observations: *The test plan was submitted 4/13/16 and EPA approved it on 7/12/16. The 9/8/16 test report indicates that there was an addendum to the test protocol which was submitted on 9/6/16. The addendum is adding Method 323 for formaldehyde testing. The 4/13/16 and 9/8/16 documents indicate that the following test methods to be used include:*

Table 4: Test methods used:

	Synopses of operational test methods
Flow Rate	*EPA Method 19*
H_2CO, NOx CO, O_2 and CO_2	*ASTM D6348-12**, Method 323*
O_2 and CO_2	*EPA Method 3a*
NOx	*Method 7e*
CO	*Method 10*

***MACT ZZZZ and NSPS JJJJ allow the use of ASTM D6348-03. In the future, if Hilcorp intends to use ASTM D6348 they need to use ASTM D6348-03 rather than ASTM D6348-12.*

Table 5: Performance test results:

Test Date	*Engine*	*Serial #*	*% Load*	*Test length/ engine*	*NOx lbs/hr*	*CO lbs/hr*	*H_2CO lbs/hr*	*Pres Drop*	*Inlet Cat Temp*
9/18/17 – 9/19/17	*E001 (#4)*	*C-11100/8*	*84.5*	*3 1-hour*	*3.47*	*0.27*	*0.057*	*3.7*	*707*
	E002 (#2)	*C-10664/2*	*87.5*		*4.43*	*0.12*	*0.064*	*3.4*	*702*
	E003 (#1)	*C-13405/1*	*87*		*4.85*	*0.16*	*0.079*	*1.6*	*716*
	E004(#3)	*C-11542/1*	*81*		*1.98*	*0.12*	*0.088*	*3.81*	*710*
9/8/16	*E001 (#4)*	*C-11100/8*	*80*	*3 1-hour*	*2.72*	*0.26*	*0.073*	*3.9*	*700*
	E002 (#2)	*C-10664/2*	*85*		*2.59*	*0.58*	*0.080*	*5.4*	*689*
	E003 (#1)	*C-13405/1*	*85*		*3.20*	*0.55*	*0.046*	*5.5*	*692*
	E004(#3)	*C-10788/1*	*80*		*2.43*	*0.38*	*0.053*	*6.8*	*699*

9/1/15	E001 (#4)	C-11100/8	92.5	3 1-hour	2.17	0.22	0.045	5.0	724
	E002 (#2)	C-10664/2	86.2		2.58	0.12	0.080	4.8	708
	E003 (#1)	C-13405/1	85.3		2.05	0.23	0.063	9.7	670
	E004(#3)	C-10788/1	91.7		2.29	0.33	0.72	12.3	722
9/17/14	E001 (#4)	C-11100/8	80	3 1-hour	1.69	0.14	0.054	2.0	695
	E002 (#2)	C-10788/1	90		2.01	0.51	0.078	1.0	692
	E003 (#1)	C-13405/1	90		1.92	0.32	0.057	6.0	699
	E004(#3)	C-10664/2	85		1.60	0.23	0.073	5.0	691

(viii) The test plans shall include and address the following elements:

(A) Purpose of the test;
(B) Engines and catalytic control systems to be tested;
(C) Expected engine operating rate(s) during the test;
(D) Sampling and analysis procedures (sampling locations, test methods, laboratory identification);
(E) Quality assurance plan (calibration procedures and frequency, sample recovery and field documentation, chain of custody procedures); and
(F) Data processing and reporting (description of data handling and quality control procedures, report content).

Observations: *On 4/13/16 ConocoPhillips submitted a test plan and monitoring protocol for Sunnyside. Generally, the test plan and monitoring protocol contain the above information. The document indicates that historically performance testing has been conducted in the 3rd quarter and portable monitoring in 1st, 2nd and 4th quarter.*

(e) The Permittee shall notify the EPA at least 30 calendar days prior to scheduled performance testing. The Permittee shall notify the EPA at least 1 week prior to scheduled performance testing if the testing cannot be performed.

Observations: *Generally, Hilcorp (formerly ConocoPhillips) submits notifications of testing as required, except as highlighted below.*

Table 6: Notification of testing:

Notification Date	Test date
No notification	9/6/17
8/18/16 (revised) 7/5/16 (original)	9/6/16 – 9/9/16
7/5/16	9/12/16 – 9/16/16
7/14/15	9/1/15
8/6/14	9/15/14

(f) If the results of a complete and valid performance test of the emissions from any permitted engine demonstrate noncompliance with the emission limits in this permit, the engine shall be shut down as soon as safely possible, and appropriate corrective action shall be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The Permittee shall notify the EPA in writing within 24 hours of each such shut down. The engine must be retested within 7 days of being restarted and the emissions must meet the applicable limits in this permit. If the retest shows

that the emissions continue to exceed the limits in this permit, the engine shall again be shut down as soon as safely possible, and the engine may not operate, except for purposes of startup and testing, until the Permittee demonstrates through testing that the emissions do not exceed the emission limits in this permit.

Observations: *No engines have shown to be non-compliant during testing.*

(g) If a permitted engine is not operating, the Permittee does not need to start up the engine solely to conduct a performance test. The Permittee may conduct the performance test when the engine is started up again.

Observations: *Annual performance tests have been conducted on all engines.*

5. Monitoring Requirements

(a) The Permittee shall continuously monitor the exhaust temperature of each engine at the inlet to the catalyst bed.

Observations: *During the inspection, Ms. Ostrand observed the real-time pre-catalyst inlet temperature being monitored on all operating engines Additionally, in an email dated 6/25/18, Ms. Deal provided the catalyst inlet temperature data recorded between 6/24/16 and 4/30/18 at the 4 engines. Over 60,000 data points were provided for each engine. Additionally, in an email dated 6/19/18, Ms. Deal provided a spreadsheet indicating reasons why temperature data may have been out of range.*

For Engine #'s 1-4, none of the temperature data was greater than 1,350°F.
Engine #1, 67,725 temperature values were reported, 1,537 (or 2.2%) were less than 450°F.
Engine #2, 65,105 temperature values were reported, 3,000 (or 4.6%) were less than 450°F.
Engine #3, 70,659 temperature values were reported, 2,259 (or 3.2%) were less than 450°F.
Engine #4, 61,531 temperature values were reported, 55,714 were less than 450°F.

(b) Except during startups, which shall not exceed 30 minutes, if the engine's exhaust temperature at the inlet to the catalyst bed deviates from the acceptable ranges specified in this permit then the following actions shall be taken. The Permittee's completion of any or all of these actions shall not constitute, nor qualify as, an exemption from any other emission limits in this permit.

(i) Within 24 hours of determining a deviation of the engine exhaust temperature at the inlet to the catalyst bed, the Permittee shall investigate. The investigation shall include testing the temperature sensing device, inspecting the engine for performance problems and assessing the catalytic control system for possible damage that could affect catalytic system effectiveness (including, but not limited to, catalyst housing damage, and fouled, destroyed or poisoned catalyst).

