

Bureau of Land Management Amarillo Field Office Helium Operations Statistical Report for



November - 2017

Distribution:

Fluid Minerals Group Manager, Washington Office
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-Resources Evaluation & Gas Analysis
-Division Of Helium Operations, -
Engineering and Technical Support

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Amarillo, Texas

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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, 2017

Table 1 - Summary of Helium Operations

November - 2017

Helium Enrichment Unit Operations

Gas Processed

	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	518,412	83,892	16.18%	1,071,642	174,131
Helium Product (Mcf*)	112,428	83,062	73.88%	233,006	172,608
Residue Natural Gas (Mcf*)	277,976	6	0.00%	576,271	6

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas & Liquids Produced

Gas Processed

	Month	FYTD
Natural Gas Sales (Mcf***)	275,736	571,723
NGL Sales (gallons)	103,397	205,372

*** 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Total Withdrawn (Mcf*)	528,513	85,504	16.18%	1,092,796	177,543
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*)		15,000	15,000	15,000	22,779,063
Conservation Crude Sale Volume Transferred (Mcf*)	0	15,000	15,000	900,002	900,002
Conservation Helium in Storage (EOM) (Mcf*)		3,429,097			

* Volumes in Mcf at 14.65 psia & 60°F

In Kind Helium

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	30,114	30,114	130,224	3,555,277
Sale Volumes Outstanding (Mcf*)	4,675			

* 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*)	20,569	13,444	65.36%	26079
Crude Disposed (Mcf*)	128,077	92,819	72.47%	193506
Net Balance (Mcf*)	(107,508)	(79,375)		(167,427)
Balance of Stored Helium End Of Month (Mcf*)		3,519,432		

* Volumes in Mcf at 14.65 psia & 60°F

Revenue / Charges

Helium Storage Contracts

(Charges Billed (\$))

	Month	FYTD
Storage Fees Billed (\$)	\$604,945	\$1,180,945
Reservoir Management Fees Billed (\$)	\$179,587	\$179,587

Enrichment Unit Charges

(Charges Billed (\$))

	Month	FYTD
Reservoir Management Fees (RMF)	\$179,587	\$179,587
Total operating costs	(\$979,535)	(\$1,894,801)
Sub Total - Items provided by BLM	\$336,700	\$687,025
Total - Cliffside Refiners, LP, GDA030001	(\$642,835)	(\$1,207,776)

Conservation Helium - Natural Gas - Liquid Sales

(Charges Billed (\$))

	Month	FYTD
Conservation Crude Helium Sales	\$1,815,000	\$1,815,000
In Kind Sales	\$0	\$0
Natural Gas & Liquid Sales	\$848,238	\$1,731,253

Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$1,615,715	\$3,164,244
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 11

*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

November - 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
TOTAL		528,513	233,513,055	85,504	43,511,124	131,003	57,561,794	275,924	118,466,545	30,797	12,005,747	5,285	1,967,845
BIVINS A-3	Nov-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	Nov-17	48,119	12,213,738	21,122	7,165,526	11,973	3,003,980	13,256	1,804,955	1,407	179,997	361	59,279
BIVINS A-13	Nov-17	34,140	9,057,950	11,110	4,651,768	8,473	2,324,382	12,857	1,825,513	1,445	202,986	256	53,301
BIVINS A-14	Nov-17	40,026	10,229,038	11,397	5,700,227	9,803	2,588,432	16,659	1,694,576	1,810	183,480	357	62,322
BIVINS A-4	Nov-17	38,970	14,145,077	4,307	2,466,006	9,281	3,426,913	21,930	7,381,076	2,930	743,950	522	127,133
BUSH A-2	Nov-17	43,598	13,897,201	3,209	2,013,810	10,930	3,412,446	26,030	7,575,288	3,100	780,663	329	114,994
Injection	Nov-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	Nov-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	Nov-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	Nov-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	Nov-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	Nov-17	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Nov-17	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Nov-17	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Nov-17	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Nov-17	20,293	14,337,425	715	1,892,288	4,785	3,507,944	13,195	8,016,507	1,396	800,542	202	120,144
BIVINS A-5	Nov-17	27,419	16,494,681	5,128	2,130,068	7,019	4,048,623	13,578	9,241,246	1,477	932,336	217	142,408
BIVINS A-7	Nov-17	4,497	12,009,595	1,324	2,846,017	1,171	3,025,980	1,776	5,489,370	196	560,657	30	87,571
BIVINS A-9	Nov-17	31,998	10,958,837	810	211,707	8,092	2,701,778	20,540	7,213,897	2,275	731,842	281	99,613
BIVINS A-11	Nov-17	21,287	6,737,200	617	147,678	5,344	1,677,675	13,612	4,395,667	1,498	452,636	215	63,543
BIVINS A-15	Nov-17	34,246	10,406,925	584	440,852	7,916	2,476,781	22,905	6,707,444	2,407	673,026	435	108,822
BIVINS B-1	Nov-17	31,346	8,609,069	747	313,369	7,793	2,088,846	20,373	5,547,016	2,069	570,259	364	89,579
BIVINS B-2	Nov-17	27,572	7,146,237	512	134,714	6,920	1,792,355	17,718	4,638,374	1,914	478,547	508	102,246
BUSH A-1	Nov-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	Nov-17	30,444	12,620,660	10,096	3,032,130	7,683	3,124,020	11,136	5,768,566	1,259	585,865	270	110,079
BUSH A-4	Nov-17	21,585	8,972,818	1,946	1,610,009	5,564	2,246,532	12,559	4,583,281	1,393	468,973	124	64,023
BUSH A-5	Nov-17	43,218	17,339,002	11,332	4,013,403	11,049	4,355,832	18,535	8,030,060	2,044	820,085	257	119,622
BUSH A-8	Nov-17	21,005	4,597,606	380	84,322	5,158	1,115,703	13,644	3,031,868	1,454	306,726	369	58,988
BUSH A-9	Nov-17	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Nov-17	6,326	4,703,824	128	135,963	1,488	1,125,334	4,002	3,075,482	545	312,601	163	54,445
BUSH B-1	Nov-17	2,425	3,392,921	42	63,629	563	804,970	1,618	2,267,083	178	224,027	25	33,212
FUQUA A-1	Nov-17	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Nov-17	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Nov-17	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Nov-17	63	0	0	0	3	0	51	0	9	0	0	0
field-wide pct's				16.18%	18.63%	24.79%	24.65%	52.21%	50.73%	5.83%	5.14%	1.00%	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 Nov-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	5.748	0.945
Injected to Date 2017	0.000	0.000
Amount of Raw Gas Available to CHEU	80.810	====> 9.249 total helium in reservoir
Estimated Bottom Hole Pressure	297.637	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

