

# Bureau of Land Management

## Amarillo Field Office Helium Operations Statistical Report for

October - 2017



### *Distribution:*

Fluid Minerals Group Manager, Washington Office  
NMSO, New Mexico State Director  
NMSO, Associate State Director  
NMSO, Petroleum Engineer  
Field Manager, Amarillo Field Office  
Assistant Field Managers (3)  
Team Leaders  
-Federal Leased Lands  
-Resources Evaluation & Gas Analysis  
-Division Of Helium Operations, -  
Engineering and Technical Support

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*Compi* Amarillo, Texas

Issued: August 20, 2018

**"Please Note: Data in this report is accurate as of print date; however all data is subject to change."**

Approved for Distribution: Samuel R.M. Burton

Date: August 20, 2018

## Table 1 - Summary of Helium Operations

October - 2017

### Helium Enrichment Unit Operations

#### Gas Processed

	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	553,229	90,238	16.31%	553,229	90,238
Helium Product (Mcf*)	120,578	89,546	74.26%	120,578	89,546
Residue Natural Gas (Mcf*)	298,295	0	00.00%	298,295	0

\* Volumes in Mcf at 14.65 psia & 60°F

### Natural Gas & Liquids Produced

#### Gas Processed

	Month	FYTD
Natural Gas Sales (Mcf***)	295,987	295,987
NGL Sales (gallons)	101,975	101,975

\*\*\* Volumes in Mcf at 14.73 psia & 60°F

### Bush Dome Reservoir Operations

#### Conservation gases from all sources

	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Total Withdrawn (Mcf*)	564,283	92,038	16.31%	564,283	92,038
Crude Injection (Mcf*)	0	0	00.00%	0	0
Crude Production (Mcf*)	0	0	00.00%	0	0

\* Volumes in Mcf at 14.65 psia & 60°F

### Storage Operations

#### Conservation Helium

	Volume Outstanding	Month	FYTD	CYTD	Cumulative
Conservation Crude Sale Volume Sold/Paid (Mcf*)		0	0	885,002	22,779,063
Conservation Crude Sale Volume Transferred (Mcf*)	0	0	0	900,002	22,837,731
Conservation Helium in Storage (EOM) (Mcf*)		3,474,343			

\* Volumes in Mcf at 14.65 psia & 60°F

#### In Kind Helium

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	0	0	100,110	3,525,163
Sale Volumes Outstanding (Mcf*)	34,789			

\* Volumes in Mcf at 14.65 psia & 60°F

### Private Company Helium Storage Contracts

#### Contact Activity

	Month Gross Volume	Month Net Helium	Average Percent	Annual Helium FYTD
Crude Acquired (Mcf*)	19,080	12,635	66.22%	12635
Crude Disposed (Mcf*)	137,625	100,687	73.16%	100687
Net Balance (Mcf*)	(118,545)	(88,052)		(88,052)
Balance of Stored Helium End Of Month (Mcf*)		3,553,693		

\* Volumes in Mcf at 14.65 psia & 60°F

### Revenue / Charges

#### Helium Storage Contracts

(Charges Billed (\$))

	Month	FYTD
Storage Fees Billed (\$)	\$576,000	\$576,000
Reservoir Management Fees Billed (\$)	\$0	\$0

#### Enrichment Unit Charges

(Charges Billed (\$))

	Month	FYTD
Reservoir Management Fees (RMF)	\$0	\$0
Total operating costs	(\$915,266)	(\$915,266)
Sub Total - Items provided by BLM	\$350,325	\$350,325
Total - Cliffside Refiners, LP, GDA030001	(\$564,941)	(\$564,941)

#### Conservation Helium - Natural Gas - Liquid Sales

(Charges Billed (\$))

	Month	FYTD
Conservation Crude Helium Sales	\$0	\$0
In Kind Sales	\$0	\$0
Natural Gas & Liquid Sales	\$883,015	\$883,015

#### Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$1,548,529	\$1,548,529
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 15

