

Bureau of Land Management

Amarillo Field Office

Helium Operations

Statistical Report

for

May - 2017



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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Amarillo, Texas

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Issued: October 20, 2017

"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: **October 19, 2017**

Table 1 - Summary of Helium Operations

May - 2017

Helium Enrichment Unit Operations

Gas Processed	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	504,751	79,384	15.73%	3,897,617	646,521
Helium Product (Mcf*)	107,101	78,636	73.42%	865,995	641,397
Residue Natural Gas (Mcf*)	270,508	0	00.00%	2,042,168	31

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas & Liquids Produced

Gas Processed	Month	FYTD
Natural Gas Sales (Mcf***)	269,232	2,205,710
NGL Sales (gallons)	94,060	744,187

*** 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Total Withdrawn (Mcf*)	509,613	80,155	15.73%	4,132,139	681,203
Crude Injection (Mcf*)	0	0	00.00%	9,764	7,204
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	825,000	0	21,952,729
Conservation Crude Sale Volume Transferred (Mcf*)	0	15,000	840,000	15,000	21,952,729
Conservation Helium in Storage (EOM) (Mcf*)		4,398,733			

* Volumes in Mcf at 14.65 psia & 60°F

In Kind Helium

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	2,346	102,972	63,397	3,488,450
Sale Volumes Outstanding (Mcf*)	2,265			

* 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*)	21,848	13,405	61.36%	170,329
Crude Disposed (Mcf*)	124,471	88,541	71.13%	783,238
Net Balance (Mcf*)	(102,623)	(75,136)		(612,909)
Balance of Stored Helium End Of Month (Mcf*)		3,075,660		

* Volumes in Mcf at 14.65 psia & 60°F

Revenue / Charges

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$671,936	\$5,512,247
Reservoir Management Fees Billed (\$)	\$172,999	\$1,210,995

Field Compressor Charges (Charges Billed (\$))

	Month	FYTD
Funded by the Refiners (provides for booster compression services)	\$0	\$0
Cliffside Refiners, LP, by Agreement #GDA010003 (reimburses BLM for fuel, labor, supplies, etc.)	\$0	\$0
Net-Total (Funded by the Refiners for compression costs.)	\$0	\$0

Enrichment Unit Charges (Charges Billed (\$))

	Month	FYTD
Reservoir Management Fees (RMF)	\$172,999	\$1,210,995
Total operating costs	(\$916,505)	(\$7,188,192)
Sub Total - Items provided by BLM	\$406,545	\$3,108,514
Total - Cliffside Refiners, LP, GDA030001	(\$509,960)	(\$4,079,678)

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

	Month	FYTD
Conservation Crude Helium Sales	\$0	\$0
In Kind Sales	\$0	\$5,313,132
Natural Gas & Liquid Sales	\$832,248	\$6,297,993

Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$3,250,570	\$11,964,912
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 19

*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

May - 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		509,613	230,205,566	80,155	42,966,615	126,930	56,738,372	268,846	116,745,446	28,850	11,819,058	4,833	1,936,075
BIVINS A-3	May-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	May-17	36,296	11,908,660	16,552	7,029,209	9,042	2,928,016	9,438	1,723,105	996	171,326	269	57,005
BIVINS A-13	May-17	31,983	8,843,486	10,656	4,581,483	7,942	2,271,148	11,829	1,745,178	1,319	193,974	238	51,703
BIVINS A-14	May-17	38,068	9,977,097	11,242	5,627,354	9,342	2,526,669	15,481	1,590,752	1,665	172,249	339	60,072
BIVINS A-4	May-17	37,593	13,901,053	4,324	2,438,019	9,089	3,367,855	21,530	7,242,123	2,252	728,670	399	124,387
BUSH A-2	May-17	42,748	13,627,955	3,476	1,992,986	10,767	3,344,658	25,371	7,414,764	2,840	762,434	293	113,114
Injection	May-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	May-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	May-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	May-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	May-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	May-17	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	May-17	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	May-17	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	May-17	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	May-17	19,757	14,211,456	693	1,887,805	4,625	3,478,266	12,885	7,934,695	1,357	791,812	197	118,878
BIVINS A-5	May-17	26,768	16,319,477	4,983	2,097,116	6,834	4,003,789	13,293	9,154,730	1,448	922,828	210	141,013
BIVINS A-7	May-17	6,751	11,971,323	2,022	2,834,655	1,760	3,016,022	2,639	5,474,365	286	558,967	44	87,314
BIVINS A-9	May-17	30,984	10,755,847	753	206,587	7,934	2,649,934	19,880	7,083,766	2,155	717,678	261	97,882
BIVINS A-11	May-17	23,988	6,597,908	702	143,571	6,099	1,642,348	15,305	4,306,811	1,650	443,001	232	62,177
BIVINS A-15	May-17	33,095	10,196,405	578	437,188	7,749	2,427,616	22,084	6,566,906	2,280	658,469	404	106,226
BIVINS B-1	May-17	33,048	8,409,062	778	308,617	8,178	2,039,217	21,424	5,417,272	2,260	556,789	407	87,168
BIVINS B-2	May-17	26,195	6,973,768	497	131,453	6,656	1,748,633	16,794	4,527,760	1,783	466,757	466	99,164
BUSH A-1	May-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	May-17	27,501	12,435,912	9,199	2,970,160	6,974	3,077,322	9,999	5,701,548	1,101	578,375	229	108,507
BUSH A-4	May-17	20,922	8,862,954	1,905	1,600,149	5,371	2,218,196	12,214	4,519,261	1,314	461,957	119	63,392
BUSH A-5	May-17	42,795	17,069,648	11,200	3,942,393	10,942	4,286,982	18,384	7,914,963	2,019	807,297	250	118,013
BUSH A-8	May-17	19,422	4,467,533	360	81,921	4,825	1,083,455	12,591	2,947,529	1,319	297,852	326	56,777
BUSH A-9	May-17	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	May-17	8,228	4,660,756	174	135,053	1,984	1,114,921	5,397	3,047,469	558	309,553	115	53,759
BUSH B-1	May-17	3,470	3,372,016	62	63,259	817	800,058	2,308	2,253,173	249	222,521	34	33,005
FUQUA A-1	May-17	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	May-17	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	May-17	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	May-17	7	0	0	0	0	0	6	0	1	0	0	0
field-wide pct's				15.73%	18.66%	24.91%	24.65%	52.75%	50.71%	5.66%	5.13%	0.95%	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 May-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	2.440	0.400
Injected to Date 2017	0.000	0.000
Amount of Raw Gas Available to CHEU	84.117	=====> 9.794 total helium in reservoir
Estimated Bottom Hole Pressure	309.805	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

