

Regional Economic Effects of Limiting Future Oil and Gas Leasing on Federal Lands in Western Colorado



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The Bureau of Land Management (BLM) is currently conducting a Supplemental Environmental Impact Statement (SEIS) for the Colorado River Valley Field Office (CRVFO) and Grand Junction Field Office (GJFO) Resource Management Plans (RMPs) in Western Colorado. The planning process revolves around the allocation of BLM lands as open or closed for oil and gas leasing.¹ Consequently, there are questions about the economic implications of the BLM's decision.

The Draft SEIS, released in August 2023, included a preferred Alternative (E) that would close areas to future oil and gas leasing based on no known, low, and medium oil and gas development potential. The Draft SEIS also considered one additional new alternative, Alternative F, which would close additional lands to future leasing where critical habitat, wilderness characteristics, special recreational values, municipal watersheds, and other sensitive values exist.

Closure of federal lands to oil and gas leasing would limit future fossil fuel development opportunities in Western Colorado but would enhance conservation and amenity-based economic development.² As the revised plan will have no impact

on existing federal leases, nor existing or future state and private leasing, the economic impacts of the BLM's final decision are likely to be minor and not felt for a number of years, especially given that much of the prospective land in the planning area is already under lease. However, the potential benefits to other sectors of the economy could be significant and more immediate.

The oil and gas trade associations (the Trades) and Mesa County responded to the Draft SEIS, noting a number of economic effects and suggesting that closing areas to future oil and gas leasing will have substantial adverse economic impacts. However, these concerns fail to acknowledge the whole picture. Given the declining importance of the oil and gas industry to Mesa and Garfield Counties and the rise of high-wage service industries over the last decade, it is important to illustrate the economic reality and trends of the region to provide proper regional economic context for this planning process.

OIL AND GAS PRODUCERS IN THE PICEANCE BASIN HAVE A COMPARATIVE ECONOMIC DISADVANTAGE

Oil and gas production from the Piceance Basin has been rapidly declining since 2012. Figures 1 and 2 show this decline for Garfield and Mesa Counties, along with the federal share of production.

¹ See *Wilderness Workshop v. United States BLM*, 342 F. Supp. 3d 1145, 1167 (D. Colo. 2018) (the process is also intended to cure deficiencies related to BLM's analysis of the "severity and impacts of GHG [greenhouse gas] pollution" from oil and gas development identified by a federal judge after the 2015 RMPs were challenged in court).

² Indeed, considering the benefits (as well as potential impacts) of additional closures is an important goal of this process. See e.g., Draft SEIS at 2-1 ("Plaintiffs, in their merit brief, stated 'it would have been entirely reasonable for BLM to consider an alternative eliminating oil and gas leasing in areas determined to have only moderate or low potential for oil and gas development.' The District Court for Colorado agreed with this statement and stated, 'it seems a reasonable alternative would be to consider what else may be done with the low and medium potential lands if they are not held open for leasing' (quoting *Rocky Mtn. Oil & Gas Ass'n v. Watt*, 696 F.2d 734, 738 n.4).").

Figure 1: Garfield and Mesa County Oil Production 2003-2022

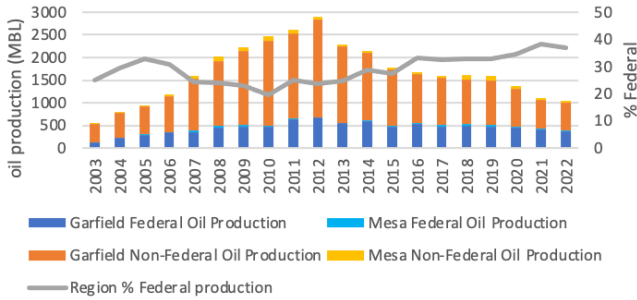
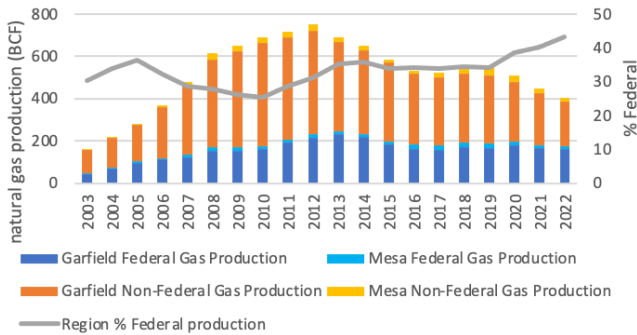