November - 2017

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	Nov-17	518,412	98,417,945	83,892	23,474,888	128,509	24,661,589	270,619	44,643,643	30,206	4,784,074	5,185	853,752
Calculated Feed	Nov-17	528,450	98,295,545	85,504	23,471,030	131,000	24,625,088	275,873	44,542,216	30,788	4,801,196	5,285	856,016
Feed to Box	Nov-17	523,937	97,666,120	85,504	23,471,209	131,000	24,625,170	275,873	44,542,261	30,788	4,801,194	771	226,286
Cheu Product	Nov-17	112,428	29,658,913	83,062	23,104,039	26,259	5,764,138	2,379	584,780	1	834	726	205,121
Residue	Nov-17	277,976	44,479,505	6	2,137	6,119	1,093,670	246,881	39,467,286	24,970	3,915,150	0	1,262
Cold Box Vent	Nov-17	77,266	16,236,400	88	89,509	68,541	14,399,097	8,622	1,686,379	0	118	16	61,296
Flare/Boot Strap	Nov-17	77,266	6,752,648	88	50,289	68,541	5,654,099	8,622	948,548	0	93,583	16	6,130
Fuel From Cheu	Nov-17	7,851	1,341,828	4	426	203	39,085	6,332	1,087,813	1,312	214,504	0	0
Shrinkage/Loss	Nov-17	4,198	489,986	0	0	0	0	0	0	4,198	489,986	0	0
Unaccounted*	Nov-17	38,105	3,449,715	1,643	180,459	27,523	2,543,320	8,914	721,000	(0)	1,102	25	3,834

*Before October 2004, the values are estimated

Storage Operations

Inventory (contained helium)

	Government	Private
Beginning inventory	3,474,343	3,553,693
net acceptances +	0	0
redeliveries	0	(79,375)
In Kind Transfers	(30,114)	30,114
Conservation Crude Sales	(15,000)	0
Gain/loss	(132)	
Ending Inventory	3,429,097	3,504,432
Total Helium in Reservoir	9,249,228	
Total Helium in Storage	6,948,529	
Helium in native gas	2,300,699	

Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	40,245	29,160	72.46%
Measured to Pipeline (Private Plants)	20,569	13,444	65.36%
Measured from Pipeline (Private Plant)	128,082	92,819	72.47%
HEU Production	112,428	83,062	73.88%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	45,114	32,715	72.52%
Gain/Loss	(45)	(132)	