\*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

October - 2017

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane	Methane	Ethane plus		Other (CO2, Ar, H2)	
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
<b>TOTAL</b>		<b>564,283</b>	<b>232,984,541</b>	<b>92,038</b>	<b>43,425,619</b>	<b>140,645</b>	<b>57,430,791</b>	<b>294,465</b>	<b>118,190,621</b>	<b>31,763</b>	<b>11,974,950</b>	<b>5,371</b>	<b>1,962,560</b>
BIVINS A-3	Oct-17	0	10,961,112	0	3,548,629	0	2,772,147	0	4,159,384	0	407,301	0	73,653
BIVINS A-6	Oct-17	51,418	12,165,618	22,743	7,144,404	12,797	2,992,008	14,006	1,791,699	1,487	178,591	384	58,918
BIVINS A-13	Oct-17	36,335	9,023,810	11,856	4,640,658	9,018	2,315,909	13,655	1,812,656	1,533	201,541	272	53,045
BIVINS A-14	Oct-17	42,598	10,189,011	12,209	5,688,830	10,438	2,578,629	17,656	1,677,917	1,912	181,670	383	61,965
BIVINS A-4	Oct-17	41,464	14,106,108	4,725	2,461,698	10,079	3,417,632	23,750	7,359,146	2,463	741,020	447	126,612
BUSH A-2	Oct-17	45,772	13,853,603	3,451	2,010,601	11,535	3,401,516	27,388	7,549,259	3,084	777,562	314	114,665
Injection	Oct-17	0	66,474,735	0	48,019,788	0	17,121,580	0	780,676	0	37	0	552,655
inj Bivins A-3	Oct-17	0	(25,652,315)	0	(18,384,452)	0	(6,554,549)	0	(332,777)	0	0	0	(380,537)
inj Bivins A-6	Oct-17	0	(24,412,686)	0	(17,669,978)	0	(6,486,588)	0	(143,192)	0	(72)	0	(112,856)
inj Bivins A-13	Oct-17	0	(6,490,417)	0	(4,706,191)	0	(1,656,853)	0	(122,391)	0	(2)	0	(4,980)
inj Bivins A-14	Oct-17	0	(6,501,333)	0	(4,767,421)	0	(1,602,106)	0	(126,303)	0	(7)	0	(5,497)
inj Bivins A-4	Oct-17	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Oct-17	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Oct-17	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Oct-17	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Oct-17	21,241	14,317,131	753	1,891,573	5,009	3,503,159	13,795	8,003,312	1,471	799,146	213	119,942
BIVINS A-5	Oct-17	31,006	16,467,262	5,813	2,124,940	7,936	4,041,604	15,324	9,227,667	1,686	930,860	247	142,191
BIVINS A-7	Oct-17	4,902	12,005,098	1,461	2,844,694	1,276	3,024,809	1,916	5,487,594	216	560,461	33	87,541
BIVINS A-9	Oct-17	34,927	10,926,839	898	210,897	8,936	2,693,686	22,362	7,193,357	2,435	729,567	297	99,333
BIVINS A-11	Oct-17	22,882	6,715,914	677	147,061	5,812	1,672,331	14,587	4,382,055	1,581	451,138	224	63,328
BIVINS A-15	Oct-17	35,852	10,372,679	626	440,268	8,390	2,468,865	23,922	6,684,539	2,473	670,619	441	108,387
BIVINS B-1	Oct-17	33,280	8,577,724	792	312,622	8,255	2,081,054	21,567	5,526,643	2,258	568,190	409	89,215
BIVINS B-2	Oct-17	29,196	7,118,665	553	134,202	7,416	1,785,435	18,715	4,620,656	1,992	476,633	520	101,738
BUSH A-1	Oct-17	0	5,721,962	0	104,140	0	1,356,677	0	3,830,281	0	374,216	0	56,647
BUSH A-3	Oct-17	32,353	12,590,216	10,800	3,022,034	8,176	3,116,337	11,792	5,757,429	1,312	584,606	272	109,810
BUSH A-4	Oct-17	22,890	8,951,233	2,068	1,608,063	5,906	2,240,968	13,323	4,570,723	1,461	467,579	132	63,899
BUSH A-5	Oct-17	45,596	17,295,784	11,993	4,002,071	11,656	4,344,783	19,505	8,011,524	2,170	818,041	273	119,365
BUSH A-8	Oct-17	22,095	4,576,602	409	83,942	5,490	1,110,545	14,317	3,018,224	1,504	305,271	375	58,619
BUSH A-9	Oct-17	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Oct-17	6,956	4,697,498	146	135,835	1,691	1,123,846	4,547	3,071,480	473	312,056	99	54,281
BUSH B-1	Oct-17	3,519	3,390,497	62	63,588	828	804,407	2,340	2,265,465	253	223,850	35	33,187
FUQUA A-1	Oct-17	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Oct-17	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Oct-17	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Oct-17	0	0	0	0	0	0	0	0	0	0	0	0
field-wide pct's				16.31%	18.64%	24.92%	24.65%	52.18%	50.73%	5.63%	5.14%	0.95%	0.84%

