# **Bureau of Land Management**



Amarillo Field Office Helium Operations Statistical Report for

July - 2019



#### 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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Compiled by: Joan Grochowina Amarillo, Texas Issued: October 2, 2019

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

Approved for Distribution: Amanda L. Clark Date: September 25, 2019

Helium Enrichment Unit Operations Gas Processed	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	485,220	73,966	15.24%	485,220	73,966
Helium Product (Mcf*)	102,718	74,534	72.56%	102,718	74,534
Residue Natural Gas (Mcf*)	259,403	0	00.00%	259,403	0

<sup>\*</sup> Volumes in Mcf at 14.65 psia & 60°F

### Natural Gas & Liquids Produced

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf***)	257,091	2,415,049
NGL Sales (gallons)	90,908	897,949

<sup>\*\*\*</sup> Volumes in Mcf at 14.73 psia & 60°F

<b>Bush Dome Reservoir Operations</b> Conservation gases from all sources	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Total Withdrawn (Mcf*)	483,307	73,674	15.24%	483,307	73,674
Crude Injection (Mcf*)	0	0	00.00%	0	0
Crude Production (Mcf*)	0	0	00.00%	0	0

<sup>\*</sup> 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	0	23,073,063
Conservation Crude Sale Volume Transferred (Mcf*)	0	0	0	0	1,203,477
Conservation Helium in Storage (EOM) (Mcf*)		2,853,997			

<sup>\*</sup> Volumes in Mcf at 14.65 psia & 60°F

In Kind Helium	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	0	129,889	88,025	3,810,137
Sale Volumes Outstanding (Mcf*)	46,699			

<sup>\*</sup> Volumes in Mcf at 14.65 psia & 60°F

Private Company Helium Storage Contracts	Month	Month		Annual	
Contact Activity	Gross Volume	Net Helium	Average Percent	Helium FYTD	
Crude Acquired (Mcf*)	10,815	7,839	72.48%	101227	
Crude Disposed (Mcf*)	110,354	79,774	72.29%	802374	
Net Balance (Mcf*)	(99,539)	(71,935)		(701,147)	
Balance of Stored Helium End Of Month (Mcf*)		2,525,276			

<sup>\*</sup> Volumes in Mcf at 14.65 psia & 60°F

### Revenue / Charges

Helium Storage Contracts (Charges Billed (\$)	Month	FYTD
Storage Fees Billed (\$)	\$466,280	\$4,906,333
Resource Management Fees Billed (\$)	\$312,458	\$2,812,126
Total Storage and RMF Collected	\$778,738	\$7.718.460

Conservation Helium - Natural Gas - Liquid Sales	(Charges Billed (\$)	Month	FYTD
Conservation Crude Helium Sales		\$0	\$0
In Kind Sales		\$0	\$11,704,092
Natural Gas & Liquid Sales		\$254,176	\$3,730,508

Helium Resources Evaluation	Month	FYTD		
Revenue Collected from Federal Lease Holds			\$1,949,707	\$20,102,238
Helium Sample Collection Report for month	Submitted - 0	Received - 0	Analyzed - 17	

