

Bureau of Land Management

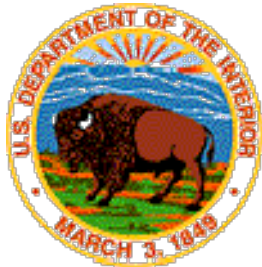
Amarillo Field Office

Helium Operations

Statistical Report

for

June - 2021



Distribution:

Fluid Minerals Group Manager, Washington Office
NMSO, New Mexico State Director
NMSO, Associate State Director
NMSO, Petroleum Engineer
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-Federal Leased Lands
-Resources Evaluation & Gas Analysis
-Division Of Helium Operations, -
Engineering and Technical Support

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Amarillo, Texas

Issued: June 2, 2022

**"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:

May 27, 2022

Table 1 - Summary of Helium Operations

June - 2021

Helium Enrichment Unit Operations

Gas Processed

	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	398,123	49,733	12.49%	3,269,890	407,536
Helium Product (Mcf*)	71,118	51,307	72.14%	605,034	423,681
Residue Natural Gas (Mcf*)	149,820	0	00.00%	1,453,915	19

* Volumes in Mcf at 14.65 psia & 60°F

Natural Gas & Liquids Produced

Gas Processed

	Month	FYTD
Natural Gas Sales (Mcf****)	147,201	1,427,983
NGL Sales (gallons)	68,308	567,951

*** 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Total Withdrawn (Mcf*)	394,691	45,708	11.58%	3,229,347	389,907
Crude Injection (Mcf*)	12,939	9,274	71.67%	109,519	76,461
Crude Production (Mcf*)	0	0	71.26%	589	392

* Volumes in Mcf at 14.65 psia & 60°F

Storage Operations

In Kind Helium

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	5,536	171,995	123,584	4,239,053
Sale Volumes Outstanding (Mcf*)	(29,474)			

* 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*)	26,850	19,370	72.14%	153,750
Crude Disposed (Mcf*)	70,924	51,182	72.16%	443,887
Net Balance (Mcf*)	(44,074)	(31,812)		(290,137)
Balance of Stored Helium End Of Month (Mcf*)		2,130,671		

* Volumes in Mcf at 14.65 psia & 60°F

Revenue / Charges

Helium Storage Contracts (Charges Billed (\$))

	Month	FYTD
Storage Fees Billed (\$)	\$627,604	\$5,530,018
Resource Management Fees Billed (\$)	\$263,097	\$2,104,786
Total Storage and RMF Collected	\$890,701	\$7,634,804

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

	Month	FYTD
In Kind Sales	\$5,451,732	\$11,812,482
Natural Gas & Liquid Sales	\$553,277	\$8,579,431

Helium Resources Evaluation

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$2,138,991	\$18,181,894
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 16

