

# Bureau of Land Management

## Amarillo Field Office Helium Operations



### Statistical Report for September - 2003



#### *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  
-Natural Gas Engineering

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Amarillo, Texas

Issued: February 25, 2004

***\* Revised \****

**\*Tables include COMPANY PROPRIETARY INFORMATION (shaded) and is for internal use only.  
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Approved for distribution: *Nelson R. Bullard*

Date: *02/25/2004*

Table 1 - Summary of Helium Operations

September - 2003

In Kind Sales		NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind	Charges Billed (\$)**	
Total month		26,595	1,989	0	5,927	3,887	8,806	47,204	46,472	\$2,442,406	
Total FYTD		120,459	(2,693)	58	26,306	29,075	29,342	202,547	199,414	\$10,428,212	
Total CYTD		93,651	5,026	58	18,099	24,903	18,070	159,807	157,334	\$8,261,416	
In Kind Transfers								Month	FYTD	CYTD	Cumulative
Transferred								86	234,606	152,852	1,159,938
Volume outstanding								46,562			
Open Market Sales				Award Volume		Outstanding		Sales	Charges Billed (\$)**		
Total month				0		(410,000)		410,000	\$21,525,000		
Total FYTD				1,640,000		0		1,640,000	\$86,100,000		
Total CYTD				1,640,000				1,640,000	\$86,100,000		
Open Market Transfers								Month	FYTD	CYTD	Cumulative
Transferred								0	1,230,000	1,230,000	1,230,000
Volume outstanding								410,000			
Natural Gas/Liquids Sales		Natural Gas (Mcf)		NGLs (gal)		Decatherms		\$/unit	Charges Billed (\$)**		
Total month		235,559		0		249,504		\$4.2361	\$1,050,930		
Total FYTD		1,242,748		0		1,276,874		\$4.8729	\$6,192,079		
Total CYTD		1,242,748		0		1,276,874		\$4.8729	\$6,192,079		
Purchased Helium	Month			Month	FYTD	Month	FYTD	FYTD	CYTD	Cumulative	
	Helium Mixture	Helium Percent	Helium	Low Purity Helium		Below 50% Helium		Contained Helium			
Total purchased										32,176,145	
Helium transferred			86					1,464,606	1,382,852	4,375,278	
Purchased helium in storage										27,800,867	
Private Plant Activity											
Accepted in storage system	97,812	64.7%	63,269	1,649	24,534	(450)	(4,264)	646,051	494,919	7,804,227	
Redelivered from storage system	(218,883)	68.4%	(149,781)	0	0	0	249	(1,956,323)	(1,461,470)	(11,612,378)	
Total apparent crude produced^	184,598	68.2%	125,866					1,647,083	1,166,619	7,177,241	
Total apparent crude refined^	(310,272)	69.5%	(215,647)					(2,966,749)	(2,142,362)	(11,540,355)	
Storage Contract Activity	Metered Gas					Transferred Gas		Stored Helium	Charges Billed (\$)**		
	Gross Gas	Helium	Helium	Helium	Cumulative	Month	Cumulative	EOM	Month	FYTD	
Crude Acquired	97,341	62,819	641,787	491,290	25,175,008	45,317	27,134,456				
Crude Disposed	218,881	149,781	1,956,074	1,461,242	23,437,758	45,231	25,386,931		\$18,057	Storage Fees	
Grade-A Rdlvrd	0	0	0	0	1,478,718	0	0		\$63,547	RMF Fees	
Net/Balance	(121,540)	(86,962)	(1,314,287)	(969,952)	258,532	86	1,747,525	2,006,057	\$81,604	\$2,827,591	
Bush Dome Reservoir Operations		Month		Fiscal Year		Since Start of Conservation Program		Since Field Discovery			
Conservation gases from all sources		Gross	Net	Gross	Net	Gross	Net	Gross	Net		
In underground storage, beg. of period		41,449,420	29,862,107	43,146,344	31,097,065	490,620	490,620	0	0		
Net Activity		(120,596)	(86,962)	(1,817,520)	(1,321,920)	40,838,204	29,284,525	41,328,824	29,775,145		
Total in underground storage		41,328,824	29,775,145	41,328,824	29,775,145	41,328,824	29,775,145	41,328,824	29,775,145		
Native Gas											
Total in place, beg. of period		206,621,442		208,721,080		265,724,755		318,727,000			
Net Activity		(385,460)		(2,485,098)		(59,488,773)		(112,491,018)			
Total in place, end of month		206,235,982		206,235,982		206,235,982		206,235,982			
Native Gas plus Conservation Gases											
Total gases in place, beg. of period		248,070,862		251,867,424		266,215,375		318,727,000			
Net Activity		(506,056)		(4,302,618)		(18,650,569)		(71,162,194)			
Total gases in place, end of month		247,564,806		247,564,806		247,564,806		247,564,806			
Helium Resources Evaluation				Month	FYTD						
Revenue Collected from Federal Lease Holds				Submitted	0	Received	0	Analyzed	82		
Helium Sample Collection Report for month				Submitted	0	Received	0	Analyzed	82		
Helium Enrichment Unit Operations		Month			FYTD			Cumulative			
Gas Processed	Helium-Gas Mixture	Helium Percent	Helium	Helium-Gas Mixture	Helium Percent	Helium	Helium-Gas Mixture	Helium Percent	Helium		
Plant feed	443,459	12.2%	54,285	2,761,713	12.8%	352,864	2,761,713	12.8%	352,864		
Helium product	68,998	75.7%	52,224	426,217	75.7%	322,520	426,217	75.7%	322,520		
Residue natural gas	242,066	0.0%	9	1,529,645	0.0%	10	1,529,645	0.0%	10		
Vent, flare & plant losses	132,461	1.5%	2,052	1,125,747	2.7%	30,333	1,125,747	2.7%	30,333		
Helium recovery efficiency			96.2%			91.4%			91.4%		