Table 2 - Bush Dome Reservoir Operations

July - 2019

		Gross V	Vithdrawal	Net Helium	n Withdrawal	Nitro	ogen	Methane	Methane	Ethan	e plus	Other (CO2, Ar, H2)	
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
TOTAL		483,307	243,496,405	<u>73,674</u>	<u>45,078,460</u>	<u>119,406</u>	60,029,108	<u>257,185</u>	123,737,755	<u>28,134</u>	12,583,281	<u>4,908</u>	2,067,801
<b>BIVINS A-3</b>	Jul-19	0	10,961,114	0	3,548,629	0	2,772,147	0	4,159,384	0	407,301	0	73,653
<b>BIVINS A-6</b>	Jul-19	47,026	13,145,710	17,266	7,540,212	11,728	3,236,629	15,883	2,091,338	1,777	211,020	372	66,511
<b>BIVINS A-13</b>	Jul-19	33,952	9,727,982	10,269	4,863,911	8,504	2,491,927	13,371	2,081,620	1,546	232,127	261	58,396
<b>BIVINS A-14</b>	Jul-19	38,846	10,994,035	9,134	5,900,372	9,539	2,776,700	17,806	2,027,590	1,997	219,999	369	69,374
<b>BIVINS A-4</b>	Jul-19	30,997	14,795,935	2,940	2,532,693	7,380	3,582,711	18,320	7,761,379	1,995	784,624	362	134,529
BUSH A-2	Jul-19	3,910	14,068,844	168	2,022,381	974	3,455,310	2,458	7,682,378	285	792,650	26	116,125
Injection	Jul-19	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-19	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-19	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-19	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-19	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-19	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	#VALUE!	0	0	(35,617)
inj Bush A-2	Jul-19	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Jul-19	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
<b>BIVINS A-1</b>	Jul-19	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
<b>BIVINS A-2</b>	Jul-19	18,660	14,742,055	583	1,905,567	4,340	3,601,908	12,191	8,280,247	1,353	830,040	192	124,293
<b>BIVINS A-5</b>	Jul-19	24,929	17,020,068	4,372	2,224,231	6,293	4,182,078	12,624	9,505,996	1,432	961,123	209	146,640
<b>BIVINS A-7</b>	Jul-19	15,302	12,311,329	4,530	2,934,256	3,931	3,103,969	6,028	5,609,073	705	574,416	107	89,616
<b>BIVINS A-9</b>	Jul-19	28,098	11,561,815	818	228,186	7,140	2,854,366	17,972	7,599,581	1,925	774,738	242	104,945
<b>BIVINS A-11</b>	Jul-19	18,420	7,140,204	557	159,582	4,635	1,778,791	11,788	4,653,042	1,255	481,109	185	67,679
<b>BIVINS A-15</b>	Jul-19	33,345	11,087,061	564	452,379	7,729	2,633,968	22,383	7,162,372	2,253	720,812	416	117,530
BIVINS B-1	Jul-19	31,916	9,252,531	740	328,317	7,765	2,245,775	20,742	5,965,056	2,243	615,351	426	98,033
BIVINS B-2	Jul-19	28,118	7,724,131	524	145,507	7,096	1,936,230	18,099	5,010,837	1,878	519,315	521	112,243
BUSH A-1	Jul-19	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-19	28,171	13,211,956	8,790	3,218,855	7,038	3,272,713	10,847	5,994,419	1,246	610,820	250	115,150
BUSH A-4	Jul-19	22,581	9,426,713	1,739	1,648,041	5,742	2,362,331	13,447	4,851,239	1,517	498,498	135	66,604
BUSH A-5	Jul-19	41,982	18,165,810	9,953	4,216,936	10,613	4,565,447	18,979	8,396,168	2,176	862,245	261	125,015
BUSH A-8	Jul-19	16,138	4,936,328	295	90,469	3,995	1,199,014	10,492	3,251,652	1,073	330,180	283	65,014
BUSH A-9	Jul-19	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Jul-19	16,264	5,057,592	350	143,739	3,878	1,210,046	10,644	3,307,344	1,149	337,014	243	59,448
BUSH B-1	Jul-19	4,651	3,483,055	81	65,189	1,085	825,927	3,109	2,327,150	329	230,652	47	34,138
FUQUA A-1	Jul-19	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Jul-19	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Jul-19	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Jul-19	0	0	0	0	0	0	0	0	0	0	0	0
field-	wide pcts			15.24%	18.51%	24.71%	24.65%	53.21%	50.82%	5.82%	5.17%	1.02%	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-19	Volumes in BCF					
Initial Gas In P			330.040 48.830				
Injected 1924 t	o 1961		0.450				
Remaining Gas	s In Place 1961		281.660				
Left Behind Pip	e, 1961		82.060	====>	1.500	BCF of contained helium	
Remaining in P	Place, 1961		199.600				
Gas In Place 1	961		199.600				
Produced 1961	to July 2002		82.450				
Injected 1961 t	o July 2002		64.510		Net Helium		
Remaining Gas	s In Place July 2002		181.660		33.997		
Produced July	2002 through Dec 2	2002	1.096		0.743		
Production 200	3 - 18		108.029		26.256		
Injection 2003	- 18		(1.423)		(1.159)		
Produced to Da	ate 2019		3.132		0.475		
Injected to Date	e 2019		0.000		0.000		
Amount of Rav	Gas Available to C	HEU	70.826	====>	7.682	#VALUE!	est z-factor
Estimated Bott	om Hole Pressure		260.909				0.980