Latest estimates of reserves and feed to HEU

Based on NITEC's 2003 reserves study from NITEC's interim report

As of EOM Oct-17 Volumes in BCF

Initial Gas In Place	330.040	
Produced 1924 to 1961	48.830	
Injected 1924 to 1961	0.450	
Remaining Gas In Place 1961	281.660	
Left Behind Pipe, 1961	82.060	====> 1.500 BCF of contained helium
Remaining in Place, 1961	199.600	
Gas In Place 1961	199.600	
Produced 1961 to July 2002	82.450	
Injected 1961 to July 2002	64.510	Net Helium
Remaining Gas In Place July 2002	181.660	33.997
Produced July 2002 through Dec 2002	1.096	0.743
Production 2003 - 16	95.429	24.219
Injection 2003 - 16	(1.423)	(1.159)
Produced to Date 2017	5.219	0.859
Injected to Date 2017	0.000	0.000
Amount of Raw Gas Available to CHEU	81.338	====> 9.335 total helium in reservoir
Estimated Bottom Hole Pressure	299.581	est z-factor 0.980

\* All volumes on Table 2 are reported in Mcf at 14.65 psia & 60°F

### Table 3 - Gas Volumes & Inventory

October - 2017

#### Crude Helium Enrichment Unit Operations

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane		Ethane plus		Other (CO <sub>2</sub> , Ar, H <sub>2</sub> )	
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
Measured Feed	Oct-17	553,229	97,899,533	90,238	23,390,996	137,890	24,533,079	288,695	44,373,024	31,141	4,753,868	5,266	848,566
Calculated Feed	Oct-17	564,283	97,767,095	92,038	23,385,526	140,645	24,494,088	294,465	44,266,343	31,763	4,770,408	5,371	850,732
Feed to Box	Oct-17	559,742	97,142,183	92,038	23,385,704	140,645	24,494,170	294,465	44,266,388	31,763	4,770,406	831	225,515
Cheu Product	Oct-17	120,578	29,546,485	89,546	23,020,977	27,725	5,737,878	2,525	582,401	2	833	781	204,395
Residue	Oct-17	298,295	44,201,529	0	2,131	6,757	1,087,551	264,701	39,220,405	26,837	3,890,180	0	1,262
Cold Box Vent	Oct-17	83,589	16,159,133	58	89,421	74,903	14,330,557	8,612	1,677,757	0	118	17	61,280
Flare/Boot Strap	Oct-17	83,589	6,675,382	58	50,201	74,903	5,585,559	8,612	939,926	0	93,583	17	6,114
Fuel From Cheu	Oct-17	8,110	1,333,977	4	422	210	38,882	6,541	1,081,481	1,355	213,192	0	0
Shrinkage/Loss	Oct-17	3,569	485,788	0	0	0	0	0	0	3,569	485,788	0	0
Unaccounted*	Oct-17	45,600	3,411,610	2,431	178,816	31,051	2,515,798	12,086	712,085	(0)	1,102	32	3,809

\*Before October 2004, the values are estimated

#### Storage Operations

##### Inventory (contained helium)

	Government	Private
Beginning inventory	3,475,395	3,641,745
net acceptances +	0	0
redeliveries	0	(88,052)
In Kind Transfers	0	0
Conservation Crude Sales	0	0
Gain/loss	(1,051)	
Ending Inventory	3,474,343	3,553,693
Total Helium in Reservoir	9,334,733	
Total Helium in Storage	7,028,036	
Helium in native gas	2,306,697	

##### Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	39,226	28,718	73.21%
Measured to Pipeline (Private Plants)	19,080	12,635	66.22%
Measured from Pipeline (Private Plant)	140,325	100,687	71.75%
HEU Production	120,578	89,546	74.26%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	40,245	29,160	72.46%
Gain/Loss	1,685	(1,051)	

#### Tuck Trigg Reservoir Operations

Native Gas (Gross)	Since Field		
	Month	Fiscal Year	Discovery
Total in place, beg. of period	5,198,688	5,198,688	5,890,000
Recoverable in place, beg. of period	4,528,688	4,528,688	5,220,000
Production during period to date	0	0	691,312
Total in place, end of month	5,198,688	5,198,688	5,198,688
Recoverable in place, end of month	4,528,688	4,528,688	4,528,688

\* All volumes on Table 3 are reported in Mcf at 14.65 psia & 60°F

Table 4 - In Kind Helium Sales

October - 2017

	NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**	
<b>In Kind Helium</b>										
<b>Airgas Merchant Gases, Contract no. INC18-0102</b>										
Month										
FYTD										
<b>Air Liquide Helium America, Inc., Contract no. INC18-0104</b>										
Month										
FYTD										
<b>Air Products, L.P., Contract no. INC18-0105</b>										
Month										
FYTD										
<b>Linde Gas North America, LLC, Contract no. INC18-0106</b>										
Month										
FYTD										
<b>Praxair, Inc., Contract no. INC18-0112</b>										
Month										
FYTD										
<b>Matheson Tri-Gas, Inc., Contract no. INC18-0114</b>										
Month										
FYTD										
<b>Global Gases America, Contract no. INC18-0116</b>										
Month										
FYTD										
<b>Total month</b>	0	0	0	0	0	0	0	0	\$0	
<b>Total FYTD</b>	0	0	0	0	0	0	0	0	\$0	
<b>Total CYTD</b>	46,283	6	0	8	292	50,933	97,522	96,016	\$7,969,328	
<b>Cumulative</b>	1,950,792	108,683	450	271,593	422,045	862,302	3,615,864	3,559,877	\$209,931,214	
<b>In Kind Transfers</b>							Month	FYTD	CYTD	Cumulative
Transferred							0	0	100,110	3,525,163
Volume outstanding							34,789			

\* Volumes in Mcf at 14.7 psia & 70°F

\*\*Rounded to nearest dollar

+ Volumes in Mcf at 14.65 psia & 60°F

May numbers are from April, an update will be posted for May at the end of June.

**Natural Gas / Natural Gas Liquid Sales**

	Natural Gas (Mcf)***	NGLs (gal)	Decatherms	Avg Btu Value	Charges Billed (\$)**
<b>El Paso Natural Gas</b>					
Provides Measured Firm/Interruptible Transportation Services (billed monthly)					
Month	295,987	---	325,673	1,100	(\$27,997)
FYTD	295,987	---	325,673	1,100	(\$27,997)
Cumulative	43,746,863	---	47,623,289	1,089	(\$4,948,340)
<b>Minerals Management Service</b>					
No Longer Provides Natural Gas Marketing Services					
Cumulative	---	---	---	---	(\$179,913)
<b>ETC Marketing Ltd</b>					
Purchaser - Natural Gas					
Month	---	---	326,900	\$2.549489	\$833,428
FYTD	---	---	326,900	\$2.549489	\$833,428
Cumulative	---	---	47,441,787	\$4.426071	\$209,154,183
<b>Sandstone</b>					
Purchaser - Natural Gas Liquids					
Month	---	101,975	11,109	\$6.983844	\$77,584
FYTD	---	101,975	11,109	\$6.983844	\$77,584
Cumulative	---	13,330,212	1,418,208	\$11.079886	\$15,713,583
<b>Total</b>					
<b>Total month</b>	295,987	101,975	338,009	\$2.612399	\$883,015
<b>Total FYTD</b>	295,987	101,975	338,009	\$2.612399	\$883,015
<b>Total CYTD</b>	2,821,921	973,344	3,077,732	\$2.685746	\$8,266,007
<b>Cumulative</b>	43,746,863	13,330,212	48,859,995	\$4.514247	\$219,739,513