\* Volumes in Mcf at 14.7 psia & 70°F; all other volumes in 14.65 psia & 60°F

\*\*Rounded to nearest dollar

^ Other sources of helium are accessed but data are not available

Table 2 - In Kind Helium Sales

September - 2003

	NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**	
<b>In Kind Helium</b>										
<b>Aeriform, Contract no. INC98-0101</b> (billed quarterly)										
Month										
FYTD										
<b>AGA Gas, Inc., Contract no. INC98-0102</b>										
Month										
FYTD										
<b>AirGas, Inc., Contract no. INC98-0103</b>										
Month										
FYTD										
<b>Air Liquide S.A., Contract no. INC98-0104</b>										
Month										
FYTD										
<b>Air Products, L.P., Contract no. INC98-0105</b>										
Month										
FYTD										
<b>BOC Gases, Contract no. INC98-0106</b>										
Month										
FYTD										
<b>Corp Brothers, Inc., Contract no. INC98-0107</b>										
Month										
FYTD										
<b>FIBA Technologies, Inc., Contract no. INC98-0108</b>										
Month										
FYTD										
<b>General Air Service &amp; Supply Co., Contract no. INC98-0109</b>										
Month										
FYTD										
<b>Jack B. Kelley Co., Contract no. INC98-0110</b>										
Month										
FYTD										
<b>Portland Welding Supply, Contract no. INC98-0111</b>										
Month										
FYTD										
<b>Praxair, Inc., Contract no. INC98-0112</b>										
Month										
FYTD										
<b>United States Welding, Inc., Contract no. INC98-0113</b>										
Month										
FYTD										
<b>Tri-Gas, Inc., Contract no. INC98-0114</b>										
Month										
FYTD										
<b>Messer Griesheim Ind., Contract no. INC00-0115</b>										
Month										
FYTD										
<b>Total month</b>	26,595	1,989	0	5,927	3,887	8,806	47,204	46,472	\$2,442,406	
<b>Total FYTD</b>	120,459	(2,693)	58	26,306	29,075	29,342	202,547	199,414	\$10,428,212	
<b>Total CYTD</b>	93,651	5,026	58	18,099	24,903	18,070	159,807	157,334	\$8,261,416	
<b>Cumulative</b>	704,981	18,402	58	168,519	181,436	152,077	1,225,473	1,206,425	\$60,236,255	
<b>In Kind Transfers</b>							Month	FYTD	CYTD	Cumulative
Transferred							86	234,606	152,852	1,159,938
Volume outstanding							46,562			

