U.S. Federal Helium Program

Global Helium Summit 2.0
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New Mexico State Office
Amarillo Field Office

BUREAU OF LAND MANAGEMENT

In This Presentation:

- Federal Helium Program History
- BLM Organization
- Partnerships and Contract Holders
- Current Operations
- Look Ahead

Federal Helium Program History

1923 – First helium extraction plant built by Fort Worth Helium at Hicks Field to support Navy Department

1925 – Helium Act of 1925 authorized the Bureau of Mines to construct and operate 6 helium plants

- 1929 – Amarillo Helium Plant built (sold in 2007)
- 1943 – Exell Helium Plant built (sold in 2011)
  - Thatcher Helium Plant built (closed in 1944)
  - Navaho Helium Plant built in (returned to tribe in 1960)
  - Otis Helium Plant built (closed in 1944)
- 1957 – Keyes Helium Plant built (closed in 1991)

1960 – Major Helium Legislation – Helium Act Amendments of 1960

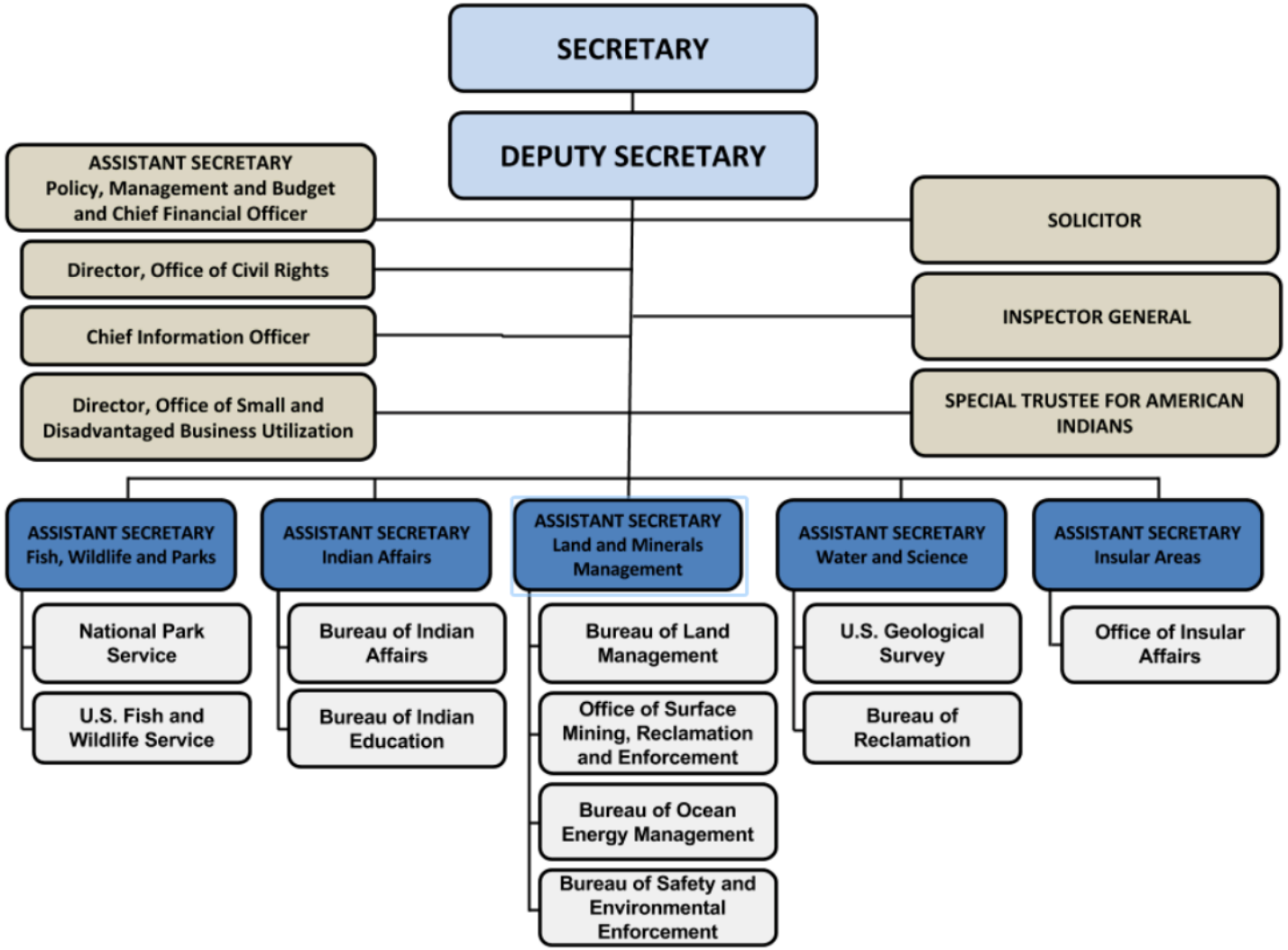
1996 – Helium Privatization Act

2013 – Helium Stewardship Act

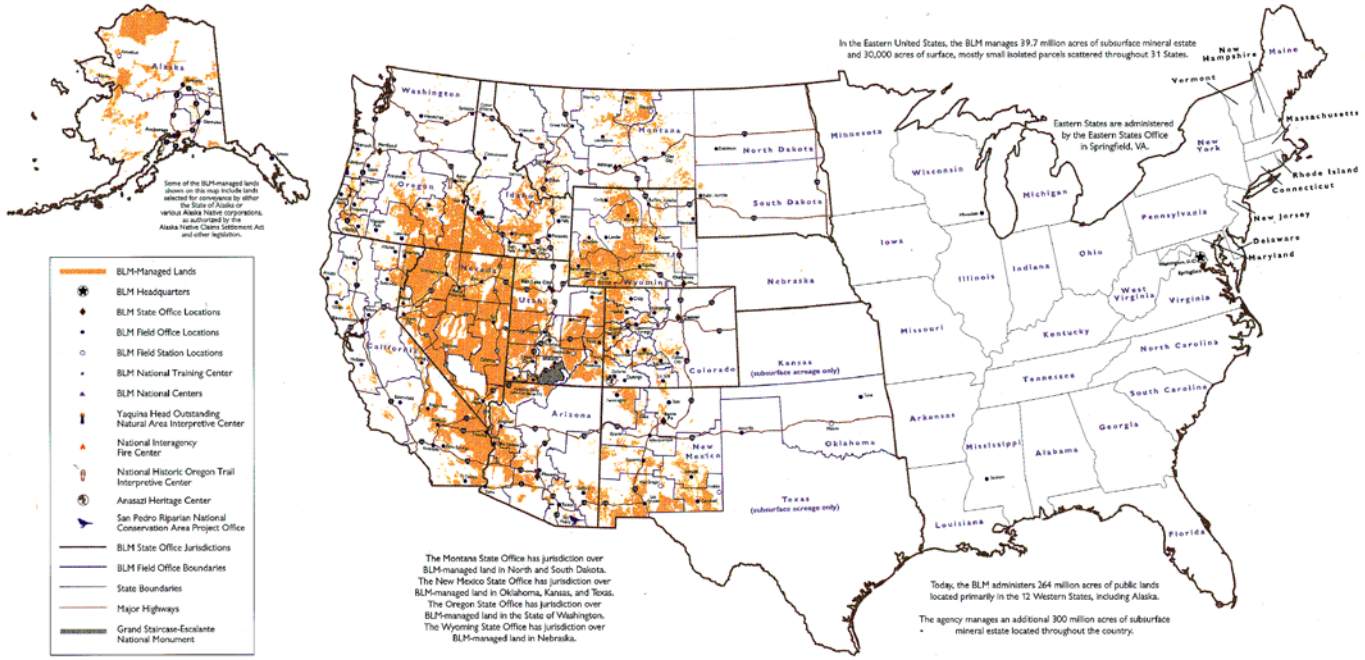
2014 – First Helium Auction

2021 – Scheduled Disposal of the Federal Helium System, per HSA

Interior Organizational Chart



Public Lands Managed by the Bureau of Land Management (BLM)



The BLM, a sub unit of the U.S. Department of the Interior manages over <u>245 million</u> surface acres and over <u>700 million</u> sub-surface acres

Amarillo Field Office Organization

Approved Employees 66
Current Employees 58
Vacancies 8

51 Field Office Employees

(Helium Operations)

- Downtown Amarillo Office – 801 S Fillmore
- Cliffside Helium Plant – 12 miles NW of Amarillo, TX
- Satanta Field Station – Satanta, KS