May - 2017

Crude Helium Enrichment Unit Operations

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane		Ethane plus		Other (CO ₂ , Ar, H ₂)	
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
Measured Feed	May-17	504,751	95,160,168	79,384	22,938,496	125,720	23,850,479	266,286	42,948,518	28,575	4,600,219	4,787	822,456
Calculated Feed	May-17	509,606	94,988,371	80,155	22,926,522	126,929	23,801,679	268,840	42,821,373	28,849	4,614,550	4,833	824,247
Feed to Box	May-17	505,489	94,385,792	80,155	22,926,700	126,929	23,801,761	268,840	42,821,419	28,849	4,614,549	716	221,363
Cheu Product	May-17	107,101	28,949,399	78,636	22,574,436	25,554	5,603,409	2,217	570,234	10	810	684	200,510
Residue	May-17	270,508	42,732,920	0	2,069	5,901	1,051,567	240,547	37,918,769	24,060	3,759,259	0	1,256
Cold Box Vent	May-17	71,907	15,753,403	43	89,145	63,549	13,963,415	8,302	1,639,523	0	118	14	61,202
Flare/Boot Strap	May-17	71,907	6,269,652	43	49,925	63,549	5,218,417	8,302	901,692	0	93,583	14	6,036
Fuel From Cheu	May-17	7,814	1,298,791	4	404	202	37,970	6,302	1,053,103	1,306	207,313	0	0
Shrinkage/Loss	May-17	3,474	467,603	0	0	0	0	0	0	3,474	467,603	0	0
Unaccounted*	May-17	44,685	3,193,728	1,472	167,716	31,723	2,365,709	11,472	655,566	(0)	1,102	17	3,634

*Before October 2004, the values are estimated

Storage Operations

Inventory (contained helium)

	Government	Private
Beginning inventory	4,417,657	3,133,450
net acceptances +	0	0
redeliveries	0	(75,136)
In Kind Transfers	(2,346)	2,346
Conservation Crude Sales	(15,000)	15,000
Gain/loss	(1,578)	
Ending Inventory	4,398,733	3,075,660
Total Helium in Reservoir	9,793,737	
Total Helium in Storage	7,474,393	
Helium in native gas	2,319,344	

Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	38,075	26,719	70.17%
Measured to Pipeline (Private Plants)	21,848	13,567	62.10%
Measured from Pipeline (Private Plant)	124,921	88,541	70.88%
HEU Production	107,101	78,636	73.42%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	40,455	28,802	71.20%
Gain/Loss	(1,648)	(1,578)	