(ii) If the engine exhaust temperature at the inlet to the catalyst bed can be corrected by following the engine manufacturer recommended procedures or equivalent procedures developed by the Permittee or vendor, and the catalytic control system has not been damaged, then the Permittee shall correct the engine exhaust temperature at the inlet to the catalyst bed within 24 hours of inspecting the engine and catalytic control system.

(iii) If the engine exhaust temperature at the inlet to the catalyst bed cannot be corrected using the engine manufacturer recommended procedures or equivalent procedures developed by the Permittee or vendor, or the catalytic control system has been damaged, then the affected engine shall cease operating immediately and shall not be returned to routine service until the following has been met:

(A) The engine exhaust temperature at the inlet to the catalyst bed is measured and found to be within the acceptable temperature range for that engine; and

(B) The catalytic control system has been repaired or replaced, if necessary.

Observations: *See discussion above regarding review of the temperature data provided after the inspection. It's not clear what actions have been taken to address instances when temperature was out of range. As indicated above, a spreadsheet was provided that indicates reasons why the temperature may have been out of range. However, not all of the temperature readings less than 450°F are identified on the spreadsheet.*

(c) The Permittee shall monitor the pressure drop across the catalyst bed on each engine every 30 days using pressure sensing devices before and after the catalyst bed to obtain a direct reading of the pressure drop (also referred to as the differential pressure). *[Note to Permittee: Differential pressure measurements, in general, are used to show the pressure across the filter elements. This information will determine when the elements of the catalyst bed are fouling, blocked or blown out and thus require cleaning or replacement.]*

Observations: *During the inspection, Ms. Ostrand observed the real-time pressure drop being monitored across the catalyst on all operating engines.* ***As of the date of this report the catalyst pressure drop data had not yet been provided to EPA.***

(d) The Permittee shall perform the first measurement of the pressure drop across the catalyst bed on each engine no more than 30 days from the date of the initial performance test. Thereafter, the Permittee shall measure the pressure drop across the catalyst bed, at a minimum, every 30 days. Subsequent performance tests, as required in this permit, can be used to meet the periodic pressure drop monitoring requirements provided it occurs within the 30-day window. The pressure drop reading can be a one-time measurement on that day, the average of performance test runs conducted on that day, or an average of all the measurements taken on that day if continuous readings are taken.

Observations: *See discussion immediately above.*

(e) The Permittee shall measure NO_X and CO emissions from each engine at least quarterly to demonstrate compliance with each engine's emission limits in this permit. To meet this requirement, the Permittee shall:

(i) Measure NO_X and CO emissions at the normal operating load using a portable analyzer and a monitoring protocol approved by the EPA or conduct a performance test as specified in this permit;
(ii) Measure the NO_X and CO emissions simultaneously; and
(iii) Commence monitoring for NO_X and CO emissions within 6 months of the Permittee's submittal of the initial performance test results for NO_X and CO emissions to the EPA.

Observations: *Portable analyzer monitoring results have been submitted. See results in Table 7, below. Quarterly monitoring occurs in the 1st, 2nd, and 4th quarters and annual 3 1-hour performance tests are conducted in the 3rd quarter of the year.*

Table 7: Quarterly portable analyzer monitoring results:

Test Date	*Engine*	*Serial #*	*% Load*	*Test length/ engine*	*NOx lbs/hr*	*CO lbs/hr*	*Pres Drop*	*Inlet Cat Temp*
3/6/18	*E001 (#4)**	*C-11100/8*	*56*	*1 -21-minute*	*1.63*	*0.15*	*1.1*	*850*
	*E002 (#2)**	*C-10664/2*	*56*		*1.04*	*0.66*	*1.1*	*688*
	*E003 (#1)***	*C-13405/1*	*56*		*2.60*	*0.17*	*0.6*	*644*
	*E004 (#3)***	*C-11542/1*	*56*		*1.25*	*0.26*	*0.8*	*698*
12/6/17	*E001 (#4)**	*C-11100/8*	*55*	*1 -21-minute*	*2.05*	*0.15*	*0.1*	*845*
	*E002 (#2)**	*C-10664/2*	*60*		*0.70*	*0.52*	*3.0*	*677*
	*E003 (#1)***	*C-13405/1*	*55*		*2.45*	*0.18*	*0.8*	*639*
	*E004 (#3)***	*C-11542/1*	*60*		*1.41*	*0.23*	*4.7*	*705*
6/6/17	*E001 (#4)**	*C-11100/8*	*53*	*1 -21-minute*	*1.35*	*0.14*	*3.8*	*608*
	*E002 (#2)**	*C-10664/2*	*61*		*1.80*	*0.29*	*5.5*	*608*
	*E003 (#1)***	*C-13405/1*	*53*		*1.78*	*0.39*	*5.1*	*634*
	*E004 (#3)***	*C-11542/1*	*60*		*1.00*	*0.32*	*6.7*	*646*
3/16/17	*E001 (#4)**	*C-11100/8*	*73*	*1 -21-minute*	*2.18*	*0.46*	*3.8*	*0.46*
	*E002 (#2)**	*C-10664/2*	*72*		*2.18*	*0.23*	*5.4*	*679*
	*E003 (#1)***	*C-13405/1*	*75*		*2.76*	*0.34*	*5.5*	*658*
	*E004 (#3)***	*C-11542/1*	*75*		*1.65*	*0.37*	*6.8*	*664*
12/12/16	*E001 (#4)**	*C-11100/8*	*75*	*1 -21-minute*	*1.84*	*0.22*	*3.8*	*NR*
	*E002 (#2)**	*C-10664/2*	*75*		*1.35*	*0.67*	*5.4*	*NR*
	*E003 (#1)***	*C-13405/1*	*75*		*2.16*	*0.35*	*5.5*	*635*
	*E004 (#3)***	*C-11542/1*	*75*		*1.50*	*0.48*	*6.8*	*643*
6/14/16	*E001 (#4)*	*C-11100/8*	*58*	*1 -21-minute*	*2.11*	*0.17*	*2.3*	*889*
	E002 (#2)	*C-10664/2*	*62*		*1.74*	*0.32*	*2.5*	*NR*
	E003 (#1)	*C-13405/1*	*64*		*2.73*	*0.41*	*2.0*	*652*
	E004(#3)	*C-10788/1*	*62*		*2.32*	*0.35*	*7.0*	*644*
3/8/16	*E001 (#4)*	*C-11100/8*	*80*	*1 -21-minute*	*2.48*	*0.20*	*5.0*	*687*
	E002 (#2)	*C-10664/2*	*80*		*1.63*	*0.29*	*3.0*	*673*
	E003 (#1)	*C-13405/1*	*80*		*2.20*	*0.40*	*2.0*	*644*
	E004(#3)	*C-10788/1*	*80*		*2.14*	*0.36*	*3.9*	*651*

** and **, EPA notes that during these portable analyzer monitoring, two engines were monitored*

at the same time. In an email dated 6/25/18, Ms. Deal stated, "CST has a couple of labs with dual sample system capabilities so they are able to test two engines at one time." Attached to Ms. Deal's 6/25/18 email was an email from the testing company also indicating that they have dual sample system capability.
NR = Not reported

(f) The Permittee shall not perform engine tuning or make any adjustments to engine settings, catalytic control system settings, or processes or operational parameters on the day of or during measurements. Any such tuning or adjustments may result in a determination by the EPA that the result is invalid. Artificially increasing an engine load to meet the testing requirements is not considered engine tuning or adjustments.