15 New Mexico State Office Employees

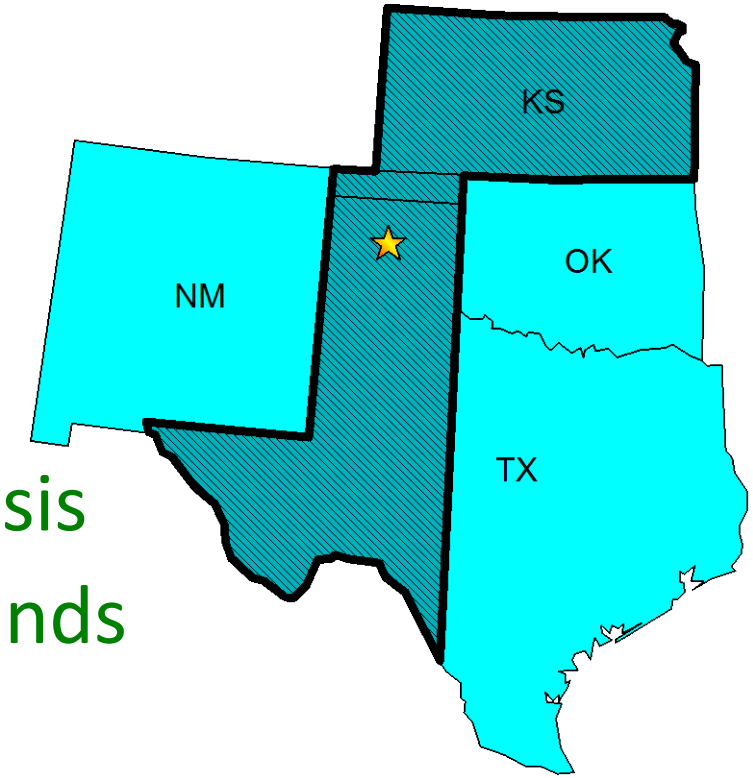
(Helium Resources)

- Manages helium royalties associated with natural gas extraction on Federal lands
- Co-located in the Fillmore Office

BLM – Amarillo Field Office

4 Main Helium Functions

- Storage & Transmission
- Crude Helium Sales
- Resource Evaluation & Gas Analysis
- Helium Royalties from Federal Lands



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Cliffside Refiners Limited Partnership (CRLP)

- The refiners comprising the CRLP are Air Products, Praxair, and Linde
- Partnership between the BLM and CRLP began in 2003 under a 15-year agreement
- CRLP provided construction capital to construct HEU administered through Cooperative Agreements
- CRLP also provides major maintenance activities during annual plant shutdowns
- BLM – Manages Gas Field Production, Leases and Operates HEU

Current Storage Contract Holders

Company	Contract Number
Linde Gas North America, LLC	2016-3249
Praxair, Inc.	2016-3251
Air Products, L.P.	2016-3256
Air Liquide Helium America, Inc.	2016-3284
Pioneer Natural Resources USA, Inc	2016-3286
Keyes Helium Co., LLC	2016-3287
Matheson Tri-Gas, Inc.	2016-3288
Airgas Merchant Gases	2016-3290
Global Gases America	2016-3293
Linn Energy	2016-3296
IACX	2016-3297