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

\*\*Rounded to nearest dollar

COMPANY PROPRIETARY INFORMATION

Table 2.1 - Open Market/Reserve Sell-down  
Helium & Natural Gas Sales

September - 2003

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$)**
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**Conservation Helium**

**Air Liquide S.A.**

(billed quarterly)

Month	0	(12,500)	12,500	\$656,250
FYTD	50,000	0	50,000	\$2,625,000
Cumulative	50,000		50,000	\$2,625,000

**Air Products, L.P.**

Month	0	(170,100)	170,100	\$8,930,250
FYTD	680,400	0	680,400	\$35,721,000
Cumulative	680,400		680,400	\$35,721,000

**BOC Gases**

Month	0	(208,500)	208,500	\$10,946,250
FYTD	834,000	0	834,000	\$43,785,000
Cumulative	834,000		834,000	\$43,785,000

**Keyes Helium Co.**

Month	0	(18,900)	18,900	\$992,250
FYTD	75,600	0	75,600	\$3,969,000
Cumulative	75,600		75,600	\$3,969,000

<b>Total month</b>	0	(410,000)	410,000	\$21,525,000
<b>Total FYTD</b>	1,640,000	0	1,640,000	\$86,100,000
<b>Total CYTD</b>	1,640,000		1,640,000	\$86,100,000
<b>Cumulative</b>	1,640,000		1,640,000	\$86,100,000

**Open Market Transfers**

	Month	FYTD	CYTD	Cumulative
Transferred	0	1,230,000	1,230,000	1,230,000
Volume outstanding	410,000			

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

Natural Gas (Mcf)**	NGLs (gal)	Decatherms	\$/unit	Charges Billed (\$)**
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**Natural Gas/Liquids Sales**

**El Paso Natural Gas**

Provides Firm/Interruptible natural gas transportation services

(billed monthly)

Month	233,959		260,243	(\$0.1055)	(\$27,460)
FYTD	1,191,421		1,322,348	(\$0.1246)	(\$164,761)
Cumulative	1,191,421		1,322,348	(\$0.1246)	(\$164,761)

**Minerals Management Service**

Provides natural gas marketing services under a Cooperative Agreement

Month				(\$0.0532)	(\$12,448)
FYTD				(\$0.0104)	(\$12,448)
Cumulative				(\$0.0104)	(\$12,448)

**Cenergy Marketing**

Month	234,280	0	249,504	\$4.396059	\$1,090,838
FYTD	1,235,999	0	1,276,874	\$5.011711	\$6,369,288
Cumulative	1,235,999	0	1,276,874	\$5.011711	\$6,369,288

<b>Total month</b>	234,280	0	249,504	\$4.236109	\$1,050,930
<b>Total FYTD</b>	1,235,999	0	1,276,874	\$4.872928	\$6,192,079
<b>Total CYTD</b>	1,235,999	0	1,276,874	\$4.872928	\$6,192,079
<b>Cumulative</b>	1,235,999	0	1,276,874	\$4.872928	\$6,192,079

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

\*\*Rounded to nearest dollar

## Table 3 - Helium Resources Evaluation

September - 2003

All Volumes in Mcf at 14.7 psia & 70°F

	Month*	FYTD*
<b>Revenue Collected From Federal Leaseholds</b>		
Fee Sales & Royalties	\$12,687	\$4,787,324
Natural Gas Royalties (1)	\$2,820	\$35,783
Natural Gas Rentals	\$0	\$640
Other	\$5,902	\$69,258
Revenue Collected from Federal Lease Holds	\$9,783	\$4,824,264

\*Totals do not sum

	Month	FYTD
<b>Helium Analysis and Evaluation</b>		
Number of Sample Request Letters Sent	0	81
Number of Samples Received	0	20
Number of Samples Analyzed	1	22
Total Number of Samples Analyzed For Resources Division	3	251
Total Number of Samples Analyzed (2)	82	2,326

### U. S. Helium Production

CYTD

*Domestic*

1997 Helium Sold	3,853,991
1998 Helium Sold	4,029,755
1999 Helium Sold	4,203,019
2000 Helium Sold	4,564,589
2001 Helium Sold	4,756,719
2002 Helium Sold	4,584,904
2003 Helium Sold (projected)	4,700,000
<b>Estimated Helium Resources (as of 01/01/2001)</b>	<b>323,000,000</b>