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

November - 2017

	NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**	
In Kind Helium										
Airgas Merchant Gases, Contract no. INC18-0102										
Month										
FYTD										
Air Liquide Helium America, Inc., Contract no. INC18-0104										
Month										
FYTD										
Air Products, L.P., Contract no. INC18-0105										
Month										
FYTD										
Linde Gas North America, LLC, Contract no. INC18-0106										
Month										
FYTD										
Praxair, Inc., Contract no. INC18-0112										
Month										
FYTD										
Matheson Tri-Gas, Inc., Contract no. INC18-0114										
Month										
FYTD										
Global Gases America, Contract no. INC18-0116										
Month										
FYTD										
Total month	0	0	0	0	0	0	0	0	\$0	
Total FYTD	0	0	0	0	0	0	0	0	\$0	
Total CYTD	46,283	6	0	8	292	50,933	97,522	96,016	\$7,969,328	
Cumulative	1,950,792	108,683	450	271,593	422,045	862,302	3,615,864	3,559,877	\$209,931,214	
In Kind Transfers							Month	FYTD	CYTD	Cumulative
Transferred							30,114	30,114	130,224	3,555,277
Volume outstanding							4,675			

* 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 (\$)**
El Paso Natural Gas					
Provides Measured Firm/Interruptible Transportation Services (billed monthly)					
Month	275,736	---	303,531	1,101	(\$27,997)
FYTD	571,723	---	629,204	1,101	(\$55,994)
Cumulative	44,022,599	---	47,926,820	1,089	(\$4,976,337)
Minerals Management Service					
No Longer Provides Natural Gas Marketing Services					
Cumulative	---	---	---	---	(\$179,913)
ETC Marketing Ltd					
Purchaser - Natural Gas					
Month	---	---	303,400	\$2.600466	\$788,982
FYTD	---	---	630,300	\$2.574027	\$1,622,410
Cumulative	---	---	47,745,187	\$4.414470	\$209,943,165
Sandstone					
Purchaser - Natural Gas Liquids					
Month	---	103,397	11,255	\$7.752458	\$87,254
FYTD	---	205,372	22,364	\$7.370660	\$164,837
Cumulative	---	13,433,609	1,429,463	\$11.053687	\$15,800,837
Total					
Total month	275,736	103,397	314,655	\$2.695773	\$848,238
Total FYTD	571,723	205,372	652,664	\$2.652595	\$1,731,253
Total CYTD	3,097,657	1,076,741	3,392,387	\$2.686676	\$9,114,245
Cumulative	44,022,599	13,433,609	49,174,650	\$4.502611	\$220,587,752

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

**Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

November - 2017

Helium & Natural Gas Sales

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$) **	
Conservation Helium				(billed quarterly)	
<u>Air Liquide Helium America, Inc.</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	335,217		335,217	\$25,454,815	
<u>Air Products, L.P.</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	8,962,845		8,962,845	\$671,868,990	
<u>Linde Gas North America, LLC</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	6,289,226		6,289,226	\$433,603,032	
<u>Keyes Helium Co., LLC</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	1,013,471		1,013,471	\$70,080,272	
<u>Matheson Tri-Gas, Inc.</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	360,034		360,034	\$38,155,146	
<u>Praxair, Inc.</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	5,550,116		5,550,116	\$421,704,984	
<u>Global Gases America</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	36,267		36,267	\$3,535,665	
<u>Airgas Merchant Gases</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	15,667		15,667	\$1,488,365	
<u>IACX Energy</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	16,220		16,220	\$1,720,180	
<u>Uniper Global Commodities North America LLC</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	41,334		41,334	\$5,038,746	
<u>Weil Group Resources LLC</u>					
Month	0	(15,000)	15,000	\$1,815,000	
FYTD	0	0	15,000	\$1,815,000	
Cumulative	21,000		21,000	\$2,529,000	
<u>NAH USA Helium Marketing, Inc</u>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	11,334		11,334	\$1,348,746	
<u>Does not CHK w/ billing statement - ^</u>					
Total month	0	(15,000)	15,000	1,815,000	
Total FYTD	0	0	15,000	\$1,815,000	
Total CYTD	0		15,000	\$1,815,000	
Cumulative	22,779,063		22,779,063	\$1,678,646,449	
Conservation Crude Transfers					
Transferred		Month	FYTD	CYTD	Cumulative
Volume outstanding		15,000	15,000	900,002	900,002
		0			

* Volumes in Mcf at 14.65 psia & 60°F

Table 6 - Helium Resources Evaluation

November - 2017

All Volumes in Mcf at 14.7 psia & 70°F

Revenue Collected From Federal Leaseholds	Month*	FYTD*
Fee Sales & Royalties	\$1,613,234	\$3,125,013
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$39,231	\$75,981
Revenue Collected from Federal Lease Holds	\$1,615,715	\$3,164,244

*Totals do not sum

Helium Analysis and Evaluation	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)	11	26

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
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.