Figure 2: Garfield and Mesa County Natural Gas Production 2003-2022



As noted in the Draft SEIS (p. 3-153), employment in the planning area’s mining sector (inclusive of oil and gas) decreased by 56% from 7,000 jobs in 2010 to 3,000 jobs in 2020. Despite this large collapse of oil and gas employment in the region, the broader regional economy gained 5.4% jobs during the same time span and saw large increases in construction and service industries such as health care, business, and education. Mesa County, in its response letter concerning the Draft SEIS, acknowledged the rapid decline in the regional economic importance of oil and gas development and attributed it to increasing state oil and gas environmental regulations in Colorado.

Overall Colorado oil and gas production has increased substantially over the last decade, indicating that state regulations are not hindering state production. Figures 3 and 4 show Colorado oil and gas production from 2003-2022. Western Colorado has a comparative economic disadvantage, due to isolation from large markets and having natural gas as the primary fossil fuel resource (as opposed to oil), when compared to other oil and gas produc-

ing regions inside Colorado and throughout the Inter-Mountain West. Current development in Weld and Adams Counties in northeastern Colorado is far out-pacing Piceance Basin and Western Colorado oil and gas development.

Figure 3: Colorado Oil Production

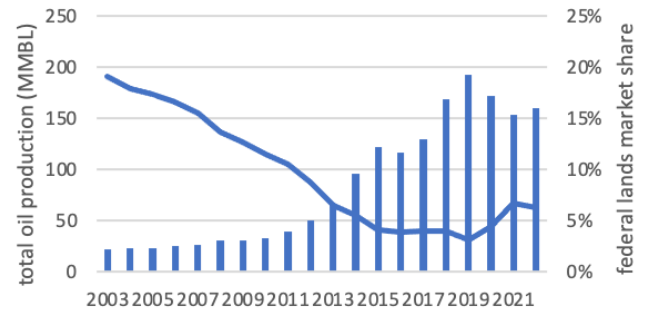
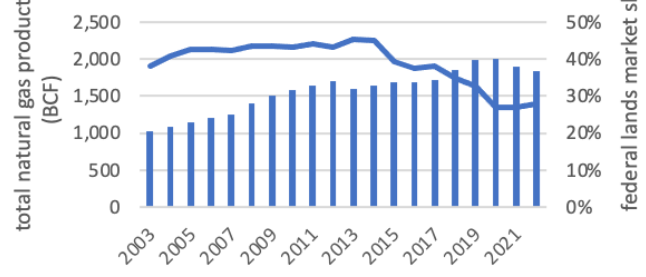


Figure 4: Colorado Natural Gas Production



REASONABLE FORESEEABLE DEVELOPMENT (RFD) SCENARIOS ARE INFLATED AND BELIEVE REGIONAL ECONOMIC REALITY

Forecasts and analysis of future oil and gas development in Western Colorado are improperly based almost entirely on the supply, or resource potential, of oil and gas based on geological assessments. In the Draft SEIS (p. E-2), for example, the BLM states that “projections in the RFDs are based largely on unconstrained development.” Immediately after this statement the BLM acknowledges that development is influenced by numerous other factors, such as “the cyclical trends of commodity price, technological challenges, development costs, and geopolitical influences; each of these is subject to sudden and large fluctuations and unanticipated and protracted trends.”

Despite stating the importance and influence of such factors, BLM's Western Colorado oil and gas development projections are based on unconstrained models of geological assessments. Consequently, these projections make zero economic sense and guarantee that any adverse economic impacts (due to forgone development and production) associated with BLM's unconstrained forecasts will be extremely inflated and of little use in regional economic analysis.

