

# Bureau of Land Management

## Amarillo Field Office Helium Operations Statistical Report for

July - 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: 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

July - 2018

**Helium Enrichment Unit Operations**

Gas Processed	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	546,199	87,934	16.10%	5,312,711	852,908
Helium Product (Mcf*)	118,373	88,114	74.44%	1,152,083	856,281
Residue Natural Gas (Mcf*)	300,735	0	00.00%	2,854,633	40

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

**Natural Gas & Liquids Produced**

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf***)	298,441	2,861,294
NGL Sales (gallons)	106,985	1,018,818

\*\*\* 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Total Withdrawn (Mcf*)	547,766	88,186	16.10%	5,316,783	853,536
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*)		3,351,904			

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

**In Kind Helium**

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	0	104,414	73,176	3,629,577
Sale Volumes Outstanding (Mcf*)	61,238			

\* 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*)	11,008	7,283	66.16%	103149
Crude Disposed (Mcf*)	128,532	94,386	73.43%	961327
Net Balance (Mcf*)	(117,524)	(87,103)		(858,178)
Balance of Stored Helium End Of Month (Mcf*)		2,902,981		

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

**Revenue / Charges**

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$594,494	\$6,016,887
Reservoir Management Fees Billed (\$)	\$226,129	\$1,727,143

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

	Month	FYTD
Conservation Crude Helium Sales	\$0	\$1,815,000
In Kind Sales	\$0	\$10,849,052
Natural Gas & Liquid Sales	\$778,350	\$7,712,527

**Helium Resources Evaluation**

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$1,842,155	\$17,487,998
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 15

\*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

July - 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>547,766</b>	<b>237,737,042</b>	<b>88,186</b>	<b>44,187,117</b>	<b>135,494</b>	<b>58,607,052</b>	<b>287,736</b>	<b>120,684,770</b>	<b>30,936</b>	<b>12,247,727</b>	<b>5,415</b>	<b>2,010,376</b>
BIVINS A-3	Jul-18	1	10,961,113	0	3,548,629	0	2,772,147	0	4,159,384	0	407,301	0	73,653
BIVINS A-6	Jul-18	52,053	12,601,291	21,452	7,329,603	13,043	3,100,614	15,523	1,917,025	1,634	191,837	401	62,212
BIVINS A-13	Jul-18	37,450	9,339,397	12,019	4,742,523	9,392	2,394,522	14,133	1,931,976	1,618	214,959	287	55,416
BIVINS A-14	Jul-18	42,429	10,552,897	11,446	5,789,539	10,500	2,668,030	18,156	1,831,834	1,941	198,255	385	65,238
BIVINS A-4	Jul-18	35,824	14,426,307	3,734	2,495,780	8,557	3,494,508	20,880	7,544,392	2,249	761,320	404	130,307
BUSH A-2	Jul-18	8,738	13,976,818	401	2,018,327	2,175	3,432,383	5,484	7,624,539	621	786,048	57	115,520
Injection	Jul-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	Jul-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	Jul-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	Jul-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	Jul-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	Jul-18	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Jul-18	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Jul-18	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Jul-18	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Jul-18	23,023	14,511,001	768	1,898,115	5,344	3,548,377	15,043	8,129,826	1,633	812,782	234	121,902
BIVINS A-5	Jul-18	28,601	16,721,792	5,226	2,171,269	7,252	4,106,600	14,345	9,355,181	1,552	944,565	225	144,177
BIVINS A-7	Jul-18	16,563	12,132,911	4,938	2,881,365	4,356	3,058,044	6,704	5,538,812	492	566,312	73	88,378
BIVINS A-9	Jul-18	33,082	11,219,644	892	218,557	8,349	2,767,668	21,196	7,381,128	2,354	750,382	292	101,909
BIVINS A-11	Jul-18	22,221	6,914,214	653	152,839	5,563	1,722,050	14,208	4,508,858	1,571	465,120	227	65,348
BIVINS A-15	Jul-18	36,836	10,690,855	624	445,673	8,493	2,542,326	24,657	6,897,438	2,591	692,975	472	112,443
BIVINS B-1	Jul-18	34,683	8,876,543	814	319,515	8,467	2,154,210	22,643	5,720,523	2,333	589,163	426	93,132
BIVINS B-2	Jul-18	31,690	7,397,284	586	139,359	7,941	1,855,316	20,369	4,799,727	2,202	495,978	591	106,905
BUSH A-1	Jul-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	Jul-18	32,484	12,872,794	10,281	3,112,720	8,141	3,187,805	12,399	5,863,908	1,388	596,186	276	112,175
BUSH A-4	Jul-18	24,864	9,155,161	2,134	1,625,687	6,326	2,293,010	14,631	4,690,067	1,625	481,310	148	65,086
BUSH A-5	Jul-18	45,824	17,677,085	11,394	4,098,080	11,613	4,441,792	20,279	8,177,798	2,261	837,461	277	121,954
BUSH A-8	Jul-18	18,275	4,741,110	331	86,920	4,485	1,150,928	11,868	3,125,071	1,266	316,662	325	61,529
BUSH A-9	Jul-18	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Jul-18	19,162	4,855,564	425	139,319	4,578	1,161,762	12,574	3,174,830	1,312	323,031	273	56,621
BUSH B-1	Jul-18	3,964	3,431,124	68	64,289	919	813,840	2,645	2,292,561	291	226,830	41	33,603
FUQUA A-1	Jul-18	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Jul-18	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Jul-18	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Jul-18	0	0	0	0	0	0	0	0	0	0	0	0
field-wide pct's				16.10%	18.59%	24.74%	24.65%	52.53%	50.76%	5.65%	5.15%	0.99%	0.85%