	Month	FYTD	CYTD
<b>U.S. Helium Exports</b> (3)	117,389	1,351,627	1,009,051

(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 statistics as of: August 2003

Table 4 - Federal Acquisition & Storage Operations

September - 2003

All Volumes in Mcf at 14.65 psia & 60°F

Month			Month	FYTD	Month	FYTD	FYTD	CYTD	Cumulative
Helium-Gas Mixture	Helium Percent	Helium	Low Purity Helium		Below 50% Helium		Contained Helium		

**Purchased**

Cities Service Helex - Jayhawk	---								6,403,147
National Helium Corp. - Liberal	---								11,561,830
Nothern Helex Co. - Bushton	---								4,475,921
Phillips Petroleum - Dumas	---								5,111,036
Phillips Petroleum - Sherman	---								4,624,211
<b>Total purchased</b>									<b>32,176,145</b>

Purchased helium produced/transferred	86					1,464,606	1,382,852		4,375,278
Balance of purchased helium in storage									<b>27,800,867</b>

**Bureau Plants**

Delivery/Handling Credit	0	---	0			0			13,205,259
Withdrawal	0	---	0			5			7,540,255

**Private Plants**

	FYTD	CYTD	Cumulative
Helium accepted under terminated contracts (pre-FY96)			16,453,073
Helium redelivered under terminated contracts (pre-FY96)			13,007,062

Pioneer - Fain*									
GPM - Dumas*									
Crescendo - Sunray*									
Air Products - Guymon*									
GPM - Sherhan*									
GPM to APG+									
<b>Total GPM - Sherhan</b>									
Keyes Helium - Sturgis* ^									
Keyes Helium - Sturgis* ^									
<b>Total Keyes Helium - Sturgis* ^</b>									
Pioneer - Satanta*									
Williams - Baker*									
National Helium - Liberal*									
National to APL+									
<b>Total National Helium - Liberal</b>									
Air Products - Liberal*									
Praxair - Jayhawk* ^									
Praxair - Jayhawk* ^									
<b>Total Praxair - Jayhawk* ^</b>									
Amoco to Praxair+									
CIG - Lakin*									
BOC Gases - Otis* ^									
KN Processing - Bushton*									
KNP to Praxair+									
<b>Total KN Processing - Bushton</b>									
Praxair - Bushton*									

Accepted in storage system	97,812	64.7%	63,269	1,649	24,534	(450)	(4,264)	646,051	494,919	7,804,227
Redelivered from storage system	(218,883)	68.4%	(149,781)			0	249	(1,956,323)	(1,461,470)	(11,612,378)
<b>Total apparent crude produced^</b>	<b>184,598</b>	<b>68.2%</b>	<b>125,866</b>					<b>1,647,083</b>	<b>1,166,619</b>	<b>7,177,241</b>
<b>Total apparent crude refined^</b>	<b>(310,272)</b>	<b>69.5%</b>	<b>(215,647)</b>					<b>(2,966,749)</b>	<b>(2,142,362)</b>	<b>(11,540,355)</b>

\* Denotes CUSTODY TRANSFER activity in to or out of the crude helium pipeline system

+ Denotes activity between private plants that does not enter the crude helium pipeline system

^ Other sources of helium are accessed by helium refiners, but data are not available to BLM

**Acquisition & Storage Summary - Contained Helium**

	Month	FYTD	Cumulative
Total acquisition	63,269	646,051	69,638,704
Total disposition	149,781	1,956,328	41,089,767
Total stored in conservation system	(86,512)	(1,310,277)	28,548,937

Helium in pipeline system plus apparent losses	(1,226,208)
Helium in underground storage	29,775,145