Cliffside Helium Plant

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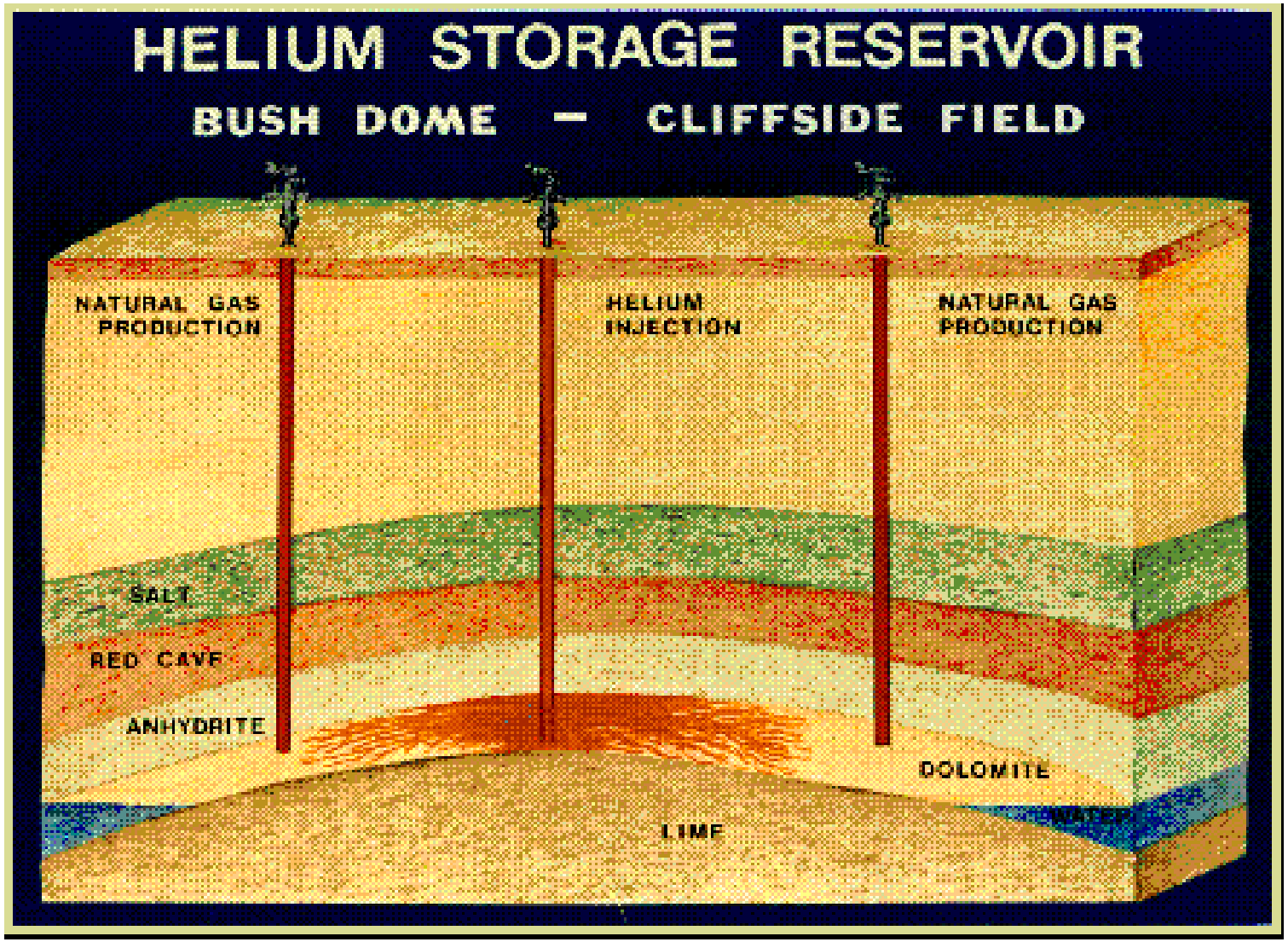
