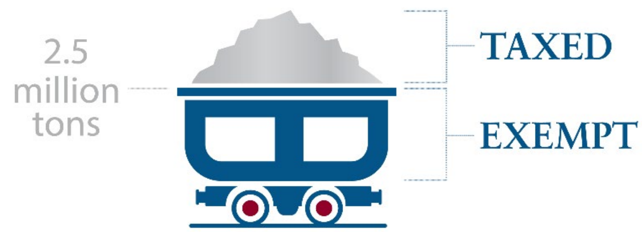
MOLYBDENUM ORE TONNAGE EXEMPTION

EVALUATION SUMMARY | JANUARY 2021 | 2021-TE3

TAX TYPE	Severance
YEAR ENACTED	1999
REPEAL/EXPIRATION DATE	None
REVENUE IMPACT (TAX YEAR 2019)	$125,000
NUMBER OF TAXPAYERS	1



KEY CONCLUSION: The exemption has reduced the amount of severance taxes collected on molybdenum ore, as intended.

WHAT DOES THIS TAX EXPENDITURE DO?

The Molybdenum Ore Tonnage Exemption exempts the first 625,000 tons of molybdenum ore produced in each quarter, which is up to 2.5 million tons per year, from the molybdenum ore severance tax. Since the tax is set at $0.05 per ton of ore, the exemption provides an annual tax savings of up to $125,000.

WHAT IS THE PURPOSE OF THIS TAX EXPENDITURE?

The legislative declaration of the enacting legislation (House Bill 99-1249) indicates that the purpose of the exemption is "to provide for a reduction in the amount of severance taxes collected upon…molybdenum ore."

WHAT POLICY CONSIDERATIONS DID THE EVALUATION IDENTIFY?

The General Assembly may want to examine the effective severance tax rate as a percentage of gross income on molybdenum ore, including the impact of the exemption on this effective rate, to ensure that it continues to align with the General Assembly's intent. We found that the effective rate imposed on molybdenum ore as a percentage of gross income is significantly less than the severance tax rates for metallic minerals, coal, oil, and natural gas.

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EVALUATION RESULTS

WHAT IS THE TAX EXPENDITURE?

Colorado imposes severance taxes on the extraction of several types of natural resources in the state, including molybdenum, which is a metal commonly used as an alloy in steel and iron production. Per statute [Section 39-29-104(1), C.R.S.], molybdenum is subject to severance tax at a rate of 5 cents per ton of molybdenum ore extracted.

The Molybdenum Ore Tonnage Exemption (Molybdenum Tonnage Exemption) [Section 39-29-104(1), C.R.S.] exempts the first 625,000 tons of molybdenum ore produced in each quarter, or $31,250, which is up to 2.5 million tons per year, or $125,000, from the molybdenum ore severance tax. It was enacted in 1999 by House Bill 99-1249 and has not been changed since then.

The exemption is claimed on Line 2 of the Colorado Molybdenum Ore Severance Tax Return (Form DR 0022), which must be filed quarterly by the operator and interest owners of any mine that produces molybdenum in Colorado. According to the Department of Revenue, the exemption may only be claimed once by a given company, regardless of how many mines the company owns.

WHO ARE THE INTENDED BENEFICIARIES OF THE TAX EXPENDITURE?

Statute does not directly state the intended beneficiaries of the Molybdenum Tonnage Exemption. Based on statute, we inferred that the intended beneficiaries are molybdenum mine operators and interest owners in the state. According to data from the Colorado Division of Reclamation, Mining, and Safety (DRMS), which is an agency within the Department of Natural Resources, there are currently two actively producing molybdenum mines in Colorado.

WHAT IS THE PURPOSE OF THE TAX EXPENDITURE?

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IS THE TAX EXPENDITURE MEETING ITS PURPOSE AND WHAT PERFORMANCE MEASURES WERE USED TO MAKE THIS DETERMINATION?

We determined that the Molybdenum Tonnage Exemption is meeting its purpose because it has reduced the amount of severance taxes collected on molybdenum ore.

Statute does not provide quantifiable performance measures for this exemption. Therefore, we created and applied the following performance measure to determine the extent to which the exemption is meeting its purpose:

PERFORMANCE MEASURE: *To what extent has the Molybdenum Tonnage Exemption reduced the amount of severance taxes collected on molybdenum ore?*

RESULT: We determined that the Molybdenum Tonnage Exemption has likely reduced the amount of severance taxes collected on molybdenum ore by between 21 percent and 28 percent per year in Tax Years 2017 through 2019.