For this analysis to pass muster, the several factors essential to oil and gas development listed by the BLM, but not included in the agency's development projections, such as technically and economically accessible resources (including development costs), must be modeled and entered as constraining parameters. This is imperative for a realistic economic impact analysis. For example, incorporating recent trends for the Piceance Basin of rapidly decreasing economically feasible oil and gas production would clearly illustrate that the closure of no known, low, and medium potential public lands to future oil and gas leasing will have an insignificant effect on overall regional oil and gas development.

The Draft SEIS uses a hypothetical and unconstrained oil and gas development scenario to project future economic impacts associated with potential forgone well development resulting from the considered alternatives. The unconstrained development scenario assumes a total of 9,258 new wells will be developed over the next 20 years to access federally-owned oil and gas in the planning area. The BLM analysis projects that the closure of limited resource potential areas included in the preferred alternative (Alternative E) would mean that 599 (6.5 percent) of these projected wells would not be developed.

Garfield and Mesa Counties are the two primary counties that will be affected by this RMP, with Garfield County comprising more than 90 percent of the two counties' oil and gas production. In 2021 Mesa County had zero wells drilled while Garfield County experienced its lowest number of wells developed since 1998, with just 30 total wells devel-

oped on federal, state, and private lands.³ Thus the total number of wells developed in Garfield County during 2021 is equivalent to the number of wells projected to be forgone each year for the next 20 years due to the closure of future leasing of low potential federal areas in Western Colorado. If we assume roughly 40% of new wells developed in the region access the federal mineral estate,⁴ then we can estimate that about 12 of the wells drilled in Garfield County during 2021 were wells drilled (either on federal or private land) to access the federal mineral estate.

The RFD-based projections used for the BLM's economic impact analysis assume 463 new federal wells will be developed annually. This represents a 3,858% increase (463/12) over the approximate number of federal wells drilled in the affected planning area in 2021. Given a linear modeling approach, the percentage of assumed forgone wells and all subsequent projected losses in employment and labor income will also be inflated by over 3,800% compared to 2021.

The most recent complete year data for new wells drilled in the planning region comes from 2022, when once again zero were drilled in Mesa County and 108 new wells were drilled in Garfield County.⁵ Again, using the projected percentage of federal wells from the CRVFO RFD⁶ of roughly 40%, this most recent data indicates that approximately 43 federal wells were drilled in the affected planning region in 2022. While not quite as inflated as compared to 2021 data, the RFD-based projections still represent a 1,077% increase (463/43) over the approximate number of federal wells drilled in the

3 https://www.gjsentinel.com/news/drilling-activity-fell-further-in-piceance-basin-last-year/article_1ef6a5b8-b782-11ec-9b34-5f7f25cbd955.html.

4 P. 38. Appendix S: Reasonable Development Scenario Oil and Gas in the Glenwood Springs Field Office Administrative Boundary: https://eplanning.blm.gov/public_projects/lup/68506/110860/135765/34_Appendix_R_RFDS_Oil_and_Gas.pdf. It should be noted that the RFD for the CRVFO projects 40% of all projected future wells to be accessing federally-managed minerals. However, the Draft SEIS (p. 1-2) states that only 20% of development is related to federally-managed lands, meaning that the exaggerated future well development projections are even more inflated than stated here.

5 <https://www.postindependent.com/news/slow-but-steady-gas-drilling-up-a-bit-last-year-from-deep-lows-but-didnt-mirror-big-price-rises/>.

6 P. 38. Appendix S: Reasonable Development Scenario Oil and Gas in the Glenwood Springs Field Office Administrative Boundary: https://eplanning.blm.gov/public_projects/lup/68506/110860/135765/34_Appendix_R_RFDS_Oil_and_Gas.pdf.

planning area during 2022. Thus, the projected number of forgone federal wells resulting from the closure of areas with no known, low, and medium oil and gas development potential are greatly exaggerated and certainly do not reflect the existing economic reality.