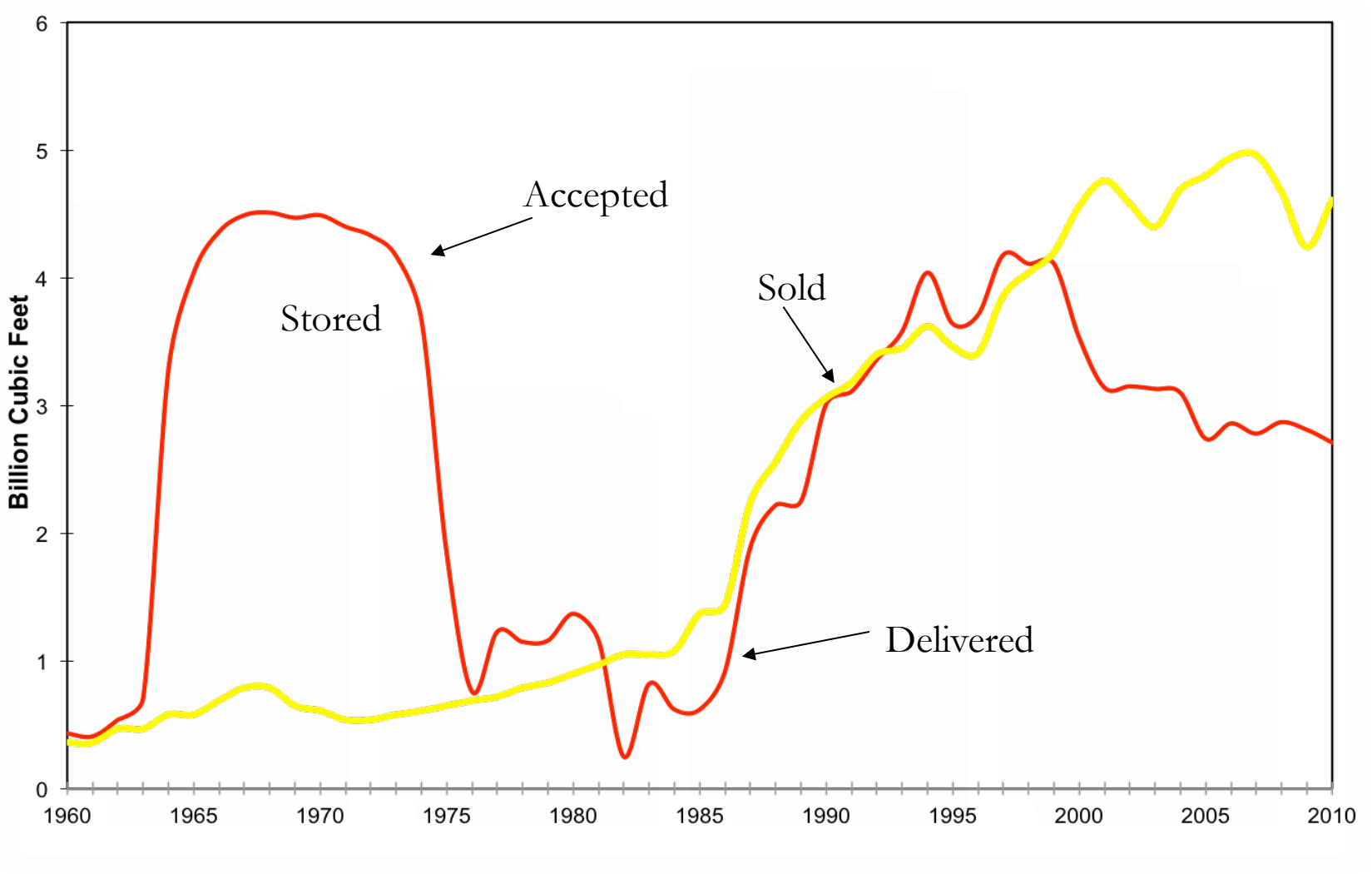
Helium Storage Reservoir – Bush Dome