Latest estimates of reserves and feed to HEU

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

As of EOM Jul-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	3.763	0.603
Injected to Date 2018	0.000	0.000
Amount of Raw Gas Available to CHEU	76.586	====> 8.573 total helium in reservoir
Estimated Bottom Hole Pressure	282.097	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

July - 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	Jul-18	546,199	102,659,015	87,934	24,153,666	135,106	25,711,996	286,913	46,869,914	30,847	5,026,980	5,399	896,460
Calculated Feed	Jul-18	547,766	102,518,296	88,186	24,146,993	135,494	25,670,177	287,736	46,759,537	30,936	5,043,047	5,415	898,541
Feed to Box	Jul-18	543,173	101,852,437	88,186	24,147,172	135,494	25,670,259	287,736	46,759,583	30,936	5,043,043	821	232,380
Cheu Product	Jul-18	118,373	30,577,990	88,114	23,787,712	27,182	5,974,306	2,335	604,044	3	872	738	211,056
Residue	Jul-18	300,735	46,757,866	0	2,171	7,124	1,144,813	266,503	41,491,034	27,108	4,118,585	0	1,263
Cold Box Vent	Jul-18	82,461	16,865,243	30	89,965	74,522	14,966,734	7,893	1,747,000	0	121	16	61,423
Flare/Boot Strap	Jul-18	82,461	7,381,492	30	50,744	74,522	6,221,736	7,893	1,009,169	0	93,586	16	6,256
Fuel From Cheu	Jul-18	6,498	1,395,223	3	452	168	40,468	5,240	1,130,876	1,086	223,427	0	0
Shrinkage/Loss	Jul-18	2,739	515,013	0	0	0	0	0	0	2,739	515,013	0	0
Unaccounted*	Jul-18	32,367	3,661,914	39	168,303	26,498	2,737,355	5,764	751,318	(0)	1,098	66	3,840

\*Before October 2004, the values are estimated

### Storage Operations

#### Inventory (contained helium)

	Government	Private
Beginning inventory	3,352,446	2,990,084
net acceptances + redeliveries	0	0
	0	(87,103)
In Kind Transfers	0	0
Conservation Crude Sales	0	0
Gain/loss	(542)	
Ending Inventory	3,351,904	2,902,981
Total Helium in Reservoir	8,573,235	
Total Helium in Storage	6,254,885	
Helium in native gas	2,318,350	

#### Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	30,297	22,286	73.56%
Measured to Pipeline (Private Plants)	11,008	7,290	66.22%
Measured from Pipeline (Private Plants)	128,532	94,386	73.43%
HEU Production	118,373	88,114	74.44%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	30,933	22,763	73.59%
Gain/Loss	(213)	(542)	

### Tuck Trigg 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

July - 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>	72,417	1	0	0	0	56,974	129,392	127,388	\$10,849,052		
<b>Total CYTD</b>	57,046	0	0	0	0	38,232	95,279	93,803	\$8,061,497		
<b>Cumulative</b>	2,023,209	108,685	450	271,593	422,045	919,276	3,745,256	3,687,265	\$220,780,266		
<b>In Kind Transfers</b>								Month	FYTD	CYTD	Cumulative
Transferred								0	104,414	73,176	3,629,577
Volume outstanding								61,238			

