

# Bureau of Land Management

## Amarillo Field Office

### Helium Operations

#### Statistical Report

for



March - 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

#### *List of Tables*

Table 1 - Summary of Helium Operations  
Table 2 - Bush Dome Reservoir Operations  
Table 3 - Gas Volumes & Inventory  
Table 4 - In Kind Helium Sales  
Table 4 - Natural Gas / Natural Gas Liquid Sales  
Table 5 - Conservation Crude Sales/Reserve Sell-down  
Table 6 - Helium Resources Evaluation  
Table 7 - Helium Storage Contract Activity  
Table 8 - Compression & CHEU (Charges & Operations)

*Compi* Amarillo, Texas

Issued: November 8, 2018

**REVISED**

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

Approved for Distribution: Joseph B. Peterson (Acting FM)

Date: November 7, 2018

# Table 1 - Summary of Helium Operations

## March - 2018

### Helium Enrichment Unit Operations

Gas Processed	Month	Month	Average Percent	Gross FYTD	Net FYTD
	Gross Volume	Net Helium			
Measured Plant Feed (Mcf*)	445,038	68,197	15.32%	3,105,403	501,120
Helium Product (Mcf*)	91,617	68,181	74.42%	670,844	497,760
Residue Natural Gas (Mcf*)	223,247	14	0.01%	1,647,438	40

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

### Natural Gas & Liquids Produced

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf***)	221,322	1,663,358
NGL Sales (gallons)	81,331	583,905

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

### Bush Dome Reservoir Operations

Conservation gases from all sources	Month	Month	Average Percent	Gross FYTD	Net FYTD
	Gross Volume	Net Helium			
Total Withdrawn (Mcf*)	438,057	67,234	15.35%	3,100,139	500,277
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	903,477
Conservation Helium in Storage (EOM) (Mcf*)		3,393,155			

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

### In Kind Helium

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	193	64,823	33,585	3,589,986
Sale Volumes Outstanding (Mcf*)	46,683			

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

### Private Company Helium Storage Contracts

Contact Activity	Month	Month	Average Percent	Annual Helium FYTD
	Gross Volume	Net Helium		
Crude Acquired (Mcf*)	10,934	6,368	58.24%	65968
Crude Disposed (Mcf*)	117,858	85,613	72.64%	572368
Net Balance (Mcf*)	(106,924)	(79,245)		(506,400)
Balance of Stored Helium End Of Month (Mcf*)		3,215,168		

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

### Revenue / Charges

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$598,084	\$3,599,810
Reservoir Management Fees Billed (\$)	\$162,914	\$821,445

### Enrichment Unit Charges (Charges Billed (\$))

	Month	FYTD
Reservoir Management Fees (RMF)	\$162,914	\$821,445
Total operating costs	(\$1,209,401)	(\$6,379,020)
Sub Total - Items provided by BLM	\$334,652	\$2,044,019
Total - Cliffside Refiners, LP, GDA030001	(\$874,748)	(\$4,335,001)

### Conservation Helium - Natural Gas - Liquid Sales (Charges Billed (\$))

	Month	FYTD
Conservation Crude Helium Sales	\$0	\$1,815,000
In Kind Sales	\$3,404,941	\$6,192,496
Natural Gas & Liquid Sales	\$555,016	\$4,911,178

### Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$1,922,640	\$10,314,847
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 15

