

# Bureau of Land Management

## Amarillo Field Office

### Helium Operations

#### Statistical Report

for



January - 2018

#### *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 24, 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 21, 2018

# Table 1 - Summary of Helium Operations

# January - 2018

## Helium Enrichment Unit Operations

### Gas Processed

	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	600,739	99,177	16.51%	2,132,795	346,476
Helium Product (Mcf*)	132,528	98,740	74.51%	460,611	341,374
Residue Natural Gas (Mcf*)	325,184	18	0.01%	1,133,263	26

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

## Natural Gas & Liquids Produced

### Gas Processed

	Month	FYTD
Natural Gas Sales (Mcf***)	322,093	1,125,236
NGL Sales (gallons)	118,583	398,021

\*\*\* 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Total Withdrawn (Mcf*)	586,769	96,872	16.51%	2,140,761	347,622
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	15,000	0	22,779,063
Conservation Crude Sale Volume Transferred (Mcf*)	0	0	15,000	0	900,002
Conservation Helium in Storage (EOM) (Mcf*)		3,427,574			

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

### In Kind Helium

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	0	31,238	0	3,556,401
Sale Volumes Outstanding (Mcf*)	37,136			

\* 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*)	18,317	11,821	64.54%	47864
Crude Disposed (Mcf*)	146,469	107,031	73.07%	392117
Net Balance (Mcf*)	(128,152)	(95,210)		(344,253)
Balance of Stored Helium End Of Month (Mcf*)		3,343,730		

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

## Revenue / Charges

### Helium Storage Contracts

(Charges Billed (\$))

	Month	FYTD
Storage Fees Billed (\$)	\$614,887	\$2,392,822
Reservoir Management Fees Billed (\$)	\$162,914	\$495,617

### Enrichment Unit Charges

(Charges Billed (\$))

	Month	FYTD
Reservoir Management Fees (RMF)	\$162,914	\$495,617
Total operating costs	(\$1,093,658)	(\$4,009,839)
Sub Total - Items provided by BLM	\$342,833	\$1,362,374
Total - Cliffside Refiners, LP, GDA030001	(\$750,825)	(\$2,647,465)

### Conservation Helium - Natural Gas - Liquid Sales

(Charges Billed (\$))

	Month	FYTD
Conservation Crude Helium Sales	\$0	\$1,815,000
In Kind Sales	\$0	\$2,787,555
Natural Gas & Liquid Sales	\$1,197,012	\$3,605,084

### Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$1,697,506	\$6,633,441
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 15