Observations: *The EPA has not been present during testing. During the record review Ms. Deal indicated that since she's been there she is not aware of any tuning or adjustments being made during testing.*

(g) If the pressure drop reading exceeds ± 2 inches of water from the baseline pressure drop established during the most recent performance test, or if the results of any quarterly emissions monitoring demonstrate non-compliance with the NO_X or CO the emission limits in this permit, then the following actions shall be taken. The Permittee's completion of any or all of these actions shall not constitute, nor qualify as, an exemption from any other emission limits in this permit:

(i) Within 24 hours of determining a deviation of the pressure drop across the catalyst bed or the emission limits in this permit, the Permittee shall investigate. The investigation shall include testing the pressure transducers and assessing the catalytic control system for possible damage that could affect catalytic system effectiveness (including, but not limited to, catalyst housing damage, and plugged, fouled, destroyed or poisoned catalyst).

(ii) If the pressure drop across the catalyst bed or the emission limits in this permit can be corrected by following the catalytic control system manufacturer and/or vendor recommended procedures or equivalent procedures developed by the Permittee or vendor, and the catalytic control system has not been damaged, then the Permittee shall correct the problem within 24 hours of inspecting the catalytic control system.

(iii) If the pressure drop across the catalyst bed or the emission limits in this permit cannot be corrected using the catalytic control system manufacturer and/or recommended procedures or equivalent procedures developed by the Permittee or vendor, or the catalytic control system is damaged, then the Permittee shall do one of the following:

(A) Conduct a performance test within 90 calendar days, as specified in this permit, to ensure that the NO_X, CO, and CH_2O emission limits are being met and to re-establish the pressure drop across the catalyst bed. The Permittee shall measure CO and NO_X emissions using a portable analyzer and a monitoring protocol approved by the EPA to establish a new temporary pressure drop baseline until a

performance test can be scheduled and completed; or

(B) Cease operating the affected engine immediately. The engine shall not be returned to routine service until the pressure drop is measured and found to be within the acceptable pressure range for that engine as determined from the most recent performance test and the emission rates are found to be in compliance with the emission limits in this permit. Corrective action may include removal and cleaning of the catalyst or replacement of the catalyst.

Observations: *The 1/31/18, 3/28/17, 3/31/16, and 3/31/15 annual deviation reports indicate that the "pressure drop across the catalyst bed was not always maintained within ± 2 inches of water during the reporting period. Fluctuations in pressure drop across the catalysts can occur due to changes in engine operating load." The deviation reports indicate that no corrective actions were taken because monthly portable analyzer screenings or tests are conducted and [quarterly] performance tests consistently demonstrate emission limits are being met."* ***As of the date of this report the catalyst pressure drop data had not yet been provided to EPA.***

(h) For any one (1) engine: If the results of 2 consecutive quarterly portable analyzer measurements demonstrate compliance with the NO_X and CO emission limits, the required monitoring frequency may change from quarterly to semi-annually.

Observations: *On 1/31/18 Hilcorp submitted test results and portable monitoring results from the third and fourth quarter 2017. Hilcorps' 1/31/18 letter indicates that they are going to go to semiannual monitoring since they had two quarters of data showing compliance with NOx and CO limits.*

(i) For any one (1) engine: If the results of any subsequent portable analyzer measurements demonstrate non-compliance with the NO_X or CO emission limits, required monitoring frequency shall change from semi-annually to quarterly.

Observations: *To date, no quarterly test results have shown non-compliance with emission limits.*

(j) The Permittee shall submit portable analyzer specifications and monitoring protocols for NO_X and CO to the EPA at the following address for approval at least 45 calendar days prior to the date of initial portable analyzer monitoring:

U.S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

Observations: *A portable analyzer protocol was submitted to EPA on 4/13/16. EPA approved the protocol on 7/12/16. The 4/13/16 submittal indicates that they are using the Wyoming Portable Analyzer Protocol for monitoring.*

(k) Portable analyzer specifications and monitoring protocols that have already been approved by the EPA for the emission units approved in this permit may be used in lieu of new protocols unless the EPA requires the submittal and approval of a new

protocol. The Permittee may submit a new protocol for EPA approval at any time.

(l) The Permittee is not required to conduct emissions monitoring of and parametric monitoring of exhaust temperature and catalyst differential pressure on engines that have not operated during the monitoring period. The Permittee shall certify that the engine(s) did not operate during the monitoring period in the annual report specified in this permit.

Observations: *The annual emissions report identifies the operating hours of the engines. As indicated in the table above, it appears that all engines have been tested quarterly.*

6. Recordkeeping Requirements

(a) Records shall be kept of specifications and maintenance requirements developed by the manufacturer, vendor, or Permittee for each engine, catalytic control system, temperature-sensing device, and pressure-measuring device.

Observations: *During the records review, Ms. Deal indicated that the manufacturer recommended engine maintenance is included in a "Task List" for the engine. Ms. Deal indicated that the catalyst maintenance is also included in the Task Lists. In an email dated 6/6/18, Ms. Deal provided engine and catalyst manufacturer recommended maintenance specifications.*

(b) Records shall be kept of all calibration and maintenance conducted for each engine, catalytic control system, temperature-sensing device, and pressure-measuring device.

Observations: *In an email dated 6/21/18 Ms. Deal provided example preventative maintenance checklists for the 1-month, 2-month, 4-month, 6-month and 1-year preventative maintenance that had been completed. Additionally, Ms. Deal provided a spreadsheet indicating when preventative maintenance, including maintenance on the catalyst, had been conducted 2016, 2017 and 1/2018.*

(c) Records shall be kept that are sufficient to demonstrate that the fuel used for each engine is pipeline-quality natural gas in all respects, with the exception of CO_2 concentrations.

Observations: *In an email dated 6/25/18, Ms. Deal indicated that they perform annual gas analysis to demonstrate that the fuel used for engines is pipeline quality natural gas. Ms Deal's 6/25/18 email contained an email from Adam Eisele, EPA to Sherrie McGowan, ConocoPhillips, where Mr. Eisele indicated that annual natural gas fuel testing was sufficient.*

(d) Records shall be kept of all temperature measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit.

Observations: *Temperature measurement data was provided on request.*

(e) Records shall be kept of all pressure drop measurements required in this permit, as well as a description of any corrective actions taken pursuant to this permit.

Observations: *As of the date of this report the catalyst pressure drop data had not yet been provided to EPA.*

(f) Records shall be kept of all required testing and monitoring in this permit. The records shall include the following:

(i) The date, place, and time of sampling or measurements;
(ii) The date(s) analyses were performed;
(iii) The company or entity that performed the analyses;
(iv) The analytical techniques or methods used;
(v) The results of such analyses or measurements; and
(vi) The operating conditions as existing at the time of sampling or measurement.