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

## Crude Helium Enrichment Unit Operations

		Gross Withdrawal Net Helium Withdrawal		Withdrawal	Nitr	ogen	Methane		Ethane plus		Other (CO2, Ar, H2)		
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
Measured Feed	Jul-19	485,220	108,405,407	73,966	25,043,147	119,878	27,130,875	258,203	49,915,892	28,246	5,361,758	4,927	953,735
Calculated Feed	Jul-19	483,307	108,275,272	73,674	25,038,294	119,406	27,091,674	257,185	49,810,935	28,134	5,378,427	4,908	955,941
Feed to Box	Jul-19	479,079	107,560,249	73,674	25,038,473	119,406	27,091,757	257,185	49,810,981	28,134	5,378,421	679	240,617
Cheu Product	Jul-19	102,718	31,787,624	74,534	24,672,692	25,368	6,265,440	2,155	629,595	2	915	659	218,982
Residue	Jul-19	259,403	49,756,997	0	2,172	6,701	1,211,413	228,957	44,152,306	23,746	4,389,842	0	1,265
Cold Box Vent	Jul-19	72,549	17,728,400	36	90,874	63,429	15,727,146	9,069	1,848,660	0	121	15	61,599
Flare/Boot Strap	Jul-19	72,549	8,244,649	36	51,653	63,429	6,982,148	9,069	1,110,829	0	93,587	15	6,432
Fuel From Cheu	Jul-19	6,165	1,472,826	3	491	160	42,478	4,972	1,193,463	1,030	236,394	0	0
Shrinkage/Loss	Jul-19	3,356	559,634	0	0	0	0	0	0	3,356	559,634	0	0
Unaccounted*	Jul-19	34,888	4,080,936	(899)	168,290	23,748	3,014,647	12,032	892,966	(0)	1,098	6	3,934

<sup>\*</sup>Before October 2004, the values are estimated

### Storage Operations

Inventory (contained helium)		
_	Government	Private
Beginning inventory	2,855,656	2,597,211
net acceptances +	0	0
redeliveries	0	(71,935)
In Kind Transfers	0	0
Conservation Crude Sales	0	0
Gain/loss	(1,659)	
Ending Inventory	2,853,997	2,525,276
Total Helium in Reservoir	7,681,892	
Total Helium in Storage	5,379,273	
Helium in native gas	2,302,619	

#### Crude Helium Pipeline

<u>_</u>	Gross	Net Helium	Percent
Beginning inventory	27,437	19,748	71.98%
Measured to Pipeline (Private Plants)	10,815	7,839	72.48%
Measured from Pipeline (Private Plant	110,354	79,774	72.29%
HEU Production	102,718	74,534	72.56%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	28,566	20,689	72.42%
Gain/Loss	(2,050)	(1,659)	

## Tuck Trigg Reservoir Operations

Since Field

Native Gas (Gross)	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

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

Table 4 - In Kind Helium Sales

July - 2019

	NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges I	Billed (\$)**
				In Kind H	elium					(billed quarterly)
Airgas Merchant G Month FYTD	ases, Contra	ct no. INC1	8-0102							
Air Liquide Helium Month FYTD	America, Inc	c., Contract	no. INC1	8-0104						
Air Products, L.P., Month FYTD	Contract no.	INC18-010	5							
Messer, LLC, Cont Month FYTD	tract no. INC1	8-0106								
Praxair, Inc., Conti Month FYTD	ract no. INC1	8-0112								
Matheson Tri-Gas, Month FYTD	Inc., Contrac	ct no. INC18	3-0114							
Global Gases Ame Month FYTD	erica, Contrac	t no. INC18	3-0116							
Total month	0	0		) 0	0	0	0	0		\$0
Total FYTD	62,363	69	C	-	0	67,208	129,640	127,632		\$11,704,092
Total CYTD	35,609	69	C	0	0	46,837	82,516	81,238		\$7,714,208
Cumulative	2,110,814	108,754	450	271,593	422,045	1,003,765	3,917,419	3,856,761		\$236,084,662
In Kind Trans	fers						Month	FYTD	CYTD	Cumulative
Transferred Volume outstanding							0 46,699	129,889	88,025	3,810,137

