

**STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION**

_____)
In the Matter of:)
)
)
PROPOSED AMENDMENT)
TO 20.6.2 NMAC (Copper Rule))
)
_____)

No. WQCC 12-01(R)

EXHIBIT BRACK – 8

**Mining
and
Minerals
Division**



Mining and Minerals Division

MISSION: The Mining and Minerals Division (MMD) seeks to promote the public trust by ensuring the responsible utilization, conservation, reclamation and safeguarding of land and resources affected by mining. MMD strives to make New Mexico a leader in responsible mine operation and reclamation.

PROGRAMS AND ACCOMPLISHMENTS

MINE REGISTRATION, REPORTING AND SAFEGUARDING PROGRAM: In these increasingly uncertain economic times, decision-makers throughout New Mexico benefit from the valuable information compiled and disseminated through this program. Comprehensive information is provided on mineral resources, mine registration, reclamation and safeguarding efforts, legislation, and other MMD activities related to New Mexico's mineral extraction industry and mineral resources.

As part of its safeguarding activities, MMD collaborates with state, federal and tribal agencies to survey, prioritize, and clean up abandoned uranium sites. The New Mexico Legacy Uranium Mine (LUM) Inventory Project ascertains the extent and magnitude of the occurrence of abandoned uranium mines in New Mexico, especially those mines that have not been addressed previously by a state, federal or tribal entity. MMD's Mine Registration Program is very proud of its efforts to locate and assess legacy uranium mines, conducting preliminary site assessment and field survey work at 55 mines, including those in the Grants Mineral Belt. In most cases these are small mines mentioned in historical literature; the biggest challenge was locating them. Each assessment included site mapping and identification of important features; photographic documentation of all aspects of the site; radiological survey; plant community description; general soil condition description; wildlife sighted or evidence of wildlife in the area; land use including current apparent land use; off-site impacts including any readily apparent potential or occurring off-site impacts; topographic features including roads and water courses; and any hydro-geologic data that exists about the site. This LUM Inventory Project was the most recent in a series of MMD efforts that began in the late 1980s when MMD's AML Program closed legacy uranium mines in the Grants Mineral Belt.

Public outreach is an important component of this program and the other MMD programs. Many times, concerned citizens or even mine operators may not be sure of what is required of a mining operation or what operations are active near them. To solve this, outreach to the public and mine operators has been expanded. More information is now available on MMD's webpages regarding abandoned mine safeguarding projects and current and proposed mining operations; it is now even possible to track projects by status or county and to download project documents. An electronic newsletter, "MMD Notes," is published to inform the public and industry about events involving MMD and mining activities in the state.

ABANDONED MINE LAND (AML) PROGRAM: Works to identify dangerous abandoned mine areas across the state and to abate their hazards. MMD estimates that more than 10,000 hazardous mine openings remain un-reclaimed throughout New Mexico.

The AML Program completed eight construction projects at abandoned mine sites in New Mexico, safeguarding 94 dangerous openings and reclaimed three coal mine waste piles at a total cost of \$1.6 million. Four of these projects benefitted hard rock sites, where 89 dangerous mine openings were safeguarded; of those, 41 features were structural closures. One project, using funds granted by the U.S. Forest Service to AML, stabilized an historic log cabin above a previously safeguarded shaft. Continuing AML's commitment to bat habitat preservation in underground abandoned mines, 34 of the closures at hard rock sites were bat-compatible. At the four coal projects, five openings were safeguarded and three gob (mine waste) piles totaling nine acres were reclaimed, including very steep gob slopes reclaimed in-place in Sugarite Canyon State Park.



Bat cupola constructed as part of the Cerrillos Hills Bonanza Creek Ranch project.

COAL MINE RECLAMATION PROGRAM: Is responsible for regulating coal mines on all federal, state and private lands within New Mexico, with the exception of Indian lands. The program oversees 86,000 acres of permitted mine lands and nearly \$300 million in financial assurance.

Program staff completed a two-year project to scan and save all its historic and current information as portable document files (PDFs) or Joint Photographic Experts Group files (JPEGs). By putting the files into these formats, the information is readily searchable. Old maps can be geo-referenced, and their data can be incorporated into geographic information system (GIS) maps. Program staff can access and provide information to the public on more than 40 years of coal mining activity in New Mexico in a matter of minutes.