Observations: *The performance test reports are submitted to EPA within required timeframes, except as noted above. Quarterly monitoring reports have also been submitted to EPA.*

(g) Records shall be kept of all catalyst replacements or repairs, engine rebuilds and engine replacements.

Observations: ***As of the date of this report the catalyst replacement dates had not yet been provided to EPA.*** *Engine rebuilds and replacement information was provided.*

(h) Records shall be kept of each rebuilt or replaced engine break-in period, pursuant to the requirements of this permit, where an existing engine that has been rebuilt or replaced resumes operation without the catalyst control system, for a period not to exceed 200 operating hours.

Observations: *This information was not reviewed.*

(i) Records shall be kept of each time any engine is shut-down due to a deviation of the inlet temperature to the catalyst bed or pressure drop across the catalyst bed. The Permittee shall include in the record the cause of the problem, the corrective action taken, and the timeframe for bringing the pressure drop and inlet temperature range into compliance.

Observations: *In an email dated 6/25/18, Ms. Deal indicated that to their "knowledge a permitted engine has never been shut down due to deviations of the inlet temperature or catalyst bed or pressure drop across the catalyst bed."*

D. Requirements for Pneumatic Controllers

1. The Permittee shall install, maintain, and operate pneumatic controllers that meet one or more of the following emission control technologies:

(a) Air actuated controllers;
(b) Electronically actuated controllers;
(c) Low-bleed natural gas actuated controllers (no more than 6 standard cubic feet per hour of natural gas); or

(d) No-bleed natural gas actuated controllers.

Observations: *Mr. Minton indicated that all pneumatic controllers were low-bleed or no-bleed controllers. In an email dated 6/29/18, Ms. Deal provided a spreadsheet identifying the types of pneumatic controllers installed at the facility. The pneumatic controllers installed at Sunnyside are identified in Attachment 1.*

2. Each controller shall be operated and maintained according to manufacturer or vendor specifications or equivalent procedures developed by the Permittee or vendor.

3. Beginning with the effective date of this permit, records shall be kept of the date of installation of the controllers, the manufacturer specifications of the controllers or equivalent specifications developed by the Permittee or vendor, and all scheduled maintenance and repairs on the controllers.

Observations: *In an email dated 6/29/18, Ms. Deal provided a spreadsheet identifying the types of pneumatic controllers installed at the facility. Ms. Deal also provided manufacturer literature, or links to manufacturer literature, on the controllers. Ms. Deal indicated that they have no records of the pneumatic controllers needing maintenance or repairs during 5/1/16 – 4/30/18.*

E. Requirements for Leak Detection and Repair (LDAR)

1. The Permittee shall implement a LDAR monitoring program for detecting emissions of volatile organic compound (VOC) emissions due to leaking equipment.

Observations: *Hilcorp (and formerly ConocoPhillips) submits semiannual and annual reports of the LDAR monitoring that occurs at the facility.*

2. The Permittee shall develop a written LDAR protocol that, at a minimum, specifies the following:

(a) The use of an infrared camera for the detection of VOC leaks;
(b) The technical procedures for monitoring with the infrared camera;
(c) A schedule for conducting semiannual monitoring;
(d) Monitoring of "equipment" per the approved LDAR protocol;
(e) A definition of when a "leak" is detected;
(f) A repair schedule for leaking equipment (including delay of repair); and
(g) A recordkeeping format.

Observations*: The LDAR protocol was submitted to EPA on 7/31/12.*

3. The Permittee shall submit the LDAR protocol to the EPA at the following address for approval at least 45 calendar days prior to the date of initial monitoring:

U.S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

4. LDAR protocols that have already been approved by the EPA may be used in lieu of new protocols unless the EPA determines it is necessary to require the submittal and approval of a new LDAR protocol.

5. The Permittee may submit a revised LDAR protocol at any time for EPA approval. The existing LDAR protocol will remain in effect until a revised LDAR protocol is approved by the EPA.

   ***Observations**: The LDAR protocol was submitted to EPA on 7/31/12. Ms. Deal also provided a copy of the protocol on 6/25/18. Neither Ms. Deal nor Ms. Ostrand could find a copy of EPA's approval. However, the 7/31/12 letter submitting the Argenta and Sunnyside Compressor Station LDAR protocol indicates the protocol submitted on 7/31/12 was the same at the Ute LDAR CDP LDAR protocol which was approved in a 5/24/12 email from EPA.*

6. In the event that the EPA determines that the LDAR monitoring program is not meeting its intended goals, the Permittee shall submit a revised LDAR protocol upon request by the EPA.

   ***Observations**: EPA has not determined that the LDAR monitoring program is not meeting its intended goals.*

7. Leak detection monitoring shall commence upon approval of the LDAR protocol by the EPA.

   ***Observations**: The LDAR protocol was submitted to EPA on 7/31/12. Based on LDAR reports submitted, LDAR monitoring is being conducted.*

8. LDAR monitoring shall be conducted at least semi-annually in accordance with an approved LDAR protocol and shall be conducted a minimum of 5 calendar months apart.

   ***Observations**: Hilcorp (formerly ConocoPhillips) submits semiannual and annual reports of the LDAR monitoring that is conducted. According to the semiannual reports, monitoring has been conducted on: 4/9/18; 9/13/17; 3/13/17; 9/13/16; 3/7/16; 9/1/15; 3/10/15; 9/9/14; and 3/18/14.*

9. The Permittee shall notify the EPA in writing at least 30 calendar days prior to any LDAR monitoring conducted. If monitoring cannot be performed on the scheduled date, the Permittee shall notify EPA at least 1 week prior to the scheduled date and reschedule the monitoring to satisfy the monitoring frequency requirements.

   ***Observations:** Hilcorp (formerly ConocoPhillips) submits notices of LDAR monitoring to be conducted. Notices have been submitted on: 3/9/18; 8/7/17; 2/9/17; 7/5/16; 1/15/16; and 7/22/15.*

10. The Permittee shall maintain a record of all EPA approved LDAR protocols.

    ***Observations**: During the records review, EPA observed the LDAR Protocol on file. Neither Ms. Deal nor Ms. Ostrand could find a copy of EPA's approval. However, the*

7/31/12 letter submitting the Argenta and Sunnyside Compressor Station LDAR protocol indicates the protocol submitted on 7/31/12 was the same at the Ute LDAR CDP LDAR protocol which was approved in a 5/24/12 email from EPA.

11. The Permittee shall maintain a record of the results of all LDAR monitoring and any necessary equipment repairs due to VOC leaks.

***Observations**: Hilcorp (formerly ConocoPhillips) submits semiannually and annually the results of all LDAR monitoring. The LDAR reports identify equipment leaks and repairs.*

F. Requirements for Records Retention

1. The Permittee shall retain all records required by this permit for a period of at least 5 years from the date the record was created.