\*\*\* Volumes in Mcf at 14.73 psia & 60°F

\*\*Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

October - 2017

## Helium &amp; Natural Gas Sales

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$) **	
<b>Conservation Helium</b>				<b>(billed quarterly)</b>	
<b><u>Air Liquide Helium America, Inc.</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	335,217		335,217	\$25,454,815	
<b><u>Air Products, L.P.</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	8,962,845		8,962,845	\$671,868,990	
<b><u>Linde Gas North America, LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	6,289,226		6,289,226	\$433,603,032	
<b><u>Keyes Helium Co., LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	1,013,471		1,013,471	\$70,080,272	
<b><u>Matheson Tri-Gas, Inc.</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	360,034		360,034	\$38,155,146	
<b><u>Praxair, Inc.</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	5,550,116		5,550,116	\$421,704,984	
<b><u>Global Gases America</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	36,267		36,267	\$3,535,665	
<b><u>Airgas Merchant Gases</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	15,667		15,667	\$1,488,365	
<b><u>IACX Energy</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	16,220		16,220	\$1,720,180	
<b><u>Uniper Global Commodities North America LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	41,334		41,334	\$5,038,746	
<b><u>Weil Group Resources LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	15,000	0	\$0	
Cumulative	21,000		6,000	\$714,000	
<b><u>NAH USA Helium Marketing, Inc</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	11,334		11,334	\$1,348,746	
<b>Total month</b>					
	0	0	0	0	
<b>Total FYTD</b>					
	0	15,000	0	\$0	
<b>Total CYTD</b>					
	400,002		885,002	\$105,440,238	
<b>Cumulative</b>					
	22,779,063		22,779,063	\$1,678,646,449	
<b>Conservation Crude Transfers</b>					
		Month	FYTD	CYTD	Cumulative
Transferred		0	0	900,002	22,837,731
Volume outstanding		0			

\* Volumes in Mcf at 14.65 psia &amp; 60°F

## Table 6 - Helium Resources Evaluation

October - 2017

All Volumes in Mcf at 14.7 psia & 70°F

<b>Revenue Collected From Federal Leaseholds</b>	Month*	FYTD*
Fee Sales & Royalties	\$1,511,779	\$1,511,779
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$36,750	\$36,750
<b>Revenue Collected from Federal Lease Holds</b>	<b>\$1,548,529</b>	<b>\$1,548,529</b>

\*Totals do not sum

<b>Helium Analysis and Evaluation</b>	Month	FYTD
Number of Sample Request Letters Sent	0	0
Number of Samples Received	0	0
Number of Samples Analyzed	0	0
Total Number of Samples Analyzed For Resources Division	0	0
Total Number of Other Samples Analyzed (2)	15	15

### U. S. Helium Production

<i>Domestic</i>	FY Volume	CY Volume
2013 Helium Sold	4,725,187	4,623,130
2014 Helium Sold	4,279,765	4,166,708
2015 Helium Sold	3,815,746	3,463,698
2016 Helium Sold	3,282,185	3,466,014
2017 Helium Sold	4,559,100	4,644,278
Estimated Helium Resources as of 12/31/2016 (Mcf)		723,000,000

	FY-2017	CY-2017
<b>U.S. Helium Exports</b> (3)	2,520,645	2,451,207
<b>US Helium Imports</b>	731,407	666,908

(1) Includes drip gas sales & other miscellaneous gas sales.

(2) Includes pipeline, field survey, and other requested analyses.

(3) Data from Department of Commerce - Bureau of the Census.