COMPANY PROPRIETARY INFORMATION

Table 4.1 - Helium Storage Contract Activity

September - 2003

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
	Month			FYTD	CYTD	Cumulative					
<b>Total All Contracts*</b>											
Crude Acquired	97,341	1	62,819	641,787	491,290	25,175,008	45,317	27,134,456			
Crude Disposed	218,881	1	149,781	1,956,074	1,461,242	23,437,758	45,231	25,386,931		\$18,057	Storage Fees
Grade-A Rdlvrd	0		0	0	0	1,478,718				\$63,547	RMF Fees
Net/Balance	(121,540)		(86,962)	(1,314,287)	(969,952)	258,532	86	1,747,525	2,006,057	\$81,604	\$2,827,591
<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>BOC Gases, Contract no. 1995-3249</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Praxair, Inc., Contract no. 1995-3251</b> months - projected depletion											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Air Products, L.P., Contract no. 1995-3256</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Oneok Field Services, Contract no. 1995-3258</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>ExxonMobil Gas Marketing Co., Contract no. 1995-3280</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Pioneer, Contract no. 1995-3286</b> months - projected depletion											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Keys Helium Co., Contract no. 1995-3287</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Messer Griesheim Ind., Contract no. 1998-3283</b> months - projected depletion											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Linde Gas AG, Contract no. 2001-3282</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Mitsui &amp; Co. (U.S.A.), Inc., Contract no. 2002-3289</b> months - projected depletion											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Air Liquide S.A., Contract no. 2003-3284</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Government Helium</b>											
Crude Acquired							0	32,176,145			
Crude Disposed: In Kind Sales							86				
Open Market/Reserve Sell down							0	4,375,278			
Net/Balance									27,800,867		

\*Includes In Kind and Open Market transfers from Government storage

\*\*Rounded to nearest dollar

COMPANY PROPRIETARY INFORMATION



## Table 6 - Helium Enrichment Unit Operations

September - 2003

All Volumes in Mcf at 14.65 psia & 60°F (\*except where noted)

Gas Processed	Month			FYTD			Cumulative		
	Helium-Gas Mixture	Helium Percent	Helium	Helium-Gas Mixture	Helium Percent	Helium	Helium-Gas Mixture	Helium Percent	Helium
	Plant feed	443,459	12.2%	54,285	2,761,713	12.8%	352,864	2,761,713	12.8%
Helium product	68,998	75.7%	52,224	426,217	75.7%	322,520	426,217	75.7%	322,520
Residue natural gas	242,066	0.0%	9	1,529,645	0.0%	10	1,529,645	0.0%	10
Vent, flare & plant losses	132,461	1.5%	2,052	1,125,747	2.7%	30,333	1,125,747	2.7%	30,333
Helium recovery efficiency			96.2%			91.4%			91.4%

Utility Usage	Month			FYTD			Cumulative		
	Volume*	KWh	Runtime	Volume*	KWh	Runtime	Volume*	KWh	Runtime
	Natural gas liquids (*gallons)	0			0			0	
K100 compressor		775,296	676		4,956,560	3,988		4,956,560	3,988
K600 compressor		1,329,457	606		7,678,479	3,508		7,678,479	3,508
K610 compressor			547			2,936			2,936
Other electrical usage		213,924	720		2,295,685	4,840		2,295,685	4,840
Fuel gas (*Mcf)	3,601			20,707			20,707		
Water (*gallons)	2,200			14,290			14,290		

### HEU Runtime & Charges

#### Enrichment Unit Runtime

	Month		FYTD		Cumulative	
	Runtime	Percent	Runtime	Percent	Runtime	Percent
Processing feed gas	676	93.9%	3,988	82.4%	3,988	82.4%
Producing helium product	547	76.0%	2,936	60.7%	2,936	60.7%
Producing residue gas	606	84.2%	3,508	72.5%	3,508	72.5%

#### Enrichment Unit Charges

	Charges Billed (\$)*		
	Month	FYTD	Cumulative
Reservoir Management Fees (RMF)	\$63,547	\$572,169	\$572,169
Total operating costs	(\$1,183,249)	(\$4,992,096)	(\$4,992,096)
Labor	\$316,514	\$449,989	\$449,989
Compressor fuel	\$8,863	\$26,589	\$26,589
HEU fuel	\$11,250	\$57,408	\$57,408
Electric power	\$96,415	\$314,682	\$314,682
Flare, vent & plant losses	\$283,163	\$1,341,165	\$1,341,165
Other	\$17,250	\$103,500	\$103,500
<b>Sub Total - Items provided by BLM</b>	<u>\$733,455</u>	<u>\$2,293,332</u>	<u>\$2,293,332</u>
<b>Total - Cliffside Refiners, LP, GDA030001</b>	<b>(\$449,794)</b>	<b>(\$2,698,764)</b>	<b>(\$2,698,764)</b>

\*Rounded to nearest dollar