***Observations:** Records for the previous two years were reviewed by Ms. Ostrand.*

2. Records shall be kept in the vicinity of the facility, such as at the facility, the location that has day-to-day operational control over the facility, or the location that has day-to-day responsibility for compliance of the facility.

***Observations:** Records were reviewed a Hilcorp's offices in Aztec, NM located somewhat near Sunnyside. Ms. Deal submitted additional records upon request.*

G. Requirements for Reporting

1. Annual Emission Reports

(a) The Permittee shall submit a written annual report of the actual annual emissions from all emission units at the facility covered under this permit; including emissions from start-ups, shutdowns, and malfunctions, each year no later than April 1st. The annual report shall cover the period for the previous calendar year. All reports shall be certified to truth and accuracy by the person primarily responsible for Clean Air Act compliance for the Permittee.

***Observations:** Annual emissions reports have been submitted, and show facility-wide emissions (tpy), as follows:*

Table 8: Reported annual emissions

Report Date	*Year*	*NOx**	*CO**	*VOC**	*PM**	*SO_2**	*CH_2O**	*Benzene*	*Total HAPs**
1/23/18	*2017*	*70.58*	*17.60*	*10.89*	*1.57*	*2.34*	*1.34*	*0.23*	*7.10*
3/28/17	*2016*	*71.63*	*17.85*	*10.95*	*1.60*	*2.37*	*1.36*	*0.23*	*7.12*
3/31/16	*2015*	*89.06*	*22.03*	*11.92*	*1.97*	*2.93*	*1.70*	*0.23*	*7.51*
3/31/15	*2014*[5]	*44.86*	*11.09*	*5.93*	*0.99*	*1.47*	*0.86*	*0.11*	*3.72*

**NOx = nitrogen oxide; CO = carbon monoxide; VOC = volatile organic compound; PM = particulate matter; SO_2 = sulfur dioxide; CH_2O = formaldehyde; HAP = hazardous air pollutant.*

[5] For period from July 5, 2014 through December 31, 2014.

(b) The report shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Partnerships and Regulatory Assistance
Tribal Air Permitting Program, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

The report may be submitted via electronic mail to r8AirPermitting@epa.gov.

2. All other documents required to be submitted under this permit, with the exception of the Annual Emission Reports, shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

All documents may be submitted electronically to r8airreportenforcement@epa.gov.

3. The Permittee shall submit a written LDAR monitoring report each year no later than April 1st. The annual report shall include the semi-annual LDAR monitoring results for the previous calendar year, including any necessary equipment repairs due to VOC leaks.

***Observations**: Hilcorp (formerly ConocoPhillips) submits annual reports of the LDAR monitoring that is conducted. Annual reports have been submitted on: 1/30/18; 3/28/17; 2/11/16; and 2/12/15.*

4. The Permittee shall promptly submit to the EPA a written report of any deviations of permit requirements and a description of the probable cause of such deviations and any corrective actions or preventative measures taken. A "prompt" deviation report is one that is post marked or submitted via electronic mail to r8airreportenforcement@epa.gov as follows:

(a) Within 30 days from the discovery of any deviation of the emission or operational limits that is left un-corrected for more than 5 days after discovering the deviation;

(b) By April 1st for the discovery of a deviation of recordkeeping or other permit conditions during the preceding calendar year that do not affect the Permittee's ability to meet the emission limits.

***Observations**: Hilcorp (formerly ConocoPhillips) submits has submitted annual deviation reports as follows:*

Report Date	*Deviations noted*
1/31/18	• *Failing to meet engine pressure drop requirements* • *Failing to notify EPA prior to testing* • *Failing to submit test report within 60 days.*
3/28/17	• *Failing to meet engine pressure drop requirements* • *Performance test conducted on 3/8/16 and 6/14/16 consisted of one 21-minute run in lieu of three 1-hour runs per COP's updated test protocol dated 4/11/16 that was approved by EPA on 7/12/16.* • *Failing to notify 30-days before 12/12/16 test.*
3/31/16	• *Failing to meet engine pressure drop requirements* • *Performance test conducted on 6/2/15, and 12/8/15 consisted of two 20-minute run in accordance with previous Title V permit in lieu of three 1-hour runs as required in the current permit. The vendor inadvertently conducted the performance testing based on previous permit requirements.* • *Failing to notify 30-days before 6/2/15 test.*
3/31/15	• *Failing to meet engine pressure drop requirements.* • *Performance test conducted on 12/18/14 consisted of one 20-minute run in lieu of three 1-hour runs as required in the current permit. The vendor inadvertently conducted the performance testing based on previous permit requirements.* • *Failing to notify 30-days before 12/18/14 testing.*

5. The Permittee shall submit a written report for any required performance tests to the EPA Regional Office within 60 days after completing the tests.

***Observations**: Generally, Hilcorp (formerly ConocoPhillips) submits reports as required, except as highlighted below.*

Date of testing	*Date report submitted*
9/18/17	*1/31/18*
9/8/16	*9/20/16*
9/1/15	*10/1/15*
9/17/14	*10/24/14*

6. The Permittee shall submit any record or report required by this permit upon EPA request.

***Observations**: Following the onsite inspection, Ms. Ostrand requested multiple documents. Ms. Deal provided the information as requested.*

IX. Subpart OOOO Requirements:

A. 40 CFR § 60.5365 Am I subject to this subpart?

You are subject to the applicable provisions of this subpart if you are the owner or operator of one or more of the onshore affected facilities listed in paragraphs (a) through (g) of this section for

which you commence construction, modification or reconstruction after August 23, 2011, and on or before September 18, 2015.

(a), (b), (d) – (h) *Do not apply to Sunnyside.*

(c) Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

Observations: *On 1/7/16 and 1/12/17, ConocoPhillips sent annual Subpart OOOO reports. The reports indicate that reciprocating compressor #4 (S/N F-09738) is subject to Subpart OOOO.*

B. 40 CFR § 60.5385 What standards apply to reciprocating compressor affected facilities?

You must comply with the standards in paragraphs (a) through (d) of this section for each reciprocating compressor affected facility.

(a) You must replace the reciprocating compressor rod packing according to either paragraph (a)(1) or (2) of this section or you must comply with paragraph (a)(3) of this section.

(1) Before the compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning upon initial startup of your reciprocating compressor affected facility, or October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.

(2) Prior to 36 months from the date of the most recent rod packing replacement, or 36 months from the date of startup for a new reciprocating compressor for which the rod packing has not yet been replaced.

(3) Collect the emissions from the rod packing using a rod packing emissions collection system which operates under negative pressure and route the rod packing emissions to a process through a closed vent system that meets the requirements of §60.5411(a).

Observations*: The 1/7/16 and 1/12/17 annual reports indicate that the compliance method selected was to replace the rod packing every 36 months.*

(b) You must demonstrate initial compliance with standards that apply to reciprocating compressor affected facilities as required by §60.5410.