\*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

March - 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>438,057</b>	<b>235,520,397</b>	<b>67,234</b>	<b>43,833,859</b>	<b>108,020</b>	<b>58,057,980</b>	<b>233,335</b>	<b>119,523,793</b>	<b>24,980</b>	<b>12,117,170</b>	<b>4,488</b>	<b>1,987,596</b>
BIVINS A-3	Mar-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	Mar-18	36,029	12,396,978	15,314	7,244,387	8,949	3,049,538	10,385	1,856,867	1,108	185,529	273	60,658
BIVINS A-13	Mar-18	28,149	9,188,943	9,200	4,694,173	6,986	2,356,891	10,565	1,875,041	1,187	208,557	211	54,280
BIVINS A-14	Mar-18	32,213	10,382,158	9,018	5,743,081	7,879	2,625,911	13,552	1,758,987	1,474	190,477	291	63,702
BIVINS A-4	Mar-18	29,614	14,277,144	3,203	2,480,322	7,132	3,458,666	17,305	7,458,048	1,673	751,540	301	128,569
BUSH A-2	Mar-18	9,066	13,938,782	567	2,016,494	2,283	3,422,868	5,635	7,600,935	529	783,229	53	115,256
Injection	Mar-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	Mar-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	Mar-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	Mar-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	Mar-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	Mar-18	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Mar-18	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Mar-18	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Mar-18	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Mar-18	18,696	14,417,377	637	1,895,018	4,358	3,526,584	12,293	8,069,093	1,231	805,781	178	120,901
BIVINS A-5	Mar-18	23,306	16,603,379	4,282	2,149,938	5,947	4,076,343	11,770	9,296,201	1,136	937,690	171	143,208
BIVINS A-7	Mar-18	11,368	12,064,857	3,244	2,861,762	2,934	3,040,246	4,582	5,511,682	530	563,217	77	87,951
BIVINS A-9	Mar-18	28,984	11,087,092	759	215,026	7,320	2,734,211	18,594	7,296,161	2,056	740,952	255	100,742
BIVINS A-11	Mar-18	19,708	6,824,212	574	150,206	4,939	1,699,511	12,606	4,451,302	1,388	458,763	201	64,429
BIVINS A-15	Mar-18	31,499	10,543,917	535	443,183	7,269	2,508,436	21,084	6,799,089	2,210	682,644	401	110,565
BIVINS B-1	Mar-18	28,271	8,733,957	640	316,260	6,754	2,119,404	18,027	5,628,583	2,336	578,541	514	91,170
BIVINS B-2	Mar-18	28,213	7,268,921	522	136,986	7,073	1,823,147	18,139	4,717,213	1,957	487,058	522	104,516
BUSH A-1	Mar-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	Mar-18	25,883	12,745,649	8,429	3,072,894	6,540	3,155,585	9,762	5,815,607	948	590,494	204	111,070
BUSH A-4	Mar-18	19,059	9,058,276	1,656	1,617,451	4,844	2,268,270	11,190	4,633,497	1,256	474,535	112	64,522
BUSH A-5	Mar-18	31,033	17,489,758	7,926	4,051,956	7,861	4,394,043	13,515	8,095,737	1,542	827,486	189	120,535
BUSH A-8	Mar-18	16,155	4,667,799	292	85,593	3,964	1,132,940	10,495	3,077,455	1,118	311,584	286	60,227
BUSH A-9	Mar-18	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Mar-18	16,283	4,775,554	358	137,526	3,939	1,142,621	10,817	3,122,955	967	317,088	202	55,366
BUSH B-1	Mar-18	4,528	3,412,396	78	63,966	1,051	809,497	3,021	2,280,066	332	225,455	46	33,410
FUQUA A-1	Mar-18	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Mar-18	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Mar-18	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Mar-18	565	0	10	0	131	0	378	0	41	0	6	0
field-wide pct's				15.35%	18.61%	24.66%	24.65%	53.27%	50.75%	5.70%	5.14%	1.02%	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 Mar-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	1.546	0.250
Injected to Date 2018	0.000	0.000
Amount of Raw Gas Available to CHEU	78.802	=====> 8.926 total helium in reservoir
Estimated Bottom Hole Pressure	290.252	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