\*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

January - 2018

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane	Methane	Ethane plus		Other (CO2, Ar, H2)	Cumulative
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	
<b>TOTAL</b>		<b>586,769</b>	<b>234,561,020</b>	<b>96,872</b>	<b>43,681,203</b>	<b>145,224</b>	<b>57,820,887</b>	<b>307,099</b>	<b>119,016,849</b>	<b>31,940</b>	<b>12,063,955</b>	<b>5,634</b>	<b>1,978,126</b>
BIVINS A-3	Jan-18	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	Jan-18	57,035	12,311,739	24,645	7,207,960	14,185	3,028,352	16,064	1,832,485	1,713	182,928	428	60,014
BIVINS A-13	Jan-18	39,562	9,124,952	12,724	4,673,445	9,819	2,341,009	15,030	1,850,859	1,693	205,837	296	53,801
BIVINS A-14	Jan-18	46,002	10,308,503	12,867	5,722,521	11,263	2,607,889	19,355	1,727,951	2,104	187,105	414	63,037
BIVINS A-4	Jan-18	37,888	14,213,223	4,127	2,473,376	9,137	3,443,249	22,137	7,420,669	2,110	747,997	378	127,932
BUSH A-2	Jan-18	10,419	13,920,711	651	2,015,365	2,599	3,418,317	6,409	7,589,704	681	782,174	79	115,152
Injection	Jan-18	0	66,474,735	0	48,019,788	0	17,121,580	0	780,676	0	37	0	552,655
inj Bivins A-3	Jan-18	0	(25,652,315)	0	(18,384,452)	0	(6,554,549)	0	(332,777)	0	0	0	(380,537)
inj Bivins A-6	Jan-18	0	(24,412,686)	0	(17,669,978)	0	(6,486,588)	0	(143,192)	0	(72)	0	(112,856)
inj Bivins A-13	Jan-18	0	(6,490,417)	0	(4,706,191)	0	(1,656,853)	0	(122,391)	0	(2)	0	(4,980)
inj Bivins A-14	Jan-18	0	(6,501,333)	0	(4,767,421)	0	(1,602,106)	0	(126,303)	0	(7)	0	(5,497)
inj Bivins A-4	Jan-18	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Jan-18	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Jan-18	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Jan-18	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Jan-18	22,787	14,378,046	780	1,893,673	5,318	3,517,404	15,002	8,043,198	1,473	803,237	213	120,534
BIVINS A-5	Jan-18	32,204	16,551,331	5,881	2,140,396	8,221	4,063,043	16,310	9,269,848	1,559	935,211	234	142,833
BIVINS A-7	Jan-18	16,803	12,038,847	4,794	2,854,339	4,337	3,033,532	6,775	5,501,197	783	562,005	114	87,774
BIVINS A-9	Jan-18	36,995	11,025,152	951	213,410	9,354	2,718,560	23,735	7,256,430	2,629	736,555	325	100,197
BIVINS A-11	Jan-18	25,171	6,782,119	730	148,981	6,317	1,688,955	16,095	4,424,385	1,772	455,798	256	64,000
BIVINS A-15	Jan-18	39,133	10,477,159	667	442,048	9,044	2,493,019	26,178	6,754,418	2,747	677,959	498	109,715
BIVINS B-1	Jan-18	35,551	8,673,680	832	314,871	8,795	2,104,732	23,467	5,589,429	2,080	574,332	377	90,316
BIVINS B-2	Jan-18	35,486	7,209,017	657	135,877	8,907	1,808,120	22,805	4,678,711	2,461	482,902	656	103,407
BUSH A-1	Jan-18	0	5,721,962	0	104,140	0	1,356,677	0	3,830,281	0	374,216	0	56,647
BUSH A-3	Jan-18	37,923	12,686,762	12,382	3,053,676	9,586	3,140,692	14,283	5,793,399	1,376	588,384	297	110,612
BUSH A-4	Jan-18	24,156	9,017,543	2,104	1,613,907	6,139	2,257,919	14,180	4,609,587	1,591	471,849	142	64,281
BUSH A-5	Jan-18	43,736	17,420,044	11,173	4,034,152	11,080	4,376,384	19,050	8,065,376	2,167	824,021	266	120,110
BUSH A-8	Jan-18	19,731	4,633,895	357	84,980	4,844	1,124,617	12,815	3,055,432	1,366	309,238	348	59,627
BUSH A-9	Jan-18	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Jan-18	20,431	4,741,360	449	136,773	4,942	1,134,349	13,572	3,100,239	1,214	315,056	253	54,942
BUSH B-1	Jan-18	5,757	3,403,686	100	63,816	1,338	807,475	3,838	2,274,256	422	224,817	59	33,321
FUQUA A-1	Jan-18	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Jan-18	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Jan-18	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Jan-18	0	0	0	0	0	0	0	0	0	0	0	0
field-wide pct's				16.51%	18.62%	24.75%	24.65%	52.34%	50.74%	5.44%	5.14%	0.96%	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 Jan-18 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 - 17	101.638	25.237
Injection 2003 - 17	(1.423)	(1.159)
Produced to Date 2018	0.587	0.097
Injected to Date 2018	0.000	0.000
Amount of Raw Gas Available to CHEU	79.762	====> 9.079 total helium in reservoir
Estimated Bottom Hole Pressure	293.781	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