*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

June - 2021

		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		394,691	252,109,470	45,708	46,224,193	115,939	62,227,054	206,196	128,436,606	22,781	13,065,968	4,067	2,155,648
BIVINS A-3	Jun-21	0	10,961,114	0	3,548,629	0	2,772,147	0	4,159,384	0	407,301	0	73,653
BIVINS A-6	Jun-21	5,124	13,523,561	3,326	7,687,903	1,568	3,332,935	201	2,209,188	0	224,104	28	69,430
BIVINS A-13	Jun-21	32,344	10,375,812	3,577	5,028,749	26,859	2,720,241	1,763	2,306,480	(0)	257,284	146	63,060
BIVINS A-14	Jun-21	35,190	11,732,522	6,779	6,052,561	8,549	2,956,654	17,527	2,386,359	1,991	260,411	345	76,538
BIVINS A-4	Jun-21	27,105	15,380,364	2,362	2,585,164	6,442	3,722,655	16,219	8,112,463	1,766	819,247	317	140,834
BUSH A-2	Jun-21	6,523	14,196,317	259	2,027,597	1,611	3,486,551	4,082	7,761,340	523	803,502	48	117,327
Injection	Jun-21	12,939	66,775,025	9,274	48,230,362	3,281	17,202,751	305	787,033	0	47	79	554,832
inj Bivins A-3	Jun-21	0	(25,652,315)	0	(18,384,452)	0	(6,554,549)	0	(332,777)	0	0	0	(380,537)
inj Bivins A-6	Jun-21	(12,939)	(24,710,286)	(9,284)	(17,878,227)	(3,272)	(6,567,501)	(303)	(149,797)	(1)	(84)	(79)	(114,676)
inj Bivins A-13	Jun-21	0	(6,493,107)	0	(4,707,259)	0	(1,657,938)	0	(122,863)	0	(51)	0	(4,996)
inj Bivins A-14	Jun-21	0	(6,501,333)	0	(4,767,421)	0	(1,602,106)	0	(126,303)	0	(7)	0	(5,497)
inj Bivins A-4	Jun-21	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Jun-21	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Jun-21	0	1,257,144	0	926,242	0	270,854	0	48,257	0	3,205	0	8,588
BIVINS A-1	Jun-21	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Jun-21	18,210	15,116,532	498	1,917,093	4,251	3,692,361	11,970	8,534,435	1,312	846,278	179	126,364
BIVINS A-5	Jun-21	21,767	17,483,773	4,106	2,307,144	5,485	4,299,394	10,755	9,740,911	1,237	985,793	184	150,530
BIVINS A-7	Jun-21	13,281	12,599,966	4,010	3,020,774	3,392	3,177,899	5,149	5,721,721	629	587,553	101	92,019
BIVINS A-9	Jun-21	24,193	12,081,530	767	243,919	6,071	2,985,793	15,388	7,930,119	1,742	811,987	224	109,712
BIVINS A-11	Jun-21	15,772	7,488,894	478	169,992	3,912	1,865,794	10,077	4,875,853	1,136	505,894	169	71,361
BIVINS A-15	Jun-21	29,281	11,642,706	478	461,531	6,683	2,761,479	19,658	7,535,030	2,077	759,923	385	124,744
BIVINS B-1	Jun-21	27,573	9,845,316	617	341,937	6,701	2,391,949	17,945	6,355,840	1,934	648,398	377	107,192
BIVINS B-2	Jun-21	23,519	8,244,254	429	155,030	5,866	2,066,506	15,100	5,344,893	1,651	555,498	474	122,326
BUSH A-1	Jun-21	0	5,721,962	0	104,140	0	1,356,677	0	3,830,281	0	374,216	0	56,647
BUSH A-3	Jun-21	23,654	13,713,991	8,489	3,379,732	5,905	3,399,717	8,125	6,188,549	933	627,658	203	118,334
BUSH A-4	Jun-21	21,698	9,880,630	1,202	1,678,048	5,524	2,478,374	13,329	5,127,267	1,514	527,650	128	69,291
BUSH A-5	Jun-21	36,120	18,947,486	7,703	4,394,411	9,123	4,763,848	17,103	8,758,920	1,966	900,424	224	129,884
BUSH A-8	Jun-21	13,615	5,241,146	244	95,946	3,336	1,273,968	8,826	3,449,283	950	351,342	259	70,608
BUSH A-9	Jun-21	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Jun-21	14,359	5,377,845	305	150,697	3,421	1,286,995	9,397	3,518,480	1,018	357,745	218	63,928
BUSH B-1	Jun-21	5,362	3,593,573	90	67,071	1,232	851,499	3,580	2,400,918	401	238,778	58	35,306
FUQUA A-1	Jun-21	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Jun-21	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Jun-21	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Jun-21	302	0	3	0	151	0	131	0	15	0	2	0
field-wide pcts				11.58%	18.33%	29.37%	24.68%	52.24%	50.94%	5.77%	5.18%	1.03%	0.86%

Latest estimates of reserves and feed to HEU

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

As of EOM Jun-21 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 - 20	117.747	27.641
Injection 2003 - 20	(1.660)	(1.325)
Produced to Date 2021	2.027	0.235
Injected to Date 2021	(0.064)	(0.044)
Amount of Raw Gas Available to CHEU	62.514	=====> 6.747 total helium in reservoir
Estimated Bottom Hole Pressure	230.327	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