<sup>\*</sup> Volumes in Mcf at 14.7 psia & 70°F

\*\*Rounded to nearest dollar

### Natural Gas / Natural Gas Liquid Sales

	Natural Gas (Mcf)***	NGLs (gal)	Decatherms	Avg Btu Value	Charges I	Billed (\$)**
El Paso Natural Gas		Provides Measure	ed Firm/Interruptible Trai	nsportation Services		(billed monthly)
Month	257,091		282,901	1,100	\$0	
FYTD	2,415,049		2,662,399	1,102	\$0	
Cumulative	49,102,625		53,459,449	1,089	(\$5,088,325)	
Minerals Manageme	ent Service	No Longer Provides Na	tural Gas Marketing Ser	vices		
Cumulative					(\$179,913)	
ETC Marketing Ltd		Purchaser - Natural Ga	s	\$\$/Unit		
Month			305,300	\$0.681260	\$207,989	
FYTD			2,733,786	\$1.179492	\$3,224,478	
Cumulative			53,350,325	\$4.126722	\$219,335,401	
<u>Sandstone</u>		Purchaser - Natural Ga	s Liquids			
Month		90,908	9,985	\$4.625652	\$46,187	
FYTD		897,949	97,430	\$5.193778	\$506,030	
Cumulative		15,272,521	1,627,594	\$10.479027	\$17,055,601	
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)		Total (\$\$)
Total month	257,091	90,908	315,285	\$0.806178		\$254,176
Total FYTD	2,415,049	897,949	2,831,216	\$1.317635		\$3,730,508
Total CYTD	1,390,629	526,439	1,618,018	\$0.844493		\$1,366,405
Cumulative	49,102,625	15,272,521	54,977,919	\$4.218954		\$231,122,764

<sup>\*\*\*</sup> Volumes in Mcf at 14.73 psia & 60°F

<sup>+</sup> Volumes in Mcf at 14.65 psia & 60°F

Table 5 - Conservation Crude Sales/Reserve Sell-down

July - 2019

# Helium & Natural Gas Sales

	Award Volume* Outstanding* Sales*					
	Conservatio	n Helium			(billed quarterly)	
Air Liquide Helium America, Inc.						
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	335,217		335,217	\$25,454,815		
Air Products, L.P. Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	9,201,991	0	9,201,991	\$735,759,540		
Messer, LLC	3,201,001		3,201,001	ψ100,100,040		
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	6,310,276		6,310,276	\$437,286,782		
Keyes Helium Co., LLC						
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	1,016,747		1,016,747	\$70,653,572		
Matheson Tri-Gas, Inc.						
Month	0	0	0	\$0		
FYTD Cumulative	0	0	0	\$0 \$29,417,646		
Cumulative Praxair, Inc.	361,534		361,534	\$38,417,646		
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	5,577,644		5,577,644	\$426,522,384		
Global Gases America	3,0.1.,0.1.		3,011,011	ψ :_0,0,00 :		
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	37,767		37,767	\$3,798,165		
Airgas Merchant Gases						
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	15,667		15,667	\$1,488,365		
IACX Energy		2	•	ФО.		
Month FYTD	0	0	0	\$0 \$0		
Cumulative	0 16,220	0	16,220	\$0 \$1,720,180		
Uniper Global Commodities North Americ			10,220	\$1,720,100		
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	42,834		42,834	\$5,301,246		
Weil Group Resources LLC						
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative	22,500		22,500	\$2,791,500		
NAH USA Helum Marketing, Inc						
Month	0	0	0	\$0		
FYTD	0	0	0	\$0		
Cumulative  Progressive Chemical Technologies I.I.C.	12,834		12,834	\$1,611,246		
Progressive Chemical Technologies LLC  Month		0	0	<b>¢</b> 0		
FYTD	0	0	0	\$0 \$0		
Cumulative	1,500	U	1,500	\$262,500		
- Canada Co	1,500		1,500	Ψ202,000		
Total month	0	0	0		0	
Total FYTD	0	0	0		\$0	
Total CYTD	0		0		\$0	
Cumulative	23,073,063		23,073,063		\$1,762,102,941	
<b>Conservation Crude Transfers</b>		Month	FYTD	CYTD	Cumulative	
Transferred		0	0	0	1,203,477	
Volume outstanding		0			, 102, 11	
.9	* > / /	in Mof at 1.4 65 paid 9				

<sup>\*</sup> Volumes in Mcf at 14.65 psia & 60°F

All Volumes in Mcf at 14.7 psia & 70°F

Revenue Collected From Federal Leaseholds	Month*	FYTD*
Fee Sales & Royalties	\$1,944,688	\$20,049,268
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$52,969	<u>\$633,159</u>
Revenue Collected from Federal Lease Holds	\$1,949,707	\$20,102,238

<sup>\*</sup>Totals do not sum

Helium Analysis and Evaulation	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)	17	181

#### **U. S. Helium Production**

Domestic	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
U.S. Helium Exports (3)	2,520,645	2,451,207
US Helium Imports	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.