\* Volumes in Mcf at 14.7 psia & 70°F  
+ Volumes in Mcf at 14.65 psia & 60°F

\*\*Rounded to nearest dollar

## 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	298,441	---	328,422	1,100	\$0
FYTD	2,861,294	---	3,086,495	1,079	(\$167,982)
Cumulative	46,312,170	---	50,384,111	1,088	(\$5,088,325)
<b>Minerals Management Service</b>					
No Longer Provides Natural Gas Marketing Services					
Cumulative	---	---	---	---	(\$179,913)
<b>Tenaska</b>					
Purchaser - Natural Gas					
Month	---	---	328,400	\$2.129315	\$699,267
FYTD	---	---	3,127,254	\$2.260259	\$7,068,404
Cumulative	---	---	50,242,141	\$4.303473	\$215,389,160
<b>Sandstone</b>					
Purchaser - Natural Gas Liquids					
Month	---	106,985	11,412	\$6.929811	\$79,083
FYTD	---	1,018,818	109,697	\$7.403161	\$812,104
Cumulative	---	14,247,055	1,516,796	\$10.843979	\$16,448,104
<b>Total</b>					
	Natural Gas (Mcf)**	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$\$)
<b>Total month</b>	298,441	106,985	339,812	\$2.290531	<b>\$778,350</b>
<b>Total FYTD</b>	2,861,294	1,018,818	3,236,951	\$2.382652	<b>\$7,712,527</b>
<b>Total CYTD</b>	2,058,151	739,380	2,322,133	\$2.284303	<b>\$5,304,456</b>
<b>Cumulative</b>	46,312,170	14,247,055	51,758,937	\$4.393359	<b>\$226,569,026</b>

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

\*\*Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

July - 2018

**Helium & Natural Gas Sales**

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$)** (billed quarterly)	
<b>Conservation Helium</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 & 60°F

## Table 6 - Helium Resources Evaluation

July - 2018

All Volumes in Mcf at 14.7 psia & 70°F

<b>Revenue Collected From Federal Leaseholds</b>	Month*	FYTD*
Fee Sales & Royalties	\$1,842,730	\$17,449,454
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$38,544	\$409,675
<b>Revenue Collected from Federal Lease Holds</b>	<b>\$1,842,155</b>	<b>\$17,487,998</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	186

### 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

July - 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	11,008	66.2%	7,283	103,149	67,106	32,220,515	30,426	60,314,689			
Crude Disposed	128,532	73.4%	94,386	961,327	676,241	53,678,711	30,426	26,654,224	\$594,494	Storage Fees	
Grade-A Rdlvrd	0		0	0	0	1,478,718			<u>\$226,129.17</u>	RMF Fees	
Net/Balance	(117,524)		(87,103)	(858,178)	(609,135)	(22,936,914)	0	33,660,465	\$820,624	\$7,744,030	
<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	3,352,446
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	(542)
Net/Balance of Purchased Helium Remaining for Sale	3,351,904

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

\*\*Rounded to nearest dollar

\*\* New Contracts



## Table 8 - Compression & CHEU (Operations)

July - 2018

<b>Field/CHEU Compressor Operations</b>		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$2.13	\$2.28	\$4.66
Fuel used * (now includes field compression well head)	total MMBTU	7,511	81,350	1,892,051
Rental compressor(s) helium in fuel (Mcf)	Mcf	0	0	3645
#1 Compressor run time *	hours	744	6,311	115,870
#2 Compressor run time *	hours	743	6,626	78,749
#3 Compressor run time *	hours	0	811	62,819

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

<b>Crude Helium Enrichment Unit (CHEU) CHEU Runtime</b>	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	744	100.0%	7,048	96.6%	128,173
Producing residue gas	744	100.0%	6,913	94.8%	125,197
Producing helium product	744	100.0%	6,876	94.2%	121,530
Producing natural gas liquids	744	100.0%	6,902	94.6%	120,603

<b>CHEU Utility Usage</b>	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Jul 18	2,989	31,074	605,315
Cheu Pure Water Usage (gallons) Jul 18	0	6,851	316,090
Electricity Metered (Kwh) consumed Jun 18	2,788,452	25,892,926	173,171,552