March - 2018

#### Crude Helium Enrichment Unit Operations

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane		Ethane plus		Other (CO2, Ar, H2)	
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
Measured Feed	Mar-18	445,038	100,451,706	68,197	23,801,877	110,588	25,165,256	236,266	45,713,850	25,429	4,896,960	4,558	873,763
Calculated Feed	Mar-18	437,492	100,301,649	67,224	23,793,734	107,890	25,121,105	232,957	45,598,561	24,939	4,912,488	4,482	875,761
Feed to Box	Mar-18	433,623	99,655,427	67,224	23,793,913	107,890	25,121,187	232,957	45,598,607	24,939	4,912,486	613	229,235
Cheu Product	Mar-18	91,617	30,096,751	68,181	23,429,191	20,903	5,864,343	1,937	594,385	1	864	595	207,967
Residue	Mar-18	223,247	45,550,672	14	2,171	4,987	1,117,072	198,445	40,419,722	19,801	4,010,444	0	1,263
Cold Box Vent	Mar-18	62,685	16,531,592	44	89,764	56,784	14,664,726	5,845	1,715,628	(0)	118	13	61,356
Flare/Boot Strap	Mar-18	62,685	7,047,840	44	50,543	56,784	5,919,728	5,845	977,797	(0)	93,583	13	6,189
Fuel From Cheu	Mar-18	5,688	1,368,169	3	439	147	39,767	4,587	1,109,057	950	218,906	0	0
Shrinkage/Loss	Mar-18	1,977	497,126	0	0	0	0	0	0	1,977	497,126	0	0
Unaccounted*	Mar-18	14,267	3,531,931	(2,537)	173,779	16,484	2,628,696	323	724,504	0	1,102	(4)	3,850

\*Before October 2004, the values are estimated

#### Storage Operations

##### Inventory (contained helium)

	Government	Private
Beginning inventory	3,394,188	3,294,220
net acceptances + redeliveries	0	0
	0	(79,245)
In Kind Transfers	(193)	193
Conservation Crude Sales	0	0
Gain/loss	(840)	
Ending Inventory	3,393,155	3,215,168
Total Helium in Reservoir	8,926,494	
Total Helium in Storage	6,608,323	
Helium in native gas	2,318,171	

##### Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	40,478	29,571	73.05%
Measured to Pipeline (Private Plants)	10,934	6,372	58.28%
Measured from Pipeline (Private Plants)	117,858	85,613	72.64%
HEU Production	91,617	68,181	74.42%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	24,317	17,671	72.67%
Gain/Loss	(854)	(840)	

#### Tuck Triqq Reservoir Operations

Native Gas (Gross)	Month	Fiscal Year	Since Field
			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

March - 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>	20,169	0	0	0	0	20,110	40,279	39,657	\$3,404,941	
<b>Total FYTD</b>	35,540	1	0	0	0	38,851	74,392	73,242	\$6,192,496	
<b>Total CYTD</b>	20,169	0	0	0	0	20,110	40,279	39,657	\$3,404,941	
<b>Cumulative</b>	1,986,331	108,685	450	271,593	422,045	901,154	3,690,257	3,633,119	\$216,123,710	
<b>In Kind Transfers</b>							Month	FYTD	CYTD	Cumulative
Transferred							193	64,823	33,585	3,589,986
Volume outstanding							46,683			

\* 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	221,322	---	243,340	1,099	(\$27,997)
FYTD	1,663,358	---	1,768,456	1,063	(\$167,982)
Cumulative	45,114,234	---	49,066,072	1,088	(\$5,088,325)
<b>Minerals Management Service</b>					
No Longer Provides Natural Gas Marketing Services					
Cumulative	---	---	---	---	(\$179,913)
<b>ETC Marketing Ltd</b>					
Purchaser - Natural Gas					
Month	---	---	244,600	\$2.119583	\$518,450
FYTD	---	---	1,800,600	\$2.559834	\$4,609,238
Cumulative	---	---	48,915,487	\$4.369915	\$212,929,993
<b>Sandstone</b>					
Purchaser - Natural Gas Liquids					
Month	---	81,331	8,734	\$7.392133	\$64,563
FYTD	---	583,905	63,184	\$7.437350	\$469,922
Cumulative	---	13,812,142	1,470,283	\$10.954300	\$16,105,921
<b>Total</b>					
<b>Total month</b>	221,322	81,331	253,334	\$2.190846	\$555,016
<b>Total FYTD</b>	1,663,358	583,905	1,863,784	\$2.635057	\$4,911,178
<b>Total CYTD</b>	860,215	304,467	948,966	\$2.637720	\$2,503,106
<b>Cumulative</b>	45,114,234	13,812,142	50,385,770	\$4.457493	\$223,767,676