Additionally, the RFD⁷ pertaining to most all of Garfield County (93%) states multiple times that industry and resource planners expect 99% of future oil and gas activity will occur in the area mapped as high occurrence potential—and only 1% of future activity will occur in wildcat areas mapped as medium, low, and no potential. Thus, closure of limited oil and gas potential federal lands to future leasing will affect only 1% of assumed future development in Garfield County. This does not accord with the assumptions and conclusions discussed above and the BLM’s economic assessment must resolve these apparent contradictions.

Finally, the economic impact analysis in the Draft SEIS (p.167-171) included the greatly exaggerated RFD scenarios from 2014 and 2015 RMPs to project a total of 11 jobs per forgone well, with almost 600 forgone wells assumed over the next 20 years. However (and as stated by the BLM on p. D-1 of the Draft SEIS), most of the 11 jobs per forgone well are indirect jobs—jobs not in the oil and gas industrial sectors but rather jobs in service industries that help support oil and gas development (e.g., financial, real estate, surveying, and business services). Yet, even with oil and gas development on the decline, the service industries in Mesa and Garfield County are steadily growing meaning that slightly reduced oil and gas development in the future will have a very minor impact on the regional economy. Forgone well development in the future will not have an impact on existing employment or existing production. In summary, the estimated economic impacts from future forgone well development (and future forgone production) detailed in the Draft SEIS are the result of hypothetical and unrealistic growth scenarios for a declining industry.

7 Appendix S: Reasonable Development Scenario Oil and Gas in the Glenwood Springs Field Office Administrative Boundary: https://eplanning.blm.gov/public_projects/lup/68506/110860/135765/34_Appendix_R_RFDS_Oil_and_Gas.pdf.

OIL AND GAS CLOSURES SUPPORT AMENITY-BASED JOBS AND REVENUE

Contrary to responses from the Trades, oil and gas development is not compatible with outdoor recreation and amenity-based development. Rasch et al. (2018)⁸ demonstrated decreases in recreation site visitation and correlating decreases in recreation user fees on Western public lands and recreation sites within five kilometers of oil and gas wells. Hjerpe et al. (2020)⁹ found a negative association between net migration and oil and gas dependency in rural counties in the American West. Thus, research indicates the incompatibility between oil and gas development and outdoor recreation and amenity-based development. This also indicates that future closure of federal lands with limited oil and gas potential will have a positive effect on recreation visitation and amenity migration—and subsequent positive regional economic impacts that have not been included in the Draft SEIS economic analyses. Indeed, there are likely potential economic benefits of closing additional lands to oil and gas leasing if those lands have high value for recreation and amenity-based values. There are likely economic benefits to new closures regardless of the occurrence potential for oil and gas in those areas.

Oil and gas development also generates local air pollution, including increased ground level ozone, nitrogen oxides, and suspended particulate matter.¹⁰ When oil and gas production begins, so too does the risk of polluting local waterways and aquifers with leaked chemicals and wastewater. Local air and water pollution combine with increased truck traffic, noise, and the impairment of the natural scenery, to lower the values of houses and property near oil and gas development.¹¹ With this econom-

8 Rasch, R., Reeves, M., & Sorenson, C. (2018). Does oil and gas development impact recreation visits to public lands? A cross-sectional analysis of overnight recreation site use at 27 national forests with oil and gas development. *Journal of Outdoor Recreation and Tourism*, 24, 45-51.

9 Hjerpe, E., Hussain, A., & Holmes, T. (2020). Amenity migration and public lands: Rise of the protected areas. *Environmental Management*, 66(1), 56-71.

10 Kerkvliet, J. and P. Morton. 2020. *Assessing the Costs of Air Pollution from Unconventional Oil and Natural Gas Activities*. Available at: https://www.conservationecon.org/_files/ugd/5f-c209_51a3db472aff431db9c707800c8f918d.pdf.

11 Morton, P., Kerkvliet, J., & Hjerpe, E. (2022). Impact Fees, Bonding Reform, and Oil and Gas Development. *Colorado Environmental Law Journal*, 33, 103.

ic understanding, closure of public lands to future oil and gas leasing will have additional positive regional economic effects by enhancing nearby property values and increasing the conservation appeal of these public lands for visitation and recreation.

