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SENATE

{ REPORT
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HELIUM EXTRACTION ACT OF 2017

NOVEMBER 27, 2018.—Ordered to be printed

Ms. MURKOWSKI, from the Committee on Energy and Natural Resources, submitted the following

R E P O R T

[To accompany H.R. 3279]

[Including cost estimate of the Congressional Budget Office]

The Committee on Energy and Natural Resources, to which was referred the bill (H.R. 3279) to amend the Mineral Leasing Act to provide that extraction of helium from gas produced under a Federal mineral lease shall maintain the lease as if the helium were oil and gas, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE

The purpose of H.R. 3279 is to amend the Mineral Leasing Act (MLA) to promote the production of helium by taking into account the value of helium in determining whether a Federal oil or gas lease is producing in paying quantities for purposes of determining whether the lease can be extended.

BACKGROUND AND NEED

Helium is a naturally occurring element that is typically extracted from natural gas, and then subsequently refined to higher purity grades for applications such as magnetic resonance imaging, semiconductor manufacturing, military aviation, laboratory research, and a variety of other uses.

Under the MLA, the Bureau of Land Management (BLM) administers natural gas leases on Federal lands. By statute, the initial term of a lease is 10 years and can be extended as long as gas is being “produced in paying quantities.” The MLA also specifies that the United States reserves ownership of any helium produced from

these oil and gas leases. So long as the processing does not “substantially delay” production of the primary gas products, the BLM can enter into a separate contract for the recovery of helium from the gas stream being produced from a well on Federal land.

This framework places the regulation and leasing requirements on the natural gas production which is typically the economic driver of the operations, while any contract, revenues and royalties from any helium produced as a secondary product are separate. One consequence of this structure is that no revenues from the sale of helium can be factored into whether a well is producing in “paying quantities” and thus qualifies for an extension of its initial lease term beyond 10 years. This is not a problem in high quality (high British thermal unit (Btu)) natural gas fields where the hydrocarbon value drives the economics, but in some cases lower Btu natural gas resources may not be able to meet the “paying quantities” threshold to qualify for a lease extension despite helium concentrations that would add substantial value to the lease. H.R. 3279 amends the MLA to allow the value of helium produced at these wells to be factored into the BLM’s determination of whether to extend a gas lease.

A growing number of entities are interested in pursuing gas leases primarily for the helium resources and in reserves that may not be viable from a hydrocarbon perspective. This interest is being driven in part by increasing global demand and privatization of the U.S. helium industry placing upward pressure on helium prices, along with low natural gas prices making additional leases unviable commercially. The need for additional production of domestic resources to avoid import reliance from Qatar, Algeria, and Russia, which are the main international producers, has also been cited as a reason for modifying the treatment of helium produced on federal lands.

LEGISLATIVE HISTORY

H.R. 3279 was introduced by Representative Cook in the House of Representatives on July 18, 2017. The bill was favorably reported by the Committee on Natural Resources on October 23, 2017. H.R. 3279 passed the House of Representatives on November 1, 2017, by voice vote.

Senator Hatch introduced a companion bill, S. 1572, on July 18, 2017. The Subcommittee on Public Lands, Forests, and Mining held a hearing on the bill on August 22, 2018.

The Senate Committee on Energy and Natural Resources met in an open business session on October 2, 2018, and ordered H.R. 3279 favorably reported.

COMMITTEE RECOMMENDATION

The Senate Committee on Energy and Natural Resources, in open business session on October 2, 2018, by a majority voice vote of a quorum present, recommends that the Senate pass H.R. 3279.

SECTION-BY-SECTION ANALYSIS

Section. 1. Short title

Section 1 provides a short title.

Sec. 2. Maintenance of Federal mineral leases based on extraction of helium

Section 2 amends the MLA to add “and that extraction of helium from gas produced from such lands shall maintain the lease as if the extracted helium were oil and gas” into the proviso, which states that the United States retains the rights to helium extracted from gas wells on public lands.