Observations*: The 1/7/16 and 1/12/17 annual reports appear to indicate that compressor started up, or the previous rod replacement, was in July 2015.*

(c) You must demonstrate continuous compliance with standards that apply to reciprocating compressor affected facilities as required by §60.5415.

(d) You must perform the required notification, recordkeeping, and reporting as required by §60.5420.

C. 40 CFR § 60.5410 How do I demonstrate initial compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, *my reciprocating compressor affected facility*, my pneumatic controller affected facility, my storage vessel affected facility, and my equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?

You must determine initial compliance with the standards for each affected facility using the requirements in paragraphs (a) through (i) of this section. The initial compliance period begins on October 15, 2012, or upon initial startup, whichever is later, and ends no later than one year after the initial startup date for your affected facility or no later than one year after October 15, 2012. The initial compliance period may be less than one full year.

(a), (b), and (d) – (h) *Do not apply to Ute.*

(c) To achieve initial compliance with the standards for each *reciprocating compressor* affected facility you must comply with paragraphs (c)(1) through (4) of this section.

(1) If complying with §60.5385(a)(1) or (2), during the initial compliance period, you must continuously monitor the number of hours of operation or track the number of months since the last rod packing replacement.

Observations: *Based on the annual reports submitted, it appears that Hilcorp is keeping records of rod replacement.*

(2) If complying with §60.5385(a)(3), *Does not apply to Ute*

(3) You must submit the initial annual report for your reciprocating compressor as required in §60.5420(b).

Observations: *Based on information submitted by Ms. Deal, the #4 compressor was installed on 7/20/15. Therefore, the 1/7/16 annual report should have been the initial report.*

(4) You must maintain the records as specified in §60.5420(c)(3) for each reciprocating compressor affected facility.

Observations: *Based on the annual reports submitted, it appears that Hilcorp is keeping records of rod replacement.*

D. 40 CFR § 60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary *reciprocating compressor* affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?

(a), (b), and (d) – (g) *Do not apply to Ute*

(c) For each reciprocating compressor affected facility complying with §60.5385(a)(1) or (2), you must demonstrate continuous compliance according to paragraphs (c)(1) through (3) of this section. For each reciprocating compressor affected facility complying with §60.5385(a)(3), you must demonstrate continuous compliance according to paragraph (c)(4) of this section.

(1) You must continuously monitor the number of hours of operation for each reciprocating compressor affected facility or track the number of months since initial startup, or October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.

(2) You must submit the annual report as required in §60.5420(b) and maintain records as required in §60.5420(c)(3).

(3) You must replace the reciprocating compressor rod packing before the total number of hours of operation reaches 26,000 hours or the number of months since the most recent rod packing replacement reaches 36 months.

(4) You must operate the rod packing emissions collection system under negative pressure and continuously comply with the closed vent requirements in §60.5416(a) and (b).

Observations: *The 1/7/16 and 1/12/17 annual reports indicate that the compliance method selected was to replace the rod packing every 36 months.*

E. 40 CFR § 60.5420 What are my notification, reporting, and recordkeeping requirements?

(a) You must submit the notifications according to paragraphs (a)(1) and (2) of this section if you own or operate one or more of the affected facilities specified in §60.5365 that was constructed, modified, or reconstructed during the reporting period.

(1) If you own or operate a gas well, pneumatic controller, centrifugal compressor, *reciprocating compressor* or storage vessel affected facility you are not required to submit the notifications required in §60.7(a)(1), (3), and (4).

(2) *Does not apply to Ute.*

(b) Reporting requirements. You must submit annual reports containing the information specified in paragraphs (b)(1) through (6) of this section to the Administrator and performance test reports as specified in paragraph (b)(7) or (8) of this section. The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to §60.5410. Subsequent annual reports are due no later than same date each year as the initial annual report. If you own or operate more than one affected facility, you may submit one report for multiple affected facilities provided the report contains all of the information required as specified in paragraphs (b)(1) through (6) of this section. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. You may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

(1) The general information specified in paragraphs (b)(1)(i) through (iv) of this section.

(i) The company name and address of the affected facility.

(ii) An identification of each affected facility being included in the annual report.

(iii) Beginning and ending dates of the reporting period.

(iv) A certification by a certifying official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(2), (3), (5) – (7) *Do not apply to Ute.*

(4) For each reciprocating compressor affected facility, the information specified in paragraphs (b)(4)(i) through (ii) of this section.

(i) The cumulative number of hours of operation or the number of months since initial startup, since October 15, 2012, or since the previous reciprocating compressor rod packing replacement, whichever is later.

(ii) Records of deviations specified in paragraph (c)(3)(iii) of this section that occurred during the reporting period. [(c)(3)(iii) – see below].

***Observations**: Annual reports were submitted on 1/7/16 and 1/12/17. An annual report was not submitted in 1/2018. Ms. Deal indicted that Hilcorp would file this report and get it submitted. Prior annual reports indicate that the compliance method selected was to replace the rod packing*

(c) Recordkeeping requirements. You must maintain the records identified as specified in §60.7(f) and in paragraphs (c)(1) through (14) of this section. All records required by this subpart must be maintained either onsite or at the nearest local field office for at least 5 years.

(1), (2), (4), (5)– (14) *Do not apply to Ute.*

(3) For each reciprocating compressors affected facility, you must maintain the records in paragraphs (c)(3)(i) through (iii) of this section.

(i) Records of the cumulative number of hours of operation or number of months since initial startup or October 15, 2012, or the previous replacement of the reciprocating compressor rod packing, whichever is later.

(ii) Records of the date and time of each reciprocating compressor rod packing replacement, or date of installation of a rod packing emissions collection system and closed vent system as specified in §60.5385(a)(3).

(iii) Records of deviations in cases where the reciprocating compressor was not operated in compliance with the requirements specified in §60.5385.

***Observations:** The 1/7/16 and 1/12/17 annual reports indicate that the compliance method selected was to replace the rod packing every 36 months.*

X. MACT ZZZZ Requirement:

Hilcorp has indicated that the engines at Sunnyside are consider remote designated engines in accordance with NESHAP ZZZZ practices.

A. 40 C.F.R. § 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you. *[Note 2b does not apply to Sunnyside's engines.]*.

Table 2d - Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

8. For each Non-emergency, non-black start 4SLB and 4SRB remote stationary RICE >500 HP You must meet the following requirement, except during periods of startup:
a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[6]
b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and
c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary

(b) through (e) *do not apply to Sunnyside*.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in §63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in §63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in §63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

Observations: *EPA observed the initial and annual remote determinations during the records reviews.*

[6] Sources have the option to utilize an oil analysis program as described in §63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

B. § 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in *Table 6* to this subpart.

Table 6 - Continuous Compliance With Emission Limitations, and Other Requirements

9. Existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are *remote stationary RICE*

a. Work or Management practices

i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or

ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

(b) – (d), and (f) *do not apply to Sunnyside.*

(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you.