Table 7 - Helium Storage Contract Activity

October - 2017

All Volumes in Mcf at 14.65 psia & 60°F

	Metered Gas					Transferred Gas Helium		Stored Helium EOM	Charges Billed (\$)**	
	Gross Gas	Helium %	Helium	Helium		Month	Cumulative		Month	FYTD
				FYTD	CYTD					
<b>Total All Contracts*</b>										
Crude Acquired	19,080	66.2%	12,635	12,635	137,462	32,130,001	18,431	59,825,470		
Crude Disposed	137,625	73.2%	100,687	100,687	975,029	52,818,071	18,431	26,377,025	\$576,000	Storage Fees
Grade-A Rdlvrd	0		0	0	0	1,478,718			\$0.00	RMF Fees
Net/Balance	(118,545)		(88,052)	(88,052)	(837,567)	(22,166,788)	0	33,448,445	3,553,693	\$576,000 \$576,000
<b>Total Prior Contracts (TERMINATED)</b>										
Crude Acquired				0	0	17,406,129	0	18,196,898		
Crude Disposed				0	0	11,830,863	0	19,148,768		
Grade-A Rdlvrd				0	0	1,478,718				
Number of trailers				0	0	9,834		0		
<b>Linde Gas North America, LLC, Contract no. 3249</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Praxair, Inc., Contract no. 3251</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Air Products, L.P., Contract no. 3256</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Air Liquide Helium America, Inc., Contract no. 3284</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Pioneer Natural Resources USA, Inc, Contract no. 3286</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Keyes Helium Co., LLC, Contract no. 3287</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Matheson Tri-Gas, Inc., Contract no. 3288</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Airgas Merchant Gases, Contract no. 3290</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Global Gases America, Contract no. 3293</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Linn Operating, Inc., Contract no. 3296</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>IACX Energy, Contract no. 3297</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Uniper Global Commodities North America LLC, Contract no. 3298</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>Weil Group Resources LLC, Contract no. 3299</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										
<b>NAH USA Helium Marketing, Inc, Contract no. 3300</b>										
Crude Acquired										
Crude Disposed										
Net/Balance										

Government Helium	
Remaining Crude Acquired beginning of the month	3,475,395
Crude Disposed: In Kind Sales transferred for the month	0
Conservation Crude Sales/Reserve Sell Down transferred (month)	0
Gains and Losses for the month	(1,051)
Net/Balance of Purchased Helium Remaining for Sale	3,474,343

\*Includes In Kind and Conservation Crude transfers from Government storage

\*\*Rounded to nearest dollar

\*\* New Contracts



## Table 8 - Compression & CHEU (Charges & Operations)

October - 2017

### Field/CHEU Compressor Operations

		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$2.55	\$2.55	\$4.75
Fuel used * (now includes field compression well head)	total MMBTU	9,375	9,375	1,820,076
Field Compression Fuel Cost *	\$dollars	\$0	\$0	\$658,447
CHEU Compression Fuel Cost *	\$dollars	\$14,698	\$14,698	\$4,478,148
CHEU Process Fuel Cost *	\$dollars	\$9,208	\$9,208	\$2,990,240
Rental compressor(s) fuel consumed (well head)	\$dollars	\$0	\$0	\$207,234
Rental Compressor(s) helium in fuel (Mcf x \$\$)	\$dollars	\$0	\$0	\$315,893
Rental compressor(s) helium in fuel (Mcf)	Mcf	0	0	3645
#1 Compressor run time *	hours	744	744	110,303
#2 Compressor run time *	hours	744	744	72,867
#3 Compressor run time *	hours	0	0	62,008

\* Field/CHEU Compressor Operations based on Oct 17 activity

### Crude Helium Enrichment Unit (CHEU)

#### CHEU Runtime

	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	744	100.0%	744	100.0%	121,869
Producing residue gas	744	100.0%	744	100.0%	119,027
Producing helium product	744	100.0%	744	100.0%	115,398
Producing natural gas liquids	744	100.0%	744	100.0%	114,444

#### CHEU Charges

	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservior Management Fees (RMF)	\$0	\$0	\$33,753,800
Total operating costs	(\$915,266)	(\$915,266)	(\$146,807,204)
Labor	\$118,705	\$118,705	\$16,392,160
Compressor fuel cost Sep 17	\$12,685	\$12,685	\$4,485,312
HEU fuel cost Sep 17	\$8,913	\$8,913	\$2,996,079
Electrical power cost Sep 17	\$164,774	\$164,774	\$22,191,725
Other	\$45,248	\$45,248	\$14,037,697
Sub Total - Items provided by BLM	\$350,325	\$350,325	\$63,312,328
Total - Cliffside Refiners, LP, GDA030001	(\$564,941)	(\$564,941)	(\$83,494,876)

**915,266** \*Rounded to nearest dollar

#### CHEU Utility Usage

	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Oct 17	3,124	3,124	577,365
Cheu Pure Water Usage (gallons) Oct 17	117	117	309,356
Electricity Metered (Kwh) consumed Sep 17	2,855,964	2,855,964	150,298,632