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

\*\*Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

March - 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	903,477
Volume outstanding		0			

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

## Table 6 - Helium Resources Evaluation

March - 2018

All Volumes in Mcf at 14.7 psia & 70°F

<b>Revenue Collected From Federal Leaseholds</b>	Month*	FYTD*
Fee Sales & Royalties	\$1,927,487	\$10,270,100
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$44,746	\$247,477
<b>Revenue Collected from Federal Lease Holds</b>	<b>\$1,922,640</b>	<b>\$10,314,847</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	78

### 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

March - 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	10,934	58.2%	6,368	65,968	29,925	32,183,334	37,914	60,115,750			
Crude Disposed	117,858	72.6%	85,613	572,368	287,282	53,289,752	37,721	26,535,668	\$598,084	Storage Fees	
Grade-A Rdlvrd	0		0	0	0	1,478,718			<u>\$162,913.67</u>	RMF Fees	
Net/Balance	(106,924)		(79,245)	(506,400)	(257,357)	(22,585,136)	193	33,580,082	3,215,168	\$760,997 \$4,421,254	
<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	3,394,188
Crude Disposed: In Kind Sales transferred for the month	(193)
Conservation Crude Sales/Reserve Sell Down transferred (m)	0
Gains and Losses for the month	(840)
Net/Balance of Purchased Helium Remaining for Sale	3,393,155

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

\*\*Rounded to nearest dollar

\*\* New Contracts



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

March - 2018

Field/CHEU Compressor Operations		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$2.12	\$2.54	\$4.70
Fuel used * (now includes field compression well head)	total MMBTU	7,046	50,076	1,860,777
Field Compression Fuel Cost *	\$dollars	\$0	\$0	\$658,447
CHEU Compression Fuel Cost *	\$dollars	\$8,111	\$73,178	\$4,536,628
CHEU Process Fuel Cost *	\$dollars	\$6,841	\$53,962	\$3,034,994
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	367	3,714	113,273
#2 Compressor run time *	hours	506	3,861	75,984
#3 Compressor run time *	hours	191	328	62,336

\* Field/CHEU Compressor Operations based on Mar 18 activity

Crude Helium Enrichment Unit (CHEU) CHEU Runtime	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	614	82.5%	4,120	94.3%	125,245
Producing residue gas	534	71.8%	3,985	91.2%	122,269
Producing helium product	529	71.1%	3,948	90.4%	118,602
Producing natural gas liquids	539	72.4%	3,974	91.0%	117,675

CHEU Charges	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservior Management Fees (RMF)	\$162,914	\$821,445	\$34,411,777
Total operating costs	(\$1,209,401)	(\$6,379,020)	(\$152,270,958)
Labor	\$118,650	\$712,121	\$16,985,576
Compressor fuel cost Feb 18	\$10,503	\$67,910	\$4,538,600
HEU fuel cost Feb 18	\$7,999	\$47,965	\$3,034,753
Electrical power cost Feb 18	\$155,198	\$782,766	\$22,804,275
Other	\$42,302	\$240,772	\$14,233,221
Sub Total - Items provided by BLM	\$334,652	\$2,044,019	\$65,006,022
Total - Cliffside Refiners, LP, GDA030001	(\$874,748)	(\$4,335,001)	(\$87,264,936)

\*Rounded to nearest dollar

CHEU Utility Usage	Month	FYTD	Cumulative
CheU Fuel Gas (Mcf) usage Mar 18	2,822	18,673	592,914
CheU Pure Water Usage (gallons) Mar 18	1,355	4,055	313,294
Electricity Metered (Kwh) consumed Feb 18	3,127,651	14,091,479	161,370,105