Observations: *During the records review, Ms. Deal indicated that the manufacturer recommended engine maintenance is included in a "Task List" for the engine. Ms. Deal indicated that the catalyst maintenance is also included in the Task Lists. In an email dated 6/6/18, Ms. Deal provided engine and catalyst manufacturer recommended maintenance specifications. In an email dated 6/21/18 Ms. Deal provided example preventative maintenance checklists for the 1-month, 2-month, 4-month, 6-month and 1-year preventative maintenance that had been completed. Additionally, Ms. Deal provided a spreadsheet indicating when preventative maintenance had been conducted in 2016, 2017 and 1/2018. The records indicate that the oil and oil filter is inspected or replaced, and the spark plugs and belts inspected or replaced, regularly.*

C. 63.6655 What records must I keep?

(a) –(d) and (f) *Do not apply to Sunnyside.*

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) and (2) *Do not apply to Sunnyside.*

(3) An existing stationary RICE located at an area source of HAP emissions subject to the management practices as shown in Table 2d to this subpart.

Observations: *See discussion above.*

D. **§ 63.6675 What definitions apply to this subpart**

Remote stationary RICE means stationary RICE meeting any of the following criteria:
(1) Stationary RICE located in an offshore area … *Does not apply to Sunnyside.*

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25-mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Observations: *EPA observed the initial and annual remote determinations during the records reviews.*

XI. MACT HH Requirements:

A. 40 CFR § 63.764 General standards.

(e) Exemptions. (1) The owner or operator of an area source is exempt from the requirements of paragraph (d) [glycol dehydration standards] of this section if the criteria listed in paragraph (e)(1)(i) or (ii) of this section are met, except that the records of the determination of these criteria must be maintained as required in §63.774(d)(1).

(i) The actual annual average flowrate of natural gas to the glycol dehydration unit is less than 85 thousand standard cubic meters per day, as determined by the procedures specified in §63.772(b)(1) of this subpart; or

(ii) The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year, as determined by the procedures specified in §63.772(b)(2) of this subpart.

Observations: *In an email dated 5/29/18, Ms. Deal provided Sunnyside GLYCalc runs dated 3/21/18 and 9/14/16 and an extended gas analysis with a sample date of 12/14/17. The 3/21/18 GLYCalc run uses the gas concentrations from the 12/14/17 extended gas analysis. The 12/14/17 GLYCalc run uses Lean Glycol rate as 2.0 gpm and Dry Gas flow rate as 12.7 MMSCF/day and calculates benzene emissions to be as follows: Uncontrolled regenerator – 0.1789 tpy and Flash Tank emissions to be – 0.0074 tpy.*

Ms. Ostrand reran the 3/21/18 GLYCal run using the same information in Hilcorp's 3/21/18 GLYCalc runs except increasing the lean Glycol flow rate to 6.6 gpm[7]. The resultant benzene emissions were as follows: Uncontrolled regenerator – 0.4895 tpy and Flash Tank emissions to be – 0.0189 tpy.

The 9/14/16 GLYCalc run indicates that there was no benzene in the wet gas. Therefore, zero benzene emissions were calculated from GLYCalc. In a subsequent email on 5/29/18, Ms. Deal provided a copy of the extended gas analysis used for the 9/14/16 GLYCalc run.

B. 40 CFR § 63.772 Test methods, compliance procedures, and compliance demonstrations.

(b) Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions. The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions.

(1) The determination of actual flowrate of natural gas to a glycol dehydration unit shall be made using the procedures of either paragraph (b)(1)(i) or (b)(1)(ii) of this section.

(i) The owner or operator shall install and operate a monitoring instrument that

[7] *Information observed on the pump during the inspection indicated that the maximum flow rate is 200 gal/min [=3.3 gpm] and the max strokes are 33/min. In an email dated 6/6/18, Ms. Deal provided information indicating that the Sunnyside dehydrators uses Kimray pump model #20015. Information from Kimray literature (https://kimray.com/documents/Catalog_Pages/PB_0004.pdf) indicate that the maximum pump rate for model #20015 is 200 gallons per hour [=3.3 gpm]. Since there were two pumps onsite, Ms. Ostrand doubled the pump maximum gpm.*

directly measures natural gas flowrate to the glycol dehydration unit with an accuracy of plus or minus 2 percent or better. The owner or operator shall convert annual natural gas flowrate to a daily average by dividing the annual flowrate by the number of days per year the glycol dehydration unit processed natural gas.

(ii) The owner or operator shall document, to the Administrator's satisfaction, the actual annual average natural gas flowrate to the glycol dehydration unit.

(2) The determination of actual average benzene or BTEX emissions from a glycol dehydration unit shall be made using the procedures of either paragraph (b)(2)(i) or (ii) of this section. Emissions shall be determined either uncontrolled, or with federally enforceable controls in place.

(i) The owner or operator shall determine actual average benzene or BTEX emissions using the model GRI-GLYCalcTM, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalcTM Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1); or

(ii) The owner or operator shall determine an average mass rate of benzene or BTEX emissions in kilograms per hour through direct measurement using the methods in §63.772(a)(1)(i) or (ii), or an alternative method according to §63.7(f). Annual emissions in kilograms per year shall be determined by multiplying the mass rate by the number of hours the unit is operated per year. This result shall be converted to megagrams per year.

Observations: *See discussion immediately above.*

C. 40 CFR § 63.774 Recordkeeping requirements.

(d)(1) An owner or operator of a glycol dehydration unit that meets the exemption criteria in §63.764(e)(1)(i) or §63.764(e)(1)(ii) shall maintain the records specified in paragraph (d)(1)(i) or paragraph (d)(1)(ii) of this section, as appropriate, for that glycol dehydration unit.

(i) The actual annual average natural gas throughput (in terms of natural gas flowrate to the glycol dehydration unit per day) as determined in accordance with §63.772(b)(1), or

(ii) The actual average benzene emissions (in terms of benzene emissions per year) as determined in accordance with §63.772(b)(2).

Observations: *Ms. Ostrand requested the extended gas analyses used for GLYCalc runs and the last two GLYCalc runs. The information was provided.*

XII. Closing meeting:

We left the facility at 2:30 pm. On May 15, 2018, we went to Hilcorp's offices for a record review. We arrived at 10:28 am and left at 1:20 pm. Ms. Ostrand indicated that she would be requesting additional information.

XIII. Findings:

As of the date of this inspection report, not all needed information was provided. Once all information is received EPA will issues an addendum to this report. EPA is still waiting to receive catalyst replacement information and catalyst pressure drop readings, both from 5/1/16 to 4/30/18.