COST AND BUDGETARY CONSIDERATIONS

The following estimate of the costs of this measure has been provided by the Congressional Budget Office:

H.R. 3279 would allow firms to retain federal oil and gas leases that would otherwise expire for the purpose of extracting helium. Using information from the Bureau of Land Management (BLM) and industry sources, CBO estimates that enacting the legislation would increase offsetting receipts, which are treated as reductions in direct spending, by \$9 million over the 2019–2028 period; therefore, pay-as-you-go procedures apply. The legislation would not affect revenues.

CBO estimates that enacting H.R. 3279 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2029.

H.R. 3279 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA).

Estimated cost to the Federal Government: The estimated budgetary effect of [Title] is shown in the following table. The costs of the legislation fall within budget function 300 (natural resources and environment).

	By fiscal year, in millions of dollars—											
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019– 2023	2019– 2028
DECREASES IN DIRECT SPENDING												
Estimated Budget Authority	*	-1	-1	-1	-1	-1	-1	-1	-1	-1	-4	-9
Estimated Outlays	*	-1	-1	-1	-1	-1	-1	-1	-1	-1	-4	-9

* = between -\$500,000 and zero.

Basis of estimate: For this estimate, CBO assumes that H.R. 3279 will be enacted near the start of 2019.

H.R. 3279 would allow firms to retain federal oil and gas leases beyond 10 years to extract helium. Under current law, firms enter into agreements with BLM to extract helium from active oil and gas leases. Those leases expire after 10 years if they are no longer producing commercial quantities of oil or gas, even if commercial quantities of helium are still being extracted. In recent years, BLM has granted waivers that allow firms to continue extracting helium on leases that otherwise would have expired. In 2018, royalties for helium produced on federal oil and gas leases totaled \$19 million. All proceeds from the production of helium are deposited in the Treasury.

CBO expects that, under the act, firms would be more likely to acquire oil and gas leases containing noncommercial quantities of hydrocarbons but high volumes of helium. Using information from industry sources information from firms in the mineral extraction industry, we estimate that royalties from helium production on

those new leases would average about \$1 million a year. Because CBO expects that the number of firms seeking to develop such leases over the next 10 years would be small, we estimate that receipts from bonus bids (payments to the government to lease public land) would be negligible. Finally, CBO estimates that enacting H.R. 3279 would have no significant effect on production from existing leases because firms extracting helium on leases that may expire would probably obtain permission from BLM to continue their extraction of helium. In total, CBO estimates that enacting H.R. 3279 would increase offsetting receipts by \$9 million over the 2019–2028 period.

Pay-As-You-Go considerations: The Statutory Pay-As-You-Go Act of 2010 establishes budget-reporting and enforcement procedures for legislation affecting direct spending or revenues. The net changes in outlays that are subject to those pay-as-you-go procedures are shown in the following table.

CBO ESTIMATE OF PAY-AS-YOU-GO EFFECTS FOR H.R. 3279, THE HELIUM EXTRACTION ACT OF 2017, AS ORDERED REPORTED BY THE SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES ON OCTOBER 2, 2018

	By fiscal year, in millions of dollars—											
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2019–2023	2019–2028
NET DECREASE IN THE DEFICIT												
Statutory Pay-As-You-Go Effect	0	–1	–1	–1	–1	–1	–1	–1	–1	–1	–4	–9

Increase in long-term direct spending and deficits: CBO estimates that enacting H.R. 3279 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2029.

Mandates: H.R. 3279 contains no intergovernmental or private-sector mandates as defined in UMRA.

Previous CBO estimate: On October 23, 2017, CBO transmitted a cost estimate for H.R. 3279, the Helium Extraction Act of 2017, as ordered reported by the House Committee on Natural Resources on July 26, 2017. The two versions of H.R. 3279 are similar and CBO’s estimates of their budgetary effects are the same.

Estimate prepared by: Federal costs: Janani Shankaran; Mandates: Zachary Byrum.

Estimate reviewed by: Kim P. Cawley, Chief, Natural and Physical Resources Cost Estimates Unit; H. Samuel Papenfuss, Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT EVALUATION

In compliance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee makes the following evaluation of the regulatory impact which would be incurred in carrying out H.R. 3279. The Act is not a regulatory measure in the sense of imposing Government-established standards or significant economic responsibilities on private individuals and businesses.