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

May - 2017

	NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**	
In Kind Helium										
AirGas South West, Contract no. INC98-0101									(billed quarterly)	
Month										
FYTD										
AirGas North Central, Contract no. INC98-0102										
Month										
FYTD										
AirGas Intermountain, Contract no. INC98-0103										
Month										
FYTD										
Air Liquide Helium America, Inc., Contract no. INC98-0104										
Month										
FYTD										
Air Products, L.P., Contract no. INC98-0105										
Month										
FYTD										
Linde Gas North America, LLC, Contract no. INC98-0106										
Month										
FYTD										
Corp Brothers, Inc., Contract no. INC98-0107										
Month										
FYTD										
FIBA Technologies, Inc., Contract no. INC98-0108										
Month										
FYTD										
General Air Service & Supply Co., Contract no. INC98-0109										
Month										
FYTD										
Jack B. Kelley Co., Contract no. INC98-0110										
Month										
FYTD										
Portland Welding Supply, Contract no. INC98-0111										
Month										
FYTD										
Praxair, Inc., Contract no. INC98-0112										
Month										
FYTD										
United States Welding, Inc., Contract no. INC98-0113										
Month										
FYTD										
Matheson Tri-Gas, Inc., Contract no. INC98-0114										
Month										
FYTD										
GT & S, Contract no. INC00-0115										
Month										
FYTD										
Global Gases America, Contract no. INC13-0116										
Month										
FYTD										
Total month	0	0	0	0	0	0	0	0	\$0	
Total FYTD	28,328	6	0	8	292	35,756	64,389	63,396	\$5,313,132	
Total CYTD	9,840	6	0	8	292	17,053	27,198	26,779	\$2,222,657	
Cumulative	1,914,349	108,683	450	271,593	422,045	828,422	3,545,541	3,490,640	\$204,184,543	
In Kind Transfers							Month	FYTD	CYTD	Cumulative
Transferred							2,346	102,972	63,397	3,488,450
Volume outstanding							2,265			

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

**Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

May - 2017

Helium & Natural Gas Sales

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$)*** (billed quarterly)	
Conservation Helium					
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	419,309	\$44,881,063	
Cumulative	8,448,745		8,448,745	\$610,716,090	
Linde Gas North America, LLC					
Month	0	0	0	\$0	
FYTD	0	0	140,334	\$15,015,738	
Cumulative	6,170,987		6,170,987	\$419,707,591	
Keyes Helium Co., LLC					
Month	0	0	0	\$0	
FYTD	0	0	21,844	\$2,337,308	
Cumulative	998,957		998,957	\$68,353,106	
Matheson Tri-Gas, Inc.					
Month	0	0	0	\$0	
FYTD	0	0	46,700	\$4,996,900	
Cumulative	328,700		328,700	\$34,316,400	
Praxair, Inc.					
Month	0	0	0	\$0	
FYTD	0	0	183,513	\$19,635,891	
Cumulative	5,403,189		5,403,189	\$404,125,671	
Linde Gas, LLC discontinued 10 2008					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	200,000		200,000	\$11,035,000	
Global Gases America					
Month	0	0	0	\$0	
FYTD	0	0	13,300	\$1,423,100	
Cumulative	36,267		36,267	\$3,535,665	
Airgas Merchant Gases					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	15,667		15,667	\$1,488,365	
IACX Energy					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	15,000		15,000	\$1,575,000	
Total month	0	0	0		0
Total FYTD	0	0	825,000		\$0
Total CYTD	0	0	0		\$0
Cumulative	21,952,729		21,952,729		\$1,580,307,703
Conservation Crude Transfers					
Transferred		Month	FYTD	CYTD	Cumulative
Volume outstanding		15,000	840,000	15,000	21,952,729

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas/Liquid Sales

	Natural Gas (Mcf)***	NGLs (gal)	Decatherms	Avg Btu Value	Charges Billed (\$)*** (billed monthly)	
El Paso Natural Gas						
		Provides Measured Firm/Interruptible Transportation Services				
Month	269,232	---	295,207	1,096	(\$27,997)	
FYTD	2,205,710	---	2,066,868	937	(\$223,976)	
Cumulative	42,288,258	---	46,021,408	1,088	(\$4,808,355)	
Minerals Management Service						
		No Longer Provides Natural Gas Marketing Services				
Cumulative	---	---	---	---	(\$179,913)	
ETC Marketing Ltd						
		Purchaser - Natural Gas			\$/Unit	
Month	---	---	290,700	\$2.787559	\$810,344	
FYTD	---	---	2,221,514	\$2.735862	\$6,077,756	
Cumulative	---	---	45,846,619	\$4.489720	\$205,011,932	
Sandstone						
		Purchaser - Natural Gas Liquids				
Month	---	94,060	9,780	\$5.102433	\$49,902	
FYTD	---	744,187	77,706	\$5.716587	\$444,213	
Cumulative	---	12,824,581	1,363,695	\$11.280607	\$15,383,307	
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$\$)	
Total month	269,232	94,060	300,480	\$2.769729	\$832,248	
Total FYTD	2,205,710	744,187	2,299,220	\$2.739187	\$6,297,993	
Total CYTD	1,363,316	467,713	1,428,051	\$2.754429	\$3,933,465	
Cumulative	42,288,258	12,824,581	47,210,314	\$4.580218	\$215,406,971	