Furthermore, downstream greenhouse gas emissions coming from Western Colorado oil and gas contribute to climate change damages and negatively affect other major economic engines for Colorado such as skiing, outdoor recreation, and agriculture. The Colorado Fiscal Institute estimated that pollution from oil and gas activities throughout Colorado will result in over \$13 billion in economic damages from 2020 to 2030.¹² The climate cost of increasing oil and gas development is not worth the diminishing economic returns it provides, especially when considering the economic harm done to other industries. However, the BLM's economic analysis inflates the potential economic impacts of closures to the oil and gas industry but fails to analyze the immediate and potentially significant economic benefits that closures may have on other sectors of the economy.

CONCLUSION: CLOSING AREAS TO NEW LEASING WOULD HAVE NEGLIGIBLE IMPACTS ON INDUSTRY AND BENEFIT OTHER SECTORS

Reductions in future leasing opportunities for oil and gas on public lands in Western Colorado are unlikely to affect the overall regional economy. This is because:

- Federal oil and gas production accounts for a relatively minor portion of total production in Mesa and Garfield Counties, with the most recent 20-year average being 28% and 33% respectively.
- Future closure of low potential public lands to oil and gas leasing would have almost no effect on:
 - Existing oil and gas production from state and private lands (the majority of current production).
 - Future oil and gas development on state and private lands.

¹² Colorado Fiscal Institute. (2023). *Clearing the Air: The Real Costs and Benefits of Oil and Gas for Colorado*. <https://www.coloradofiscal.org/costs-benefits-oil-and-gas-colorado/library/reports/>

- Existing leases (including numerous non-producing leases) and oil and gas production on federal lands.
- Future leases and oil and gas development on federal lands in areas with high resource potential.
- For the CRVFO and Garfield County, only 1% of all future oil and gas development is expected to come from wildcat areas with medium and low potential for oil and gas—implying that closure of these federal areas to future leasing would have no more than a 1% effect on future (and hypothetical) development and production.
- Areas with the greatest resource and economic potential on federal lands in Western Colorado have been available for leasing for over 100 years. Thus, the most economically prospective areas have already been leased and will not be impacted by a closure in this process. Remaining unleased lands largely have low economic potential for oil and gas but high potential for conflict with other uses and users of public lands.
- Other economic factors, such as lack of a comparative economic advantage in the Piceance Basin, are diminishing the importance of the oil and gas industry in Mesa and Garfield Counties. For example, from 2010 to 2020 the region's oil and gas industry experienced a workforce reduction of 56% while the employment within the region's economy increased 5%. This is indicative of the immaterial effect of the closure to leasing of no known, low, and medium potential federal lands.
- Any losses in county and regional oil and gas-associated revenues (i.e., royalties, severance taxes, etc.) would be minimal, as closing low-potential federal lands targets the places where the least amount of revenue could be produced. Furthermore, oil and gas-associated revenues have rapidly declined in the region over the last decade, even with keeping low potential public lands open to leasing.
- Other sources of county revenue, such as property, sales, and visitor taxes are steadily increasing in Mesa and Garfield Counties, while oil and gas revenues are decreasing. These other sources of reve-

nue can be used to replace any hypothetical losses in future oil and gas revenues for the counties and municipalities.¹³

- Protecting public lands from future oil and gas leasing through closures will have a beneficial ef-

fect on other regional industries (e.g., tourism, outdoor recreation, and infilling high-wage service industries related to amenity-based development) and will reduce climate change damages.

¹³ For detailed trends of oil and gas royalty decreases and property and sales tax increases for Garfield and Mesa Counties, see Hjerpe, E. and G. Aldrich (2023). *Economic Transition Away from Federal Oil and Gas in Western Colorado*. Available at: https://www.conservationeconomics.org/_files/ugd/5fc209_f7667b306d544ebc8fdc166ec3c22b87.pdf?index=true.