We were unable to release tax return data from the Department of Revenue regarding the extent to which the exemption has reduced taxpayers' severance tax liabilities due to there being too few taxpayers claiming it to report this information without violating confidentiality requirements. However, based on DRMS' publicly available records of mines currently or previously permitted in Colorado, it is likely that only two mines have produced molybdenum in recent years. We determined that these two mines are both owned and operated by the same company. This company's 2019 10-K, a publicly available report that is filed with the United States Securities and Exchange Commission on an annual basis, contains production data for each mine, which we used to estimate the company's severance tax liabilities and exemption amounts for Tax Years 2017 through 2019, as EXHIBIT 1 demonstrates.

EXHIBIT 1. ESTIMATED REDUCTION IN SEVERANCE TAX LIABILITY DUE TO THE MOLYBDENUM TONNAGE EXEMPTION, TAX YEARS 2017 THROUGH 2019

Production Amount x *Severance Tax Rate* = *Severance Taxes Due or Exempted*

TAX YEAR	2017	2018	2019			2017	2018	2019
Ore production (million tons)	9.05	11.23	12.11	x Severance tax rate $0.05 per ton	= Severance tax liability without Exemption	$452,639	$561,272	$605,530
Maximum production amount exempted (million tons)		2.5			= Amount exempted		$125,000	
Taxable ore production (million tons)	6.55	8.73	9.61		= Severance tax liability with Exemption	$327,639	$436,272	$480,530

SOURCE: Office of the State Auditor analysis of the company's 2019 10-K and Section 39-29-104(1), C.R.S.

Based on these calculations, we estimated that the Molybdenum Tonnage Exemption would have reduced this taxpayer's severance tax liability by about 28 percent in Tax Year 2017, 22 percent in Tax Year 2018, and 21 percent in Tax Year 2019. Finally, we verified with the company that they are aware of the Molybdenum Tonnage Exemption and claim it on their severance tax returns.

WHAT ARE THE ECONOMIC COSTS AND BENEFITS OF THE TAX EXPENDITURE?

We found that the Molybdenum Tonnage Exemption had an estimated revenue impact of $125,000 per year, the maximum amount allowed for any given taxpayer, for Tax Years 2017 through 2019. Although the Department of Revenue collects the data necessary to determine the exemption's revenue impact, this data has not been releasable during recent years due to taxpayer confidentiality requirements. Therefore, we used publicly available data in order to estimate the exemption's impact to state revenue.

As discussed, we identified only one company that has mined molybdenum in Colorado in recent years. Based on this company's 10-K, we found that the company has produced over 2.5 million tons of molybdenum ore (the maximum production amount allowed under the exemption) annually during Tax Years 2017 through 2019. Therefore, it is likely that the company is receiving the maximum possible benefit from the exemption. EXHIBIT 2 demonstrates the calculations for estimating the annual revenue impact in Tax Years 2017 through 2019.

EXHIBIT 2. ESTIMATED IMPACT OF MOLYBDENUM TONNAGE EXEMPTION TO STATE REVENUE, TAX YEARS 2017 THROUGH 2019

	2017	2018	2019
Estimated molybdenum ore production (million tons)	9.05	11.23	12.11
Maximum molybdenum ore production amount exempted (million tons)	2.5	2.5	2.5
x Severance tax rate (per ton)		$0.05	
= Estimated revenue impact to State	$125,000	$125,000	$125,000

SOURCE: Office of the State Auditor analysis of the company's 2019 10-K and Section 39-29-104(1), C.R.S.

WHAT IMPACT WOULD ELIMINATING THE TAX EXPENDITURE HAVE ON BENEFICIARIES?

Eliminating the Molybdenum Tonnage Exemption would increase the severance tax liabilities of molybdenum mine operators and interest owners in Colorado, since this would apply the molybdenum ore severance tax to every ton of molybdenum ore mined in the state. For current or future operations with quarterly production amounts over 625,000 tons of molybdenum ore, the severance tax liability would increase by $125,000 per year. Smaller operations producing no more than 625,000 tons per quarter would incur annual severance tax liabilities equal to the number of tons of molybdenum ore mined multiplied by the severance tax rate of 5 cents per ton of ore.

Mining industry representatives generally reported that even small amounts of financial assistance can be helpful for mines, particularly when commodity prices are low. Additionally, both of Colorado's molybdenum mines are primary producers, meaning that molybdenum is the main resource being extracted, as opposed to byproduct producers, for which another metal, such as copper, is the main commodity being mined, with molybdenum also extracted as a byproduct. According to an industry representative, primary molybdenum producers are more affected by changes in molybdenum prices than byproduct producers, especially since primary production of molybdenum is more costly than byproduct production.