Table 7 - Helium Storage Contract Activity

November - 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	Cumulative					
Total All Contracts*											
Crude Acquired	20,569	65.4%	13,444	26,079	150,906	32,143,445	73,518	59,892,259			
Crude Disposed	128,077	72.5%	92,819	193,506	1,067,848	52,910,890	28,404	26,411,307			
Grade-A Rdlvrd	0		0	0	0	1,478,718					
Net/Balance	(107,508)		(79,375)	(167,427)	(916,942)	(22,246,163)	45,114	33,480,952	3,519,432	\$604,945 Storage Fees \$179,587.06 RMF Fees \$784,532 \$1,360,532	
Total Prior Contracts (TERMINATED)											
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		
Linde Gas North America, LLC, Contract no. 3249											
Crude Acquired											
Crude Disposed											
Net/Balance											
Praxair, Inc., Contract no. 3251											
Crude Acquired											
Crude Disposed											
Net/Balance											
Air Products, L.P., Contract no. 3256											
Crude Acquired											
Crude Disposed											
Net/Balance											
Air Liquide Helium America, Inc., Contract no. 3284											
Crude Acquired											
Crude Disposed											
Net/Balance											
Pioneer Natural Resources USA, Inc, Contract no. 3286											
Crude Acquired											
Crude Disposed											
Net/Balance											
Keyes Helium Co., LLC, Contract no. 3287											
Crude Acquired											
Crude Disposed											
Net/Balance											
Matheson Tri-Gas, Inc., Contract no. 3288											
Crude Acquired											
Crude Disposed											
Net/Balance											
Airgas Merchant Gases, Contract no. 3290											
Crude Acquired											
Crude Disposed											
Net/Balance											
Global Gases America, Contract no. 3293											
Crude Acquired											
Crude Disposed											
Net/Balance											
Linn Operating, Inc., Contract no. 3296											
Crude Acquired											
Crude Disposed											
Net/Balance											
IACX Energy, Contract no. 3297											
Crude Acquired											
Crude Disposed											
Net/Balance											
Uniper Global Commodities North America LLC, Contract no. 3298											
Crude Acquired											
Crude Disposed											
Net/Balance											
Weil Group Resources LLC, Contract no. 3299											
Crude Acquired											
Crude Disposed											
Net/Balance											
NAH USA Helium Marketing, Inc, Contract no. 3300											
Crude Acquired											
Crude Disposed											
Net/Balance											

Government Helium	
Remaining Crude Acquired beginning of the month	3,474,343
Crude Disposed: In Kind Sales transferred for the month	(30,114)
Conservation Crude Sales/Reserve Sell Down transferred (m)	(15,000)
Gains and Losses for the month	(132)
Net/Balance of Purchased Helium Remaining for Sale	3,429,097

*Includes In Kind and Conservation Crude transfers from Government storage

**Rounded to nearest dollar

** New Contracts

Table 8 - Compression & CHEU (Charges & Operations) November - 2017

Field/CHEU Compressor Operations		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$2.60	\$2.57	\$4.74
Fuel used * (now includes field compression well head)	total MMBTU	9,128	18,503	1,829,204
Field Compression Fuel Cost *	\$dollars	\$0	\$0	\$658,447
CHEU Compression Fuel Cost *	\$dollars	\$14,516	\$29,214	\$4,492,664
CHEU Process Fuel Cost *	\$dollars	\$9,217	\$18,425	\$2,999,457
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	707	1,451	111,010
#2 Compressor run time *	hours	658	1,402	73,525
#3 Compressor run time *	hours	50	50	62,058

* Field/CHEU Compressor Operations based on Nov 17 activity

Crude Helium Enrichment Unit (CHEU) CHEU Runtime	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	719	99.9%	1,463	99.9%	122,588
Producing residue gas	715	99.3%	1,459	99.7%	119,742
Producing helium product	709	98.5%	1,453	99.2%	116,107
Producing natural gas liquids	714	99.1%	1,458	99.6%	115,158

CHEU Charges	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservoir Management Fees (RMF)	\$179,587	\$179,587	\$33,933,387
Total operating costs	(\$979,535.26)	(\$1,894,801)	(\$147,786,739)
Labor	\$118,650	\$237,355	\$16,510,810
Compressor fuel cost Oct 17	\$14,698	\$27,383	\$4,500,010
HEU fuel cost Oct 17	\$9,208	\$18,121	\$3,005,287
Electrical power cost Oct 17	\$167,774	\$332,548	\$22,359,499
Other	\$26,370	\$71,618	\$14,064,067
Sub Total - Items provided by BLM	\$336,700	\$687,025	\$63,649,028
Total - Cliffside Refiners, LP, GDA030001	(\$642,835)	(\$1,207,776)	(\$84,137,711)

*Rounded to nearest dollar

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Nov 17	3,077	6,201	580,442
Cheu Pure Water Usage (gallons) Nov 17	658	775	310,014
Electricity Metered (Kwh) consumed Oct 17	285,597	3,141,561	150,584,229