- *If ASTM D6348 is going to be used for performance testing, the performance test protocol should be revised to assure that ASTM D6348-03 is used rather than ASTM D6348-12.*
- *Based on the information provided, it's not clear whether all appropriate actions have been taken when engine pre-catalyst temperature falls below 405°F;*
- *It appears that a performance test was not conducted within 90 calendar days after engine #2 was rebuilt in 3/2017..*
- *When Hilcorp initially purchased Sunnyside they were late in submitting performance test results and failed to notify EPA of upcoming testing. This issue has since been resolved.*
- *Annual deviation reports indicate that the pressure drop across engine catalysts haven't always met permit requirements. It's not clear whether all appropriate actions have been taken when this has occurred. As of the date of this report the pressure drop data had not been provided to the EPA.*
- *The annual NSPS OOOO report was not submitted in 2018.*

XIV. Picture/IR Video Log:

Table 11 – Picture Log

Image #	*Photographer*	*Date and Time*	*Description*
RIMG0001.JPG	*Laurie Ostrand*	*5/14/18; 1:37 pm*	*Sunnyside CS, pig inlet on right*
RIMG0002.JPG	*Laurie Ostrand*	*5/14/18; 1:37 pm*	*Sunnyside CS, 3 tanks, 2 on right are produced water, facility dump tank on left.*
RIMG0003.JPG	*Laurie Ostrand*	*5/14/18; 1:38 pm*	*Sunnyside CS scrubber*
RIMG0004.JPG	*Laurie Ostrand*	*5/14/18; 1:44 pm*	*Sunnyside CS compressor building*
RIMG0005.JPG	*Laurie Ostrand*	*5/14/18; 1:58 pm*	*Engine #1 catalyst part of muffler*
RIMG0006.JPG	*Laurie Ostrand*	*5/14/18; 1:58 pm*	*Sunnyside CS. Engine #4 muffler and catalyst*
RIMG0007.JPG	*Laurie Ostrand*	*5/14/18; 2:15 pm*	*Sunnyside CS, Dehy pumps*
RIMG0008.JPG	*Laurie Ostrand*	*5/14/18; 2:16 pm*	*Sunnyside CS Dehy reboiler on right and contactor on left*

Table 12 – FLIR Video Log

Video #	**Photographer**	**Date and Time**	**Description**
0213_SunnySide Tank Leak.mp4	*David Heermance*	*5/14/18; 1:40 pm*	*Appears to be leak from valve on top of tank.*
0214_Sunnyside	*David*	*5/14/18; 1:50 pm*	*Appears to be leak on controller on*

E1 controller.mp4	*Heermance*		*engine E1,*
0215_SunnySide E1 Controller.mp4	*David Heermance*	*5/14/18; 1:52 pm*	*Appears to be leak on control valve leaking to engine E1.*
0216_SunnySide E2 controller.mp4	*David Heermance*	*5/14/18; 1:59 pm*	*Appears to be leak on controller on engine E2.*
0217_SunnySide E2 connection Leak.mp4	*David Heermance*	*5/14/18; 2:03 pm*	*Appears to be leak on a connection on engine E2.*
0218_SunnySide E2 engine leak.mp4	*David Heermance*	*5/14/18; 2:05 pm*	*Appears to be leak on engine E2.*
0219_SunnySide E3 controller.mp4	*David Heermance*	*5/14/18; 2:07 pm*	*Appears to be leak on controller on engine E3.*
0220_SunnySide Dehy Still vent emissions.mp4	*David Heermance*	*5/14/18; 2:29 pm*	*Appears to be leak on dehy still vent.*

Attachment 1 Pneumatics at Sunnyside

PropertyID	EQUIP_ID	EQUIP_DESC	FL_NAME	MFG_MAKE_MODEL	PneumControllerFunction	PneumControllerType	installDate
30FAC00007	0	STANDALONE CONTROLLER	SUNNYSIDE CDP	ASCO EF 8314 G301	Solenoid valve	Intermittent Bleed Pneumatic Devices	Pre-2006
30FAC00007	10463732	TANK,WATER,300BBL	SUNNYSIDE CDP	KIMRAY T12	Temperature controller	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	10466078	DEHYDRATOR,GLYCOL, W/REBOILER,ABSORBER	SUNNYSIDE CDP	KIMRAY T12	Temperature controller	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	10466078	DEHYDRATOR,GLYCOL, W/REBOILER,ABSORBER	SUNNYSIDE CDP	KIMRAY T12	Temperature controller	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	10466078	DEHYDRATOR,GLYCOL, W/REBOILER,ABSORBER	SUNNYSIDE CDP	NORRISEAL 1001A	Level	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	10466078	DEHYDRATOR,GLYCOL, W/REBOILER,ABSORBER	SUNNYSIDE CDP	NORRISEAL 1001A	Level	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	10466079	SEP,VERT,2PH	SUNNYSIDE CDP	KIMRAY GEN II LLC Back Mount	Float operated level controller	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	10466079	SEP,VERT,2PH	SUNNYSIDE CDP	KIMRAY T12	Temperature controller	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	11282954	TANK,WATER,500BBL	SUNNYSIDE CDP	KIMRAY T12	Temperature controller	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	11381614	TANK,WATER,500BBL	SUNNYSIDE CDP	KIMRAY T12	Temperature controller	Intermittent Bleed Pneumatic Devices	Pre-2011
30FAC00007	11639503	PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK/4(#1)	SUNNYSIDE CDP	MURPHY L1200	Level - Electric	Intermittent Bleed Pneumatic Devices	Pre-2006
30FAC00007	11639503	PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK/4(#1)	SUNNYSIDE CDP	MURPHY LS200N	Level	Intermittent Bleed Pneumatic Devices	Pre-2006

30FAC00007	*11639508*	*PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK/4(#2)*	*SUNNYSIDE CDP*	*MURPHY L1200*	*Level - Electric*	*Intermittent Bleed Pneumatic Devices*	*Pre-2006*
30FAC00007	*11639508*	*PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK/4(#2)*	*SUNNYSIDE CDP*	*MURPHY LS200N*	*Level*	*Intermittent Bleed Pneumatic Devices*	*Pre-2006*
30FAC00007	*11639509*	*PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK-4(#3)*	*SUNNYSIDE CDP*	*MURPHY L1200*	*Level - Electric*	*Intermittent Bleed Pneumatic Devices*	*Pre-2006*
30FAC00007	*11639509*	*PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK-4(#3)*	*SUNNYSIDE CDP*	*MURPHY LS200N*	*Level*	*Intermittent Bleed Pneumatic Devices*	*Pre-2006*
30FAC00007	*11639510*	*PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK/4(#4)*	*SUNNYSIDE CDP*	*KIMRAY GEN II LLC Back Mount*	*Float operated level controller*	*Intermittent Bleed Pneumatic Devices*	*7/20/2015*
30FAC00007	*11639510*	*PKG,CMP,WAUKESHA ,L7042GL,ARIEL,JGK/4(#4)*	*SUNNYSIDE CDP*	*MURPHY L1200*	*Level - Electric*	*Intermittent Bleed Pneumatic Devices*	*7/20/2015*
30FAC00007	*11639510*	*PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK/4(#4)*	*SUNNYSIDE CDP*	*MURPHY L1200*	*Level - Electric*	*Intermittent Bleed Pneumatic Devices*	*7/20/2015*
30FAC00007	*11639510*	*PKG,CMP,WAUKESHA, L7042GL,ARIEL,JGK/4(#4)*	*SUNNYSIDE CDP*	*MURPHY LS200N*	*Level*	*Intermittent Bleed Pneumatic Devices*	*7/20/2015*