January - 2018

#### 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	Jan-18	600,739	99,479,099	99,177	23,647,233	148,682	24,924,048	314,414	45,200,697	32,698	4,842,958	5,768	864,163
Calculated Feed	Jan-18	586,769	99,342,836	96,872	23,641,089	145,224	24,884,142	307,099	45,091,995	31,940	4,859,314	5,634	866,296
Feed to Box	Jan-18	582,021	98,704,683	96,872	23,641,268	145,224	24,884,224	307,099	45,092,041	31,940	4,859,313	886	227,838
Cheu Product	Jan-18	132,528	29,886,518	98,740	23,272,806	30,088	5,816,352	2,836	589,898	3	862	861	206,600
Residue	Jan-18	325,184	45,036,497	18	2,157	7,007	1,105,907	289,362	39,962,450	28,797	3,964,720	1	1,263
Cold Box Vent	Jan-18	90,313	16,388,018	63	89,664	81,663	14,534,795	8,569	1,702,115	(0)	118	18	61,327
Flare/Boot Strap	Jan-18	90,313	6,904,267	63	50,443	81,663	5,789,797	8,569	964,284	(0)	93,583	18	6,160
Fuel From Cheu	Jan-18	7,809	1,355,239	4	432	202	39,433	6,298	1,098,629	1,305	216,745	0	0
Shrinkage/Loss	Jan-18	1,836	494,048	0	0	0	0	0	0	1,836	494,048	0	0
Unaccounted*	Jan-18	24,351	3,499,318	(1,954)	179,159	26,264	2,589,740	35	725,458	0	1,102	6	3,859

\*Before October 2004, the values are estimated

#### Storage Operations

##### Inventory (contained helium)

	Government	Private
Beginning inventory	3,427,450	3,438,940
net acceptances +	0	0
redeliveries	0	(95,210)
In Kind Transfers	0	0
Conservation Crude Sales	0	0
Gain/loss	125	
Ending Inventory	3,427,574	3,343,730
Total Helium in Reservoir	9,079,149	
Total Helium in Storage	6,771,304	
Helium in native gas	2,307,844	

##### Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	29,293	20,608	70.35%
Measured to Pipeline (Private Plants)	18,317	11,821	64.54%
Measured from Pipeline (Private Plant)	146,469	107,031	73.07%
HEU Production	132,528	98,740	74.51%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	33,152	24,263	73.19%
Gain/Loss	(516)	125	

#### 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

January - 2018

	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>	15,371	1	0	0	0	18,741	34,113	33,585	\$2,787,555	
<b>Total CYTD</b>	0	0	0	0	0	0	0	0	\$0	
<b>Cumulative</b>	1,966,163	108,685	450	271,593	422,045	881,043	3,649,978	3,593,462	\$212,718,769	
<b>In Kind Transfers</b>							Month	FYTD	CYTD	Cumulative
Transferred							0	31,238	0	3,556,401
Volume outstanding							37,136			

\* Volumes in Mcf at 14.7 psia & 70°F

\*\*Rounded to nearest dollar

+ Volumes in Mcf at 14.65 psia & 60°F

**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	322,093	---	354,418	1,100	(\$27,997)
FYTD	1,125,236	---	1,238,330	1,101	(\$111,988)
Cumulative	44,576,112	---	48,535,946	1,089	(\$5,032,331)
<b>Minerals Management Service</b>					
No Longer Provides Natural Gas Marketing Services					
Cumulative	---	---	---	---	(\$179,913)
<b>ETC Marketing Ltd</b>					
Purchaser - Natural Gas					
Month	---	---	354,800	\$3.162234	\$1,121,961
FYTD	---	---	1,239,200	\$2.733638	\$3,387,525
Cumulative	---	---	48,354,087	\$4.395385	\$211,708,280
<b>Sandstone</b>					
Purchaser - Natural Gas Liquids					
Month	---	118,583	12,819	\$8.038753	\$103,049
FYTD	---	398,021	43,237	\$7.621876	\$329,547
Cumulative	---	13,626,258	1,450,336	\$11.008171	\$15,965,547
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$)
<b>Total month</b>	322,093	118,583	367,619	\$3.256122	\$1,197,012
<b>Total FYTD</b>	1,125,236	398,021	1,282,437	\$2.811119	\$3,605,084
<b>Total CYTD</b>	322,093	118,583	367,619	\$3.256122	\$1,197,012
<b>Cumulative</b>	44,576,112	13,626,258	49,804,423	\$4.483299	\$222,461,582