MINING ACT RECLAMATION PROGRAM

(MARP): Oversees the reclamation of all exploration and extraction activities conducted at all mines and mills, excluding coal, potash and aggregate mines. MARP encompasses nearly 400 mining and exploration projects and over \$550 million in financial assurance.

One of MARP's mine operators was awarded The Excellence in Reclamation Award for work performed in 2010. As part of an ongoing program to, in part, support and recognize the advancement of mine reclamation science through studies or applying state-of-the-art, innovative reclamation techniques, the 16th Annual Excellence in Reclamation Award was presented to Larry Coons, P.E., for his reclamation work at the Velarde Mill mica mill site in Rio Arriba County. The reclamation occurred on the eastern half of the facility and included three ponds and the tailings stockpile. Mr. Coons received the award for outstanding and innovative reclamation techniques to develop stable, positive-draining landforms; and for outstanding construction in the safeguarding of an historic mining area.

From the early 1980s, the Velarde Mill processed mica ore from the US Hill Mine in the Sangre de Cristo Mountains within the Picuris Pueblo Grant; in 2005, activities commenced to close the site. MMD requirements were met, as well as those of New Mexico Environment Department's Ground Water Quality Bureau and the Office of the State Engineer, to successfully close the mill.



Photo by: Steve Lucero

Velarde Mill site, Rio Arriba County, in 2002 prior to reclamation.



Photo by: Larry Coons



Photo by: Joe Vinson

Reclamation grading work in progress at Velarde Mill site; and the resultant reclamation vegetation at Velarde Mill site in 2011.



Data and Statistics

MINERAL RESOURCES: EMPLOYMENT, PRODUCTION AND VALUE: UPDATED TO INCLUDE NEW COAL STATISTICS (APRIL 2012)

Nearly \$1.8 billion worth of minerals was extracted from New Mexico mines in 2010, a 1.3 percent increase from 2009 levels (Table 1 and Figure 1).

New Mexico Summary of Commodity Production, Production Value, Employment, Payroll, Revenue and Ranking - 2010									
Mineral	Production ¹	Production Rank ²	Production Value \$	Employment ³	Reclamation Employment	Payroll \$ ⁴	Revenue Generated \$ ⁵		
							State	Federal	
Coal	21,836,926	13	\$ 667,325,057	1,583	326	\$ 96,636,653	\$ 30,693,943	\$ 3,423,839	
Copper	116,822,927	4	\$ 400,190,809	1,067	91	\$ 38,545,794	\$ 3,299,061	\$ -	
Gold	-	-	\$ -	0	0	\$ -	\$ 11,195	\$ -	
Industrial Minerals ⁶	2,343,734	-	\$ 110,718,970	484	13	\$ 16,571,353	\$ 876,766	\$ 96,795	
Aggregates ⁷	10,752,950	-	\$ 81,697,488	911	109	\$ 16,950,264	\$ 1,884,479	\$ -	
Other Metals	21,177	-	\$ 337,560	21	4	\$ 1,049,663	\$ -	\$ -	
Molybdenum	529,151	-	\$ 7,540,402	208	8	\$ 11,643,000	\$ -	\$ -	
Potash ⁸	812,756	1	\$ 512,426,376	1,327	29	\$ 86,469,252	\$ 4,435,814	\$ 9,865,237	
Silver ⁹	-	-	\$ -	0	0	\$ -	\$ 14,691	\$ -	
Uranium ¹⁰	-	-	\$ -	57	47	\$ 3,498,775	\$ 75,563	\$ -	
TOTAL			\$ 1,780,236,662	5,658	627	\$ 271,364,754	\$ 41,291,512	\$13,385,871	

Source: Mining and Minerals Division, unless otherwise noted.

¹ Production is in short tons for coal, industrial minerals, aggregates, other metals and potash; copper and molybdenum in pounds.

² Production rank is based on 2010 production value in relation to other U.S. states. Molybdenum ranking unavailable.

Sources: *Metals, potash, industrial minerals and aggregates: Mineral Resources Program, United States Geological Survey (minerals.er.usgs.gov)*
Coal: Energy Information Administration, United States Department of Energy (www.eia.doe.gov)

³ Employment category includes direct and contract employees.

⁴ Payroll is for direct employees and does not include contract employees. Payroll does not include benefits.

⁵ State revenue includes state trust land mineral lease royalties, rentals and bonuses; and severance, resource excise and conservation tax revenues. Federal revenue includes 50% state share of federal royalties.

Sources: *State data: New Mexico Taxation and Revenue Department (www.state.nm.us/tax), New Mexico State