No personal information would be collected in administering the program. Therefore, there would be no impact on personal privacy.

Little, if any, additional paperwork would result from the enactment of H.R. 3279, as ordered reported.

CONGRESSIONALLY DIRECTED SPENDING

H.R. 3279, as ordered reported, does not contain any congressionally directed spending items, limited tax benefits, or limited tariff benefits as defined in rule XLIV of the Standing Rules of the Senate.

EXECUTIVE COMMUNICATIONS

The testimony provided by the Department of the Interior at the August 22, 2018, hearing on S. 1572, the companion measure for H.R. 3279, follows:

STATEMENT OF CHRISTOPHER MCALEAR, ASSISTANT DIRECTOR, NATIONAL CONSERVATION LANDS & COMMUNITY PARTNERSHIPS, BUREAU OF LAND MANAGEMENT, U.S. DEPARTMENT OF THE INTERIOR

Thank you for the opportunity to testify on the Federal helium program managed by the Bureau of Land Management (BLM), and on S. 1572, Helium Extraction Act of 2017. S. 1572 would amend the Mineral Leasing Act of 1920 (MLA) to provide a mechanism for industry to produce helium from Federal lands. The Department of the Interior (Department) appreciates the opportunity to review S. 1572 and supports this legislation.

We also appreciate the sponsors' interest in the BLM's helium program and would welcome the opportunity to work with the sponsor to improve management of this valuable commodity and to ensure that Federal agencies retain assured access for future national security, biomedical, and other technical purposes.

The BLM plays a key role in the careful management and stewardship of the only significant long-term storage facility for crude helium in the world, known as the Federal Helium Reserve (Reserve). Helium is a critical, non-renewable natural resource that is important in military reconnaissance, medical imaging, space exploration, fiber optics manufacturing, welding, and commercial diving. Helium is a by-product of oil and natural gas production and is usually captured by stripping it from the natural gas. Geologic conditions in Texas, Oklahoma, and Kansas make the natural gas in these areas some of the most helium-rich in the United States, often ranging from 0.5 to 1.5 percent of the gas extracted during production.

Because of helium's potential to lift military reconnaissance devices high above battlefields, the Federal government's interest in the resource dates back to World War I. Recognizing this key military use for helium, the Mineral Leasing Act of 1920 reserved to the Federal government all helium produced on Federal lands—a reservation that remains in effect today. After World War I, recognition of the potential for helium recovery in the Texas Panhandle, Western Oklahoma, and Kansas led to the development of

the Federal helium program focused in that area. In 1929, the Bureau of Mines commissioned the Amarillo Helium Plant and Cliffside Gas Field Facility near Amarillo, Texas, to produce helium-bearing natural gas from a naturally occurring geologic field known as the Bush Dome Reservoir.

After World War II, Federal use of helium shifted toward space exploration. The 1960 Helium Act Amendments changed the program's mandate from exclusive government production of helium to conservation of the resource by encouraging private natural gas producers to sell extracted crude helium to the Federal government for storage in the Bush Dome Reservoir. In 1996, the Helium Privatization Act (HPA) required the BLM (successor to Bureau of Mines) to make available for sale the vast majority of the stockpile of crude helium from the Reserve, in a manner to avoid market disruption. The BLM fully implemented this direction. In 1996, the Bush Dome Reservoir stored approximately 30.5 billion cubic feet (Bcf) of helium; by April 2017, about 4.4 Bcf of Federally owned helium and about 3.2 Bcf of privately owned helium remained in the Reserve.

The BLM's current helium program operates not only the original storage and pipeline system, but also a crude helium enrichment unit, owned by private industry refiners, that facilitates transmission of helium to private helium operations on the BLM's helium pipeline. The BLM also conducts domestic and, to a lesser extent, international helium resource evaluation and reserve tracking to determine the extent of available helium resources.