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

\*\*Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

January - 2018

## 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	0	15,000	\$1,815,000	
Cumulative	21,000		21,000	\$2,529,000	
<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	0	15,000	\$1,815,000	
<b>Total CYTD</b>					
	0		0	\$0	
<b>Cumulative</b>					
	22,779,063		22,779,063	\$1,678,646,449	
<b>Conservation Crude Transfers</b>					
		Month	FYTD	CYTD	Cumulative
Transferred		0	15,000	0	900,002
Volume outstanding		0			

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

## Table 6 - Helium Resources Evaluation

January - 2018

All Volumes in Mcf at 14.7 psia & 70°F

<b>Revenue Collected From Federal Leaseholds</b>	Month*	FYTD*
Fee Sales & Royalties	\$1,691,337	\$6,591,779
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$41,662	\$153,137
<b>Revenue Collected from Federal Lease Holds</b>	<b>\$1,697,506</b>	<b>\$6,633,441</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	48

### 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

January - 2018

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	Cumulative					
<b>Total All Contracts*</b>											
Crude Acquired	18,317	64.5%	11,821	47,864	11,821	32,165,230	26,994	59,959,043			
Crude Disposed	146,469	73.1%	107,031	392,117	107,031	53,109,501	26,994	26,460,335			
Grade-A Rdlvrd	0		0	0	0	1,478,718			\$614,887	Storage Fees	
Net/Balance	(128,152)		(95,210)	(344,253)	(95,210)	(22,422,989)	0	33,498,708	\$162,913.67	RMF Fees	
									\$777,801	\$2,888,439	
<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	3,427,450
Crude Disposed: In Kind Sales transferred for the month	0
Conservation Crude Sales/Reserve Sell Down transferred (m)	0
Gains and Losses for the month	125
Net/Balance of Purchased Helium Remaining for Sale	3,427,574

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

\*\*Rounded to nearest dollar

\*\* New Contracts



Table 8 - Compression & CHEU (Charges & Operations)

January - 2018

Field/CHEU Compressor Operations		Month			FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$3.16		\$2.70		\$4.73
Fuel used * (now includes field compression well head)	total MMBTU	9,027		34,659		1,845,360
Field Compression Fuel Cost *	\$dollars	\$0		\$0		\$658,447
CHEU Compression Fuel Cost *	\$dollars	\$15,835		\$54,564		\$4,518,014
CHEU Process Fuel Cost *	\$dollars	\$12,340		\$39,122		\$3,020,154
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	692		2,676		112,235
#2 Compressor run time *	hours	743		2,683		74,806
#3 Compressor run time *	hours	52		137		62,145

\* Field/CHEU Compressor Operations based on Jan 18 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%	2,834	96.0%	123,959
Producing residue gas	744	100.0%	2,779	94.1%	121,063
Producing helium product	744	100.0%	2,747	93.1%	117,402
Producing natural gas liquids	744	100.0%	2,764	93.6%	116,464

CHEU Charges	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservior Management Fees (RMF)	\$162,914	\$495,617	\$34,085,950
Total operating costs	(\$1,093,658)	(\$4,009,839)	(\$149,901,777)
Labor	\$118,705	\$474,820	\$16,748,275
Compressor fuel cost Dec 17	\$9,515	\$46,115	\$4,518,742
HEU fuel cost Dec 17	\$8,357	\$40,994	\$3,028,160
Electrical power cost Dec 17	\$164,008	\$644,386	\$22,671,337
Other	\$42,247	\$156,168	\$14,148,617
Sub Total - Items provided by BLM	\$342,833	\$1,362,374	\$64,324,377
Total - Cliffside Refiners, LP, GDA030001	(\$750,825)	(\$2,647,465)	(\$85,577,401)

\*Rounded to nearest dollar

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Jan 18	2,751	11,979	586,220
Cheu Pure Water Usage (gallons) Jan 18	555	2,124	311,363
Electricity Metered (Kwh) consumed Dec 17	2,732,405	8,032,297	155,310,923