All Volumes in Mcf at 14.65 psia & 60°F											
	Metered Gas Gross Gas Helium Helium Helium		Transferred Gas		Stored	Charges Billed (\$)**					
	Gross Gasi	Month			m Cumulative	Helium EOM	(\$ Month	)^^ FYTD			
Total All Contra	acte*	IVIOLITI		FIID	CIID	Cumulative	IVIOTILIT	Cumulative	LOW	MOHIT	FIID
	10,815	72.5%	7,839	101,227	7E 160	27,441,391	6 150	61 075 675			
Crude Acquired					75,169		6,458	61,075,675		<b>\$400,000,47</b>	Ct
Crude Disposed	110,354	72.3%	79,774	802,374	546,589		6,458	26,821,707		\$466,280.17	Storage Fees
Grade-A Rdlvrd	0		0	0	0					<u>\$312,457.68</u>	RMF Fees
Net/Balance	(99,539)		(71,935)	(701,147)	(471,420)	(28,694,379)	0	34,253,968	2,525,276	\$778,737.85	\$7,718,460
Total Prior Cor	tracts (TER	MINATED)									
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			., .,			
				0	0				0		
Number of trailers		0040		0	U	9,034			U		
Messer, LLC, C	ontract no.	3249									
Crude Acquired											
Crude Disposed											
Net/Balance											
Praxair, Inc., C	ontract no. 3	3251									
Crude Acquired											
Crude Disposed											
Net/Balance	D 01	1 0050									
Air Products, L	P., Contrac	t no. 3256									
Crude Acquired											
Crude Disposed											
Net/Balance											
Air Liquide Hel	ium America	a, Inc., Con	tract no. 3	284				П			
Crude Acquired											
Crude Disposed											
Net/Balance											
	0- 110 0-		2207								
Keyes Helium	CO., LLC, CO	ontract no.	3287								
Crude Acquired											
Crude Disposed											
Net/Balance											
Matheson Tri-C	as, Inc., Co	ntract no. 3	3288								
Crude Acquired	, ,										
Crude Disposed											
Net/Balance											
	-1.0		2000								
Airgas Merchai	nt Gases, Co	ontract no.	3290								
Crude Acquired											
Crude Disposed											
Net/Balance											
Global Gases A	America, Co	ntract no. 3	293								
Crude Acquired											
Crude Disposed											
Net/Balance											
Linn Operating	, Inc., Contr	act no. 329	6					П			
Crude Acquired											
Crude Disposed											
Net/Balance											
IACX Energy, C	Contract no	3207									
	Jonitiaet 110.	OLU1									
Crude Acquired											
Crude Disposed											
Net/Balance											
Uniper Global	Commoditie	s North Am	nerica LLC	Contract	no. 3298						
Crude Acquired											
Crude Disposed											
Net/Balance											
Weil Group Res	sources LI (	C. Contract	no. 3299								
Crude Acquired		, . ,									
Crude Disposed											
Net/Balance											
	m Markatina	Inc Cart	rant no 33	00							
NAH USA Helui	iii warketing	, inc, cont	1461 110. 33	UU							
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Progressive Ch</b>	nemical Tecl	nnologies L	LC, Contr	act no. 330	)1						
Crude Acquired											
Crude Disposed											
Net/Balance											

Government H	Government Helium								
Remaining Crude Acquired beginning of the month 2,4									
Crude Disposed:	In Kind Sales transferred for the month	0							
	Conservation Crude Sales/Reserve Sell Down transferred (ı	0							
	Gains and Loses for the month	<u>(1,659)</u>							
Net/Balance of Po	2,853,997								

## Table 8 - Compression & CHEU (Operations)

July - 2019

Field/CHEU Compressor Operations		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$0.68	\$1.30	\$4.51
Fuel used * (now includes field compression well head)	total MMBTU	7,126	73,806	1,981,089
#1 Compressor run time *	hours	505	5,332	122,180
#2 Compressor run time *	hours	238	2,678	82,308
#3 Compressor run time *	hours	744	4,962	68,781

<sup>\*</sup> Field/CHEU Compressor Operations based on Jul 19 activity

Crude Helium Enrichment Unit (CHEU)	Month		FYTD		Cumulative
CHEU Runtime	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	744	100.0%	7,022	96.2%	136,657
Producing residue gas	744	100.0%	6,873	94.2%	133,506
Producing helium product	744	100.0%	6,720	92.1%	129,676
Producing natural gas liquids	744	100.0%	6,829	93.6%	128,867

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Jul 19	2,908	29,291	640,425
Cheu Pure Water Usage (gallons) Jul 19	2,800	8,044	324,208
Electricity Metered (Kwh) consumed Jun 19	2,883,035	28,830,350	207,767,972