The BLM is responsible for selling helium from the Reserve to private entities at market-based prices determined by industry surveys and auctions. Federal users (e.g., the Departments of Energy and Defense, NASA, and the National Institutes of Health, among others), which primarily use helium for research and operations, may access Federal helium at a discounted rate through the current helium "In-Kind" program managed by the BLM. The In-Kind price is calculated as a discount from sales and auction prices. Federal agencies and their contractors generally purchase all of their refined helium from private suppliers who, in turn, purchase an equivalent amount of crude helium from the Reserve. In 2016, Federal agencies purchased about 122 million cubic feet (MMcf) of helium through the In-Kind program.

After funding operations, the BLM returned \$115 million to the U.S. Treasury in 2016. The Federal Helium Program operates using a revolving fund not subject to annual appropriations. All revenue generated from the helium program is deposited in the fund. This includes revenue derived from auctions and sales of helium from the Federal Helium Reserve, oil and gas residue sales from the crude helium enrichment process, storage and transportation fees, and royalty and fees sales from helium produced on Federal lands.

Continuing Congressional interest in privatizing the helium market ultimately resulted in enactment of the Helium Stewardship Act (HSA) of 2013. The HSA established September 30, 2021, as the sunset date for the Federal helium program. For the years preceding the sunset date, the HSA created a set of phased authorities for the BLM's management of the Reserve, establishing a "glide path" by which auctions and sales from the Reserve would draw down the amount of helium until there remained only 3 Bcf of helium, which would be reserved solely for Federal users.

The BLM is implementing the HSA's statutory directives to sell helium from the Reserve to a level of 3 Bcf of recoverable helium (not including privately stored helium) by 2021. This will be accomplished with annual sales and auctions of decreasing volumes through 2021. The BLM expects to reach the 3 Bcf milestone after this sale. Anyone meeting the statutory definition of a "qualified bidder" may participate in the helium auctions. A qualified bidder is a person seeking to purchase helium for the person's own use, refining, or resale to users.

The BLM offered helium volumes in three distinct sales in FY 2017 for delivery in FY 2018:

- The "FY 2018 Delivery Phase B Auction," conducted in July 2017, of 500 MMcf in 30 lots, for \$59.7 million. The helium that was auctioned represented over 55 percent of the total volume that the BLM will make available from the Reserve in FY 2018. This met the 55 percent requirement mandated in the HSA.
- The "FY 2018 Delivery Phase B Non-Allocated Sale," conducted in August 2017, of 40 MMcf for \$4.76 million.
- The "FY 2018 Delivery Phase B Allocated Sale," conducted in August 2017, of 360 MMcf for \$42.8 million.

The total volume of helium sold, excluding In-Kind helium, was 900 MMcf, and the total revenue generated from helium sales in FY 2017 was \$107.2 million. The BLM intends to hold the next sale and auction on August 31, 2018, for delivery in FY 2019. At this sale, 210 MMcf will be offered at auction, an additional 9 MMcf will be offered at the "Phase B Non-Allocated Sale," and 81 MMcf will be offered at the "Phase B Allocated Sale" for a total of 300 MMcf.

Helium commonly exists as a minor component of most natural gas plays. Natural gas typically is transported by pipeline to a processing plant where it is separated into marketable components, which could include helium if it is present in sufficient amounts. Because the helium from leases on Federal lands is reserved to the United States (i.e., there is no authority under the MLA to lease helium), natural gas lessees now can enter into contracts with the BLM to provide for the processing and sale of the helium. This type of arrangement occurs, for example, near Kemmerer, Wyoming, where helium produced from Fed-

eral lands partially supplies an ExxonMobil helium refinery.

Similar contracts can enable the recovery of helium as a primary gas in combination with a BLM oil and gas lease, and is feasible where the gas composition in a reservoir consists of relatively higher helium concentration in a low Btu gas stream. For example, the BLM approved an Application for Permit to Drill (APD) for a 1,100-foot exploratory well in the Harley Dome gas field in eastern Utah and an associated right-of-way to transport the produced gas via a surface pipeline to a new gas processing plant. With sufficient quality and quantity of helium, the proponent constructed a four-inch, 7,183-foot pipeline to a small plant where the helium is removed from the gas stream and compressed for truck transport. The well is located five miles west of the Utah-Colorado border on Federal lands in northern Grand County and the helium extraction plant is located 1.4 miles from the well on private property.