June - 2021

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	Jun-21	398,123	117,043,604	49,733	26,205,788	104,636	29,297,893	215,638	54,639,172	23,969	5,858,411	4,147	1,042,341
Calculated Feed	Jun-21	399,661	116,982,159	49,031	26,253,355	117,249	29,313,706	206,518	54,510,160	22,769	5,860,821	4,093	1,044,117
Feed to Box	Jun-21	396,112	116,190,399	49,031	26,253,533	117,249	29,313,788	206,518	54,510,206	22,769	5,860,815	545	252,056
Cheu Product	Jun-21	71,118	33,453,251	51,307	25,853,343	17,543	6,701,472	1,822	668,106	4	960	442	229,370
Residue	Jun-21	149,820	53,599,821	0	2,277	4,206	1,315,038	131,902	47,538,890	13,673	4,742,259	39	1,357
Cold Box Vent	Jun-21	57,516	18,984,863	49	94,303	50,737	16,796,491	6,691	2,031,795	1	342	37	61,932
Flare/Boot Strap	Jun-21	16,315	8,860,339	398	63,136	4,363	7,345,921	10,379	1,332,523	1,168	112,115	7	6,643
Fuel From Cheu	Jun-21	6,202	1,608,336	3	559	161	45,988	5,002	1,302,751	1,036	259,038	0	0
Shrinkage/Loss	Jun-21	6,887	643,127	0	0	0	0	0	0	6,887	643,127	0	0
Unaccounted*	Jun-21	88,253	5,350,475	(2,726)	185,391	40,239	3,510,866	50,722	1,648,918	(1)	878	20	4,422

*Before October 2004, the values are estimated

Storage Operations

Inventory (contained helium)

	Government	Private
Beginning inventory	2,299,339	2,156,947
net acceptances + redeliveries	0	0
In Kind Transfers	(5,536)	5,536
Conservation Crude Sales	0	0
Gain/loss	(5,453)	0
Ending Inventory	2,288,351	2,130,662
Total Helium in Reservoir	6,746,734	
Total Helium in Storage	4,419,013	
Helium in native gas	2,327,721	

Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	38,327	27,172	70.90%
Measured to Pipeline (Private Plants)	26,850	19,370	72.14%
Measured from Pipeline (Private Plant)	70,924	51,191	72.18%
HEU Production	71,118	51,307	72.14%
Injection	12,939	9,274	71.67%
Production	0	0	71.26%
Ending Inventory	44,253	31,931	72.16%
Gain/Loss	(8,179)	(5,453)	66.67%

Tuck Triqq Reservoir Operations

Native Gas (Gross)	Month	Since Field	
		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

June - 2021

NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**		
In Kind Helium (billed quarterly)										
Airgas Merchant Gases, Contract no. INC21-0102										
Month										
FYTD										
Air Liquide Helium America, Inc., Contract no. INC22-0104										
Month										
FYTD										
Air Products, L.P., Contract no. INC22-0105										
Month										
FYTD										
Messer, LLC, Contract no. INC22-0106										
Month										
FYTD										
Linde, Contract no. INC22-0112										
Month										
FYTD										
Matheson Tri-Gas, Inc., Contract no. INC22-0114										
Month										
FYTD										
Global Gases America, Contract no. INC22-0116										
Month										
FYTD										
Total month										
31,872	27	4	3	0	24,030	55,936	55,068	\$5,451,732		
Total FYTD										
73,500	53	11	3	0	47,632	121,199	119,321	\$11,812,482		
Total CYTD										
73,500	53	11	3	0	47,632	121,199	119,321	\$11,812,482		
Cumulative										
2,298,408	108,977	466	271,598	422,045	1,174,220	4,275,713	4,209,504	\$270,352,154		
In Kind Transfers							Month	FYTD	CYTD	Cumulative
Transferred							5,536	171,995	123,584	4,239,053
Volume outstanding							(29,474)			

* 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 (\$)**
El Paso Natural Gas					
Provides Measured Firm/Interruptible Transportation Services (billed monthly)					
Month	147,201	---	161,740	1,099	\$0
FYTD	1,427,983	---	1,571,912	1,101	\$0
Cumulative	52,891,142	---	57,630,702	1,090	(\$5,088,325)
Minerals Management Service					
No Longer Provides Natural Gas Marketing Services					
Cumulative	---	---	---	---	(\$179,913)
ETC Marketing Ltd					
Purchaser - Natural Gas					
Month	---	---	164,700	\$2.939135	\$484,076
FYTD	---	---	1,616,990	\$5.059840	\$8,181,711
Cumulative	---	---	57,638,849	\$4.013825	\$230,525,694
Sandstone					
Purchaser - Natural Gas Liquids					
Month	---	68,308	7,456	\$9.281373	\$69,202
FYTD	---	567,951	61,467	\$6.470457	\$397,720
Cumulative	---	16,777,585	1,790,632	\$9.941399	\$17,801,386
Total					
	Natural Gas (Mcf)***	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$\$)
Total month	147,201	68,308	172,156	\$3.213814	\$553,277
Total FYTD	1,427,983	567,951	1,678,457	\$5.111499	\$8,579,431
Total CYTD	885,728	358,933	1,044,365	\$6.919128	\$7,226,095
Cumulative	52,891,142	16,777,585	59,429,481	\$4.103778	\$243,058,842

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

**Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

June - 2021

Helium & Natural Gas Sales

This Table has been suspended as of 9/30/2018, BLM is no longer selling crude helium on the Open Market per Helium Stewardship Act of 2013.