U.S. Helium Recovery



Helium Enrichment Unit Cliffside Field

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New Crude Helium Compressor

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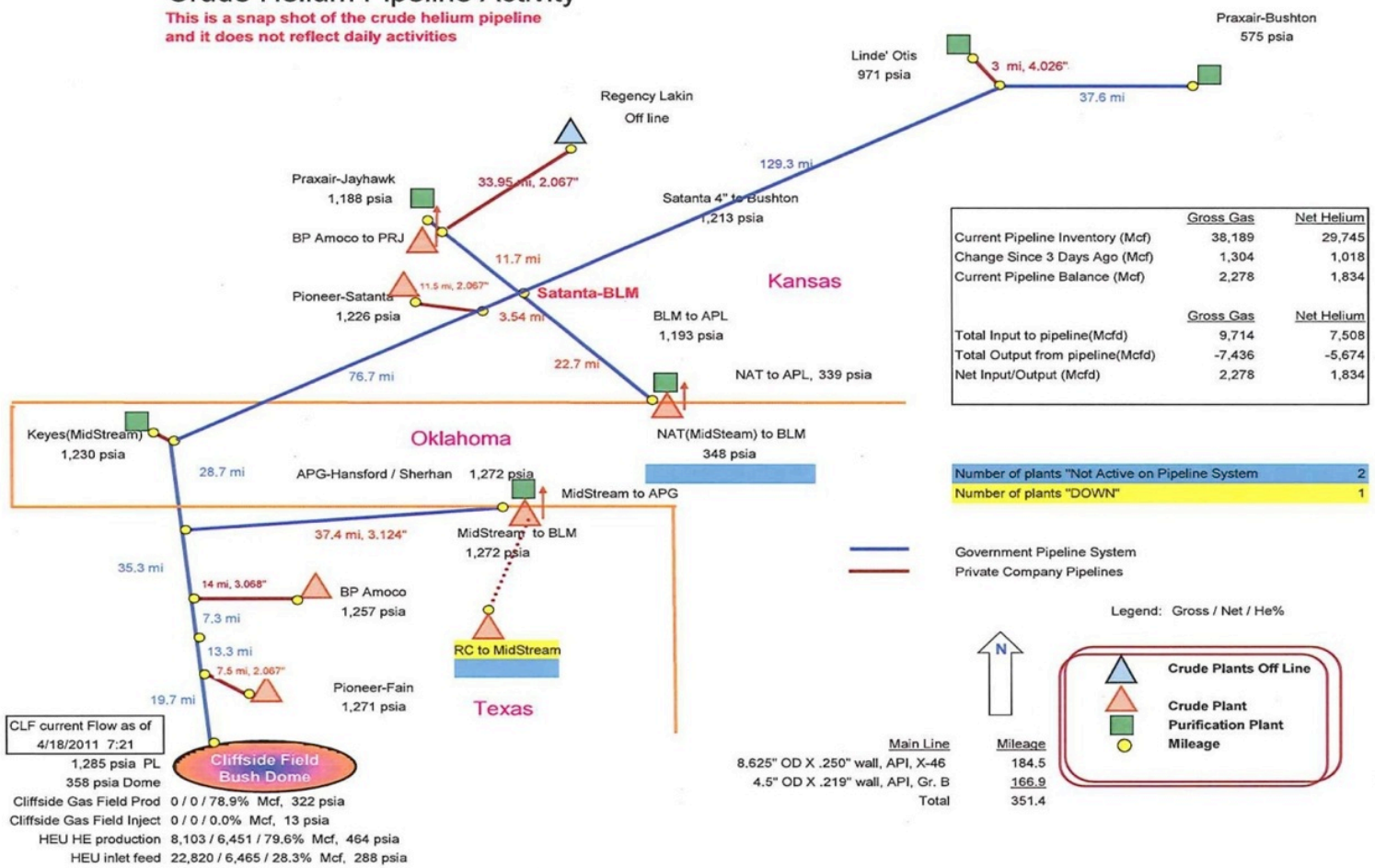
Daily Pipeline Activity Report

Bureau of Land Management (BLM)
Crude Helium Pipeline Activity

Date: 4/18/2011

This is a snap shot of the crude helium pipeline and it does not reflect daily activities



	Gross Gas	Net Helium
Current Pipeline Inventory (Mcf)	38,189	29,745
Change Since 3 Days Ago (Mcf)	1,304	1,018
Current Pipeline Balance (Mcf)	2,278	1,834

	Gross Gas	Net Helium
Total Input to pipeline(Mcfd)	9,714	7,508
Total Output from pipeline(Mcfd)	-7,436	-5,674
Net Input/Output (Mcfd)	2,278	1,834

Number of plants "Not Active on Pipeline System	2
Number of plants "DOWN"	1

Main Line	Mileage
8.625" OD X .250" wall, API, X-46	184.5
4.5" OD X .219" wall, API, Gr. B	166.9
Total	351.4

CLF current Flow as of 4/18/2011 7:21

1,285 psia PL	
358 psia Dome	
Cliffside Gas Field Prod	0 / 0 / 78.9% Mcf, 322 psia
Cliffside Gas Field Inject	0 / 0 / 0.0% Mcf, 13 psia
HEU HE production	8,103 / 6,451 / 79.6% Mcf, 464 psia
HEU inlet feed	22,820 / 6,465 / 28.3% Mcf, 288 psia
Residue Gas	9,762 / 0 / 0.0% Mcf, 778 psia
Total He to PL	**8,103 MCF Gross / 6,451 Mcf Net He, 79.6% He, 1,285 psia**