S. 1572 would amend the MLA to define helium as a natural gas for purposes of lease extension. This would have the practical effect of allowing helium production when there are no economic quantities of oil and gas being produced from the leases (which would trigger expiration of the leases under the current MLA).

The BLM supports S. 1572 as it not only opens up public lands to helium development but also supports the administration's priorities to secure reliable supplies of critical minerals, including helium.

To prepare for the sunset of the Federal helium program, the HSA directed the Department, with other agencies, to prepare a Report to Congress on a plan to provide for an orderly transition to a privatized helium system by 2021. The HSA required that the Report offer a Federal Agency Helium Acquisition Strategy, including a description of a 20-year Federal strategy for securing access to helium that minimizes any potential supply disruptions for Federal users. This Report was transmitted to the Congress on April 1, 2016. As discussed in the 2016 Report, the BLM is on track for this transition.

When the transition to a privatized system occurs, Federal users will no longer be able to meet their helium requirements through the Federal Helium Reserve and the In-Kind program, and will need to find new sources of helium. Federal defense and research access to helium would rely on the private helium market, and market prices. This will likely result in increased costs to meet Federal helium requirements for defense and homeland security uses, and in planned aerospace programs. The Report to Congress recommends that a new Royalty In-Kind program be created which would provide Federal agencies with an assured source of helium into the future. Under a new Royalty In-Kind program, rather than the royalties that BLM currently receives, the BLM would track the equivalent helium volumes at each refining plant. The refiner would

subsequently make that amount available to Federal agencies. Federal agencies could then enter into contracts with refiners to obtain helium.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by H.R. 3279, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in *italic*, existing law in which no change is proposed is shown in roman):

MINERAL LEASING ACT

Public Law 66–146, as amended through Public Law 115–232

AN ACT To promote the mining of coal, phosphate, oil, oil shale, gas, and sodium on the public domain

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That deposits of coal, phosphate, sodium, potassium, oil, oil shale, gilsonite (including all vein-type solid hydrocarbons), or gas, and lands containing such deposits owned by the United States, including those in national forests, but excluding lands acquired under the Act known as the Appalachian Forest Act, approved March 1, 1911 (36 Stat. 961), and those in incorporated cities, towns, and villages and in national parks and monuments, those acquired under other Acts subsequent to February 25, 1920, and lands within the naval petroleum and oil-shale reserves, except as hereinafter provided, shall be subject to disposition in the form and manner provided by this Act to citizens of the United States, or to associations of such citizens, or to any corporation organized under the laws of the United States, or of any State or Territory thereof, or in the case of coal, oil, oil shale, or gas, to municipalities. Citizens of another country, the laws, customs, or regulations of which deny similar or like privileges to citizens or corporations of this country, shall not by stock ownership, stock holding, or stock control, own any interest in any lease acquired under the provisions of this Act.

The term “oil” shall embrace all nongaseous hydrocarbon substances other than those substances leasable as coal, oil shale, or gilsonite (including all vein-type solid hydrocarbons).

The term “combined hydrocarbon lease” shall refer to a lease issued in a special tar sand area pursuant to section 17 after the date of enactment of the Combined Hydrocarbon Leasing Act of 1981.

The term “special tar sand area” means (1) an area designated by the Secretary of the Interior’s orders of November 20, 1980 (45 FR 76800–76801) and January 21, 1981 (46 FR 6077–6078) as containing substantial deposits of tar sand.

The United States reserves the ownership of and the right to extract helium from all gas produced from lands leased or otherwise granted under the provisions of this Act, under such rules and regulations as shall be prescribed by the Secretary of the Interior: Provided further, That in the extraction of helium from gas produced from such lands it shall be so extracted as to cause no substantial delay in the delivery of gas produced from the well to the pur-

chaser thereof and that extraction of helium from gas produced from such lands shall maintain the lease as if the extracted helium were oil and gas.

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