ARE THERE SIMILAR TAX EXPENDITURES IN OTHER STATES?

We examined the severance tax treatment of molybdenum in the six states, other than Colorado, that have known molybdenum deposits: Arizona, Idaho, Montana, Nevada, New Mexico, and Utah. All of these states levy a severance or similar tax on molybdenum production, with the tax bases calculated as a percentage of either the gross value of the molybdenum produced or the gross value less deductions for certain production or other costs. The severance tax rates range from a low of 0.125 percent of the tax base in New Mexico to 5 percent of the tax base in Nevada. As demonstrated in EXHIBIT 3, two of the six states, Montana and Utah, allow for tax expenditures similar to Colorado's Molybdenum Tonnage Exemption that exempt a portion of the tax base from the severance tax.

EXHIBIT 3. MOLYBDENUM PRODUCTION AND SIMILAR EXEMPTIONS IN OTHER STATES

STATE	MOLYBDENUM PRODUCED IN 2019?	TONNAGE OR SIMILAR EXEMPTION AVAILABLE?
Arizona	Yes	No
Idaho	No	No
Montana	Yes	Yes. Up to $250,000 of the annual tax base is exempt.
Nevada	Yes	No
New Mexico	No	No
Utah	Yes	Yes. Up to $40,000 of the annual tax base may be exempt, depending on whether the molybdenum is sold as ore and whether it is sold or shipped out of state.

SOURCE: Office of the State Auditor analysis of other states' statutes and the United States Geological Survey's Mineral Commodity Summaries 2020.

ARE THERE OTHER TAX EXPENDITURES OR PROGRAMS WITH A SIMILAR PURPOSE AVAILABLE IN THE STATE?

We identified the following three tax expenditures that function similarly to the Molybdenum Tonnage Exemption, all of which provide a threshold below which their respective severance taxes do not apply:

- METALLIC MINERALS THRESHOLD EXEMPTION [SECTION 39-29-103(1)(b), C.R.S.]—Exempts the first $19 million in annual gross income from the metallic minerals severance tax.

- COAL TONNAGE EXEMPTION [SECTION 39-29-106(2)(b), C.R.S.]—Exempts the first 300,000 tons of coal extracted each quarter from the coal severance tax.

- OIL SHALE NON-COMMERCIAL PRODUCTION EXEMPTION [SECTION 39-29-107(3), C.R.S.]—Exempts the first 15,000 tons per day of oil shale rock or 10,000 barrels per day of shale oil liquid, whichever is greater, from the oil shale severance tax.

WHAT DATA CONSTRAINTS IMPACTED OUR ABILITY TO EVALUATE THE TAX EXPENDITURE?

The Molybdenum Tonnage Exemption is itemized on the Colorado Molybdenum Ore Severance Tax Return (Form DR 0022), and the Department of Revenue reported that this data is extractable from GenTax, the Department's tax processing system. However, data for the exemption has not been releasable in recent years due to taxpayer confidentiality requirements. Statutes [Sections 39-21-113(4)(a), 113(5), and 305(2)(b), C.R.S.] prohibit the Department of Revenue from publishing any information that would allow the identification of any particular tax return and require our office to follow the same requirement for our tax expenditure evaluations. As a result of this data constraint, we were unable to use Department of Revenue data to determine the revenue impact of the exemption.

WHAT POLICY CONSIDERATIONS DID THE EVALUATION IDENTIFY?

THE GENERAL ASSEMBLY MAY WANT TO EXAMINE THE EFFECTIVE SEVERANCE TAX RATE AS A PERCENTAGE OF GROSS INCOME ON MOLYBDENUM ORE, INCLUDING THE IMPACT OF THE MOLYBDENUM TONNAGE EXEMPTION ON THIS EFFECTIVE RATE, TO ENSURE THAT IT ALIGNS WITH THE GENERAL ASSEMBLY'S INTENT. As discussed, we determined that the Molybdenum Tonnage Exemption is meeting its purpose because it reduces the amount of severance taxes collected on molybdenum ore that is mined in Colorado. Specifically, for the one company that is likely claiming it, we estimated that the exemption reduced its severance tax liability by $125,000 each year between Tax Years 2017 and 2019.

However, the effective severance tax rate on molybdenum ore may be lower as a percentage of gross income than the General Assembly anticipated at the time it established the Molybdenum Tonnage Exemption. Specifically, we found that the price of molybdenum has increased significantly since 1999, when the exemption was created, from $2.63 per pound in 1999 to $11.79 per pound in 2019. Since the severance tax is calculated as a flat 5 cents per ton of ore and is not adjusted for inflation or market changes, the effective severance tax rate as a percentage of gross income generally decreases when molybdenum prices increase. Furthermore, molybdenum prices have fluctuated substantially since 1999, increasing to as high as $32 per pound in 2005.