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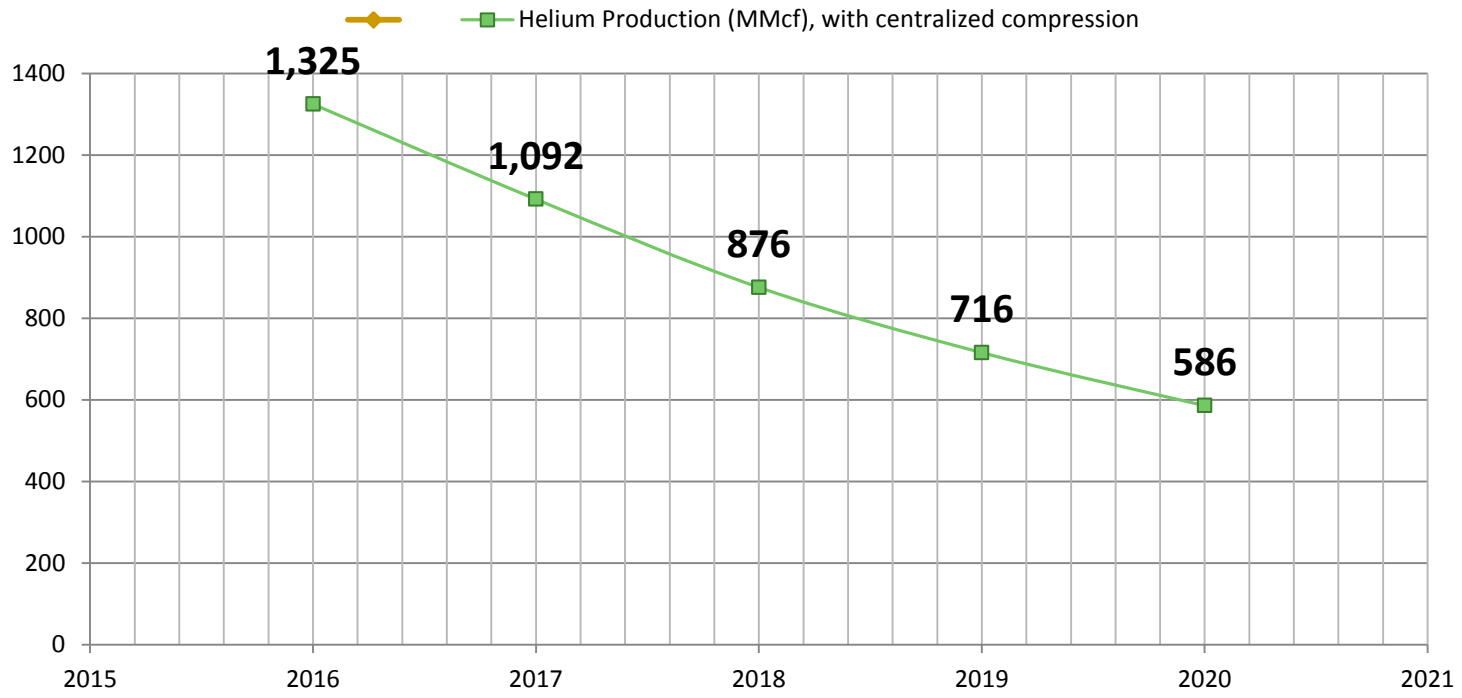
Production Capacity