Table 6 - Helium Resources Evaluation

June - 2021

All Volumes in Mcf at 14.7 psia & 70°F

Revenue Collected From Federal Leaseholds	Month*	FYTD*
Fee Sales & Royalties	\$2,136,368	\$18,169,989
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$11,905	\$408,324
Revenue Collected from Federal Lease Holds	\$2,138,991	\$18,181,894

*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)	16	102

U. S. Helium Production

Domestic

	CY Volume
2016 Helium Sold	3,294,447
2017 Helium Sold	3,703,527
2018 Helium Sold	3,529,583
2019 Helium Sold	3,229,482
2020 Helium Sold	2,972,672
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

June - 2021

All Volumes in Mcf at 14.65 psia & 60°F

	Metered Gas						Transferred Gas Helium		Stored Helium EOM	Charges Billed (\$)**	
	Gross Gas	Helium % Month	Helium	FYTD	Helium CYTD	Cumulative	Month	Cumulative		Month	FYTD
Total All Contracts*											
Crude Acquired	26,850	72.1%	19,370	153,750	106,453	27,767,790	47,991	62,066,204			
Crude Disposed	70,924	72.2%	51,182	443,887	289,459	55,806,972	42,455	27,241,217		\$627,604.13	Storage Fees
Grade-A Rdlvrd	0		0	0	0	1,478,718				<u>\$263,096.71</u>	RMF Fees
Net/Balance	(44,074)		(31,812)	(290,137)	(183,006)	(29,517,900)	5,536	34,824,987	2,130,671	\$890,700.84	\$7,634,804
Total Prior Contracts (TERMINATED)											
Crude Acquired				0	0	17,406,129	0	18,235,232			
Crude Disposed				0	0	11,830,863	0	19,187,102			
Grade-A Rdlvrd				0	0	1,478,718					
Number of trailers				0	0	9,834			0		
Messer, LLC, Contract no. 3249											
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											
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											
Global Gases America, Contract no. 3293											
Crude Acquired											
Crude Disposed											
Net/Balance											
IACX Energy, Contract no. 3297											
Crude Acquired											
Crude Disposed											
Net/Balance											

Government Helium	
Remaining Crude Acquired beginning of the month	2,299,339
Crude Disposed: In Kind Sales transferred for the month	(5,536)
Conservation Crude Sales/Reserve Sell Down transferred (month)	0
Gains and Loses for the month	(5,453)
Net/Balance of Purchased Helium Remaining for Sale	2,288,351

*Includes In Kind and Conservation Crude transfers from Government storage

**Rounded to nearest dollar

** New Contracts

Table 8 - Compression & CHEU (Operations)

June - 2021

Field/CHEU Compressor Operations

		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$2.94		
Fuel used * (now includes field compression well head)	total MMBTU	7,539	64,090	2,146,488
#1 Compressor run time *	hours	0	1,160	126,473
#2 Compressor run time *	hours	690	5,390	95,538
#3 Compressor run time *	hours	642	3,752	78,680

* Field/CHEU Compressor Operations based on Jun 21 activity

Crude Helium Enrichment Unit (CHEU)

CHEU Runtime

	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	717	99.6%	5,710	87.2%	151,135
Producing residue gas	693	96.2%	5,503	84.0%	147,668
Producing helium product	677	94.0%	5,338	81.5%	143,385
Producing natural gas liquids	677	94.0%	5,291	80.8%	142,760

CHEU Utility Usage

	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Jun 21	2,643	24,078	727,305
Cheu Pure Water Usage (gallons) Jun 21	4	6,713	336,903
Electricity Metered (Kwh) CHEU consumed May 21	2,770,877	21,972,870	263,000,679

Booster Compressor Operations and Usage

	Month	FYTD	Cumulative
Electricity Metered (Kwh) Booster Compressor consumed May 21	668,434	5,403,286	10,543,366