In addition, as of 2017, the effective severance tax rate for molybdenum ore was much lower than the effective severance tax rates levied on other resources extracted in the state. The Molybdenum Tonnage Exemption amplifies this difference in tax treatment since the exemption has lowered annual molybdenum ore severance tax liabilities by an average of 24 percent each year between Tax Years 2017 and 2019. EXHIBIT 4 compares the estimated 2017 severance tax rates levied on molybdenum ore and those levied on other nonrenewable resources under three different circumstances: (1) before the resource's tonnage or threshold exemption is claimed; (2) after the tonnage or threshold exemption is claimed, but before other tax expenditures are claimed; and (3) after all tax expenditures are claimed. As shown, the next lowest effective tax rate after molybdenum ore was the tax on coal, and this rate was almost five times higher than the tax rate on molybdenum ore after all severance tax expenditures were applied.

We estimated the effective tax rates in EXHIBIT 4 by dividing the total of all taxpayers' estimated severance tax liabilities by their total estimated gross incomes for each of the resources subject to a severance tax in Colorado. Therefore, these tax rates represent the average rate to which any gross income earned from producing a given resource would have been subject rather than the average rate experienced per taxpayer. We estimated taxpayers' total severance tax liabilities and gross incomes for each resource as follows:

- For molybdenum ore, we used publicly available data on molybdenum ore production in Colorado and the average 2017 price of molybdenum reported by the U.S. Geological Survey.

- For metallic minerals, we used publicly available data on assessed property values in Colorado, which are determined based on production value for metal mines.

- For coal, we used taxpayers' severance tax returns and the average 2017 price of coal in Colorado from the U.S. Energy Information Administration.

- For oil and gas, we used tax return data provided by the Department of Revenue, data on oil and gas production from the Colorado Oil and Gas Conservation Commission, and industry publication data on the average 2017 prices of oil and gas in Colorado.

EXHIBIT 4. COMPARISON OF ESTIMATED EFFECTIVE SEVERANCE TAX RATES AS A PERCENTAGE OF TOTAL COLORADO GROSS INCOME OF NONRENEWABLE RESOURCES, TAX YEAR 2017

	Estimated Effective Severance Tax Rate as a Percentage of Gross Income		
Resource	Before Tonnage or Threshold Exemption Claimed	After Tonnage or Threshold Exemption Claimed	After All Tax Expenditures Claimed
Molybdenum ore	0.17%	0.13% [1]	0.13% [1]
Metallic minerals	2.25%	2.07%	1.04%
Coal	1.90%	1.08%	0.63%
Oil and gas[2]	4.88%	4.27% [3]	1.43%

SOURCE: Office of the State Auditor analysis of severance tax return data from the Department of Revenue and production and/or price data from the United States Geological Survey, the United States Energy Information Administration, the Colorado Division of Property Taxation, the Colorado Oil and Gas Conservation Commission, industry publications, and the molybdenum company's 2019 10-K.

[1]The effective tax rates for molybdenum after the Molybdenum Tonnage Exemption had been claimed and after all tax expenditures had been claimed are the same because the Molybdenum Tonnage Exemption is the only tax expenditure that applies to the molybdenum ore severance tax.

[2]These calculations do not account for the Oil and Gas Severance Tax Deduction for Transportation Costs or the Oil and Gas Severance Tax Deduction for Manufacturing and Processing Costs because these amounts are not included in the gross income amounts reported on the Oil and Gas Severance Tax Schedule.

[3]The oil and gas severance tax does not have a blanket tonnage or threshold exemption that applies to all taxpayers. However, the Oil and Gas Stripper Well Exemption allows for the exemption of gross income from oil or gas extracted from low-producing wells, so we consider it to be a threshold exemption for purposes of these calculations.

According to statute [Section 39-29-101(1), C.R.S.], Colorado's severance taxes are intended to recapture a portion of the value of nonrenewable natural resources extracted in the state, since that value is lost to the State forever when the resources are removed from the ground. Since the molybdenum ore severance tax may recapture a smaller portion of the resource's value than the General Assembly may have anticipated at the time the Molybdenum Tonnage Exemption was established, and since the severance taxes imposed on other resources in Colorado are higher, the General Assembly may want to review the Molybdenum Tonnage Exemption to ensure that it is providing a severance tax rate that is consistent with the General Assembly's policy goals.