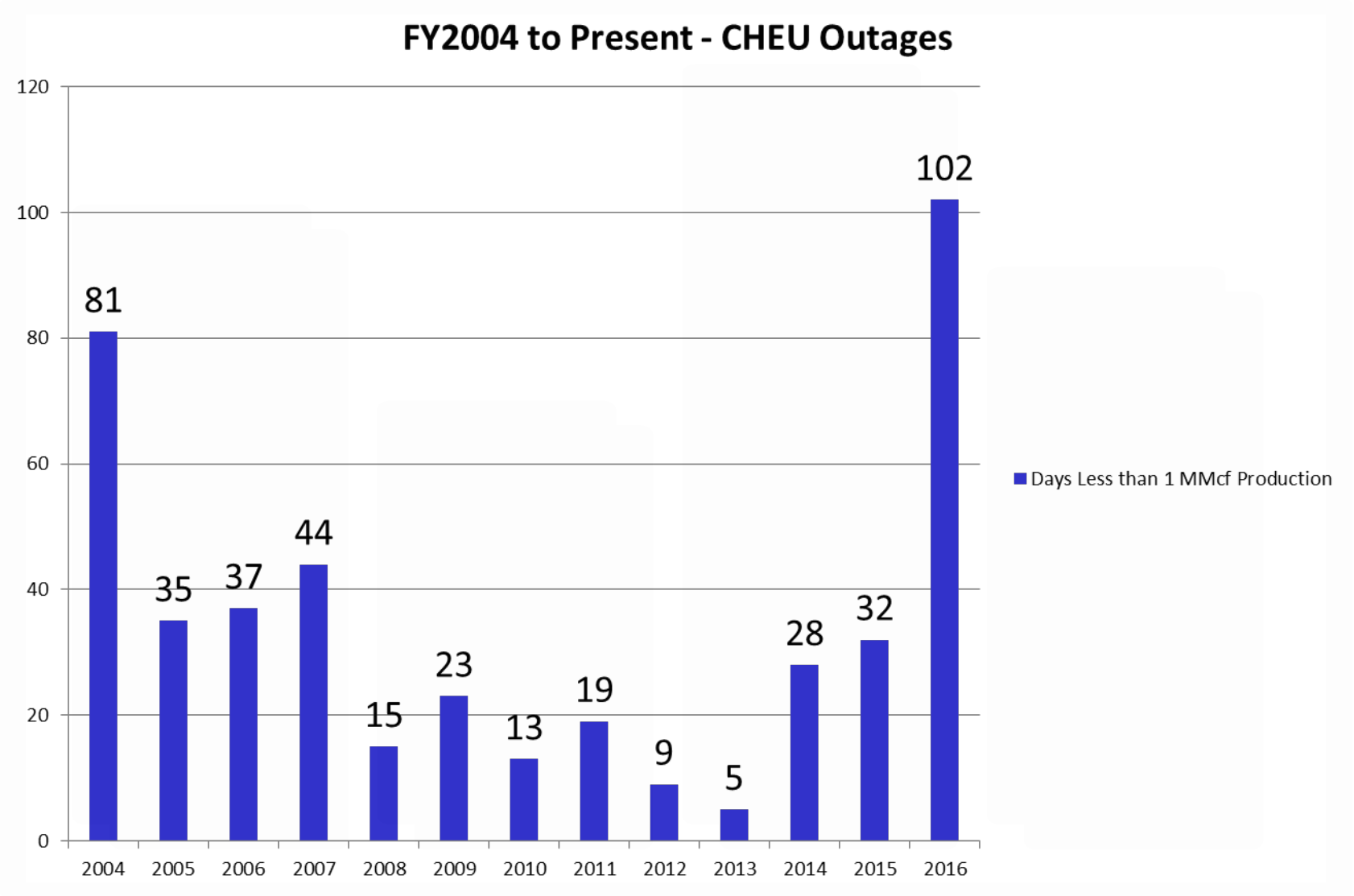
FY2016 and beyond production capacity is dependent field pressure



Fiscal Year	Helium Production (MMcf), with centralized compression
2016	1,325
2017	1,092
2018	876
2019	716
2020	586

Total Crude Helium Delivery Capability through 2021 with centralized compression **4,595** **MMcf**

Outages



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Key Figures and Dates

			Bcf
Total Program Revenue	$1,876,203,782		
*Projected Balance =	8,357,539,000		(8.4)
Public		4,537,539,000	(4.5)
Private		3,820,000,000	(3.8)
Remaining Helium Available for Private Sale	1,537,539,000		(1.5)
Remaining Production	4,595,000,000		(4.6)
Disposal of Assets	September 30, 2021		
Cliffside Gas Field			
Federal Helium Pipeline			
Federal Helium Reserve			

*Projected balance on October 1, 2016 – **Numbers above are subject to change**

Look Ahead

- **Short-Term**
  - October 1 - Leadership Transition
  - October 15 – 10-Day Planned Outage
  - March 2017 - Central compressor tie-in
  - April 2017 – Federal End Users Forum in Amarillo, TX
  - June 2017 – 4th Auction and Sale of Crude Helium in Amarillo

- **Mid-Term**
  - FY2018 - Final Crude Helium Auction and Sale
  - April 2018 – Expiration of the 15-year agreement with the CRLP
  - Continued support to Federal end-users and delivery of privately held crude helium

- **Long-Term**
  - Drafting of new In Kind regulations (43 CFR 3195)
  - September 30, 2021 – Disposal of the Federal Helium System
    - the Federal Helium Reserve;
    - the Cliffside Field;
    - the Federal Helium Pipeline; and
    - all other infrastructure owned, leased, or managed under contract by the Secretary…

Questions

Point of Contact for detailed questions pertaining to the Federal Helium Program:

Website: Amarillo Field Office website

www.blm.gov/nm/amarillo

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