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

**Rounded to nearest dollar

Table 6 - Helium Resources Evaluation

May - 2017

All Volumes in Mcf at 14.7 psia & 70°F

Revenue Collected From Federal Leaseholds	Month*	FYTD*
Fee Sales & Royalties	\$3,242,394	\$11,919,360
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$45,552	\$300,829
Revenue Collected from Federal Lease Holds	\$3,250,570	\$11,964,912

*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	1
Total Number of Other Samples Analyzed (2)	19	130

U. S. Helium Production

<i>Domestic</i>	FY Volume	CY Volume
2012 Helium Sold	4,531,140	4,645,930
2013 Helium Sold	4,725,187	4,623,130
2014 Helium Sold	3,815,746	3,463,698
2015 Helium Sold	3,282,185	3,104,695
2016 Helium Sold	4,559,100	4,644,278
Estimated Helium Resources as of 12/31/2006(Mcf)		732,000,000

	FY-2015	CY-2015
U.S. Helium Exports (3)	2,423,915	2,334,648
US Helium Imports	491,006	565,023

(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

May - 2017

All Volumes in Mcf at 14.65 psia & 60°F

	Metered Gas					Transferred Gas		Stored Helium EOM	Charges Month	Billed (\$)**			
	Gross Gas	Helium %	Helium	Helium		Helium				Month	FYTD	Month	FYTD
				FYTD	CYTD	Cumulative	Cumulative						
Total All Contracts*													
Crude Acquired	21,848	61.4%	13,405	170,329	78,561	32,071,100	25,516	56,803,694					
Crude Disposed	124,471	71.1%	88,541	783,238	472,446	52,315,488	8,170	30,894,903					
Grade-A Rdlvrd	0		0	0	0	1,478,718							
Net/Balance	(102,623)		(75,136)	(612,909)	(393,885)	(21,723,106)	17,346	25,908,791	3,075,660	\$844,934.88	\$6,723,242		
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													
IACX Energy, Contract no. 3297													
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													
Air Liquide Helium America, Inc., Contract no. 3284													
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													

Government Helium		
Remaining Crude Acquired beginning of the month		4,417,657
Crude Disposed: In Kind Sales transferred for the month		(2,346)
Conservation Crude Sales/Reserve Sell Down transferred (month)		(15,000)
Gains and Losses for the month		(1,578)
Net/Balance of Purchased Helium Remaining for Sale		4,398,733

*Includes In Kind and Conservation Crude transfers from Government storage

**Rounded to nearest dollar

Table 8 - Compression & CHEU (Charges & Operations)

May - 2017

Field/CHEU Compressor Operations		Charges Billed (\$)*		
		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$2.79	\$2.76	\$4.80
Fuel used * (now includes field compression well head)	total MMBTU	9,039	68,268	1,779,191
Field Compression Fuel Cost *	\$dollars	\$0	\$0	\$658,447
CHEU Compression Fuel Cost *	\$dollars	\$16,380	\$115,817	\$4,411,821
CHEU Process Fuel Cost *	\$dollars	\$8,836	\$72,863	\$2,946,537
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	324	4,813	107,079
#2 Compressor run time *	hours	721	3,804	69,267
#3 Compressor run time *	hours	425	2,259	61,583

* Field/CHEU Compressor Operations based on May 17 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%	5,661	97.1%	118,229
Producing residue gas	744	100.0%	5,602	96.1%	115,409
Producing helium product	744	100.0%	5,498	94.3%	111,843
Producing natural gas liquids	744	100.0%	5,556	95.3%	110,866

CHEU Charges	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservior Management Fees (RMF)	\$172,999	\$1,210,995	\$33,042,118
Total operating costs	(\$916,505)	(\$7,188,192)	(\$144,018,350)
Labor	\$161,237	\$1,289,893	\$15,628,509
Compressor fuel cost Apr 17	\$14,998	\$108,171	\$4,415,366
HEU fuel cost Apr 17	\$8,663	\$72,903	\$2,952,370
Electrical power cost Apr 17	\$138,066	\$968,895	\$21,419,875
Other	\$83,582	\$668,653	\$13,727,912
Sub Total - Items provided by BLM	\$406,545	\$3,108,514	\$61,353,387
Total - Cliffside Refiners, LP, GDA030001	(\$509,960)	(\$4,079,678)	(\$82,664,963)

*Rounded to nearest dollar

CHEU Utility Usage	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage May 17	2,741	23,105	562,744
Cheu Pure Water Usage (gallons) May 17	222	9,942	304,390
Electricity Metered (Kwh) consumed Apr 17	2,612,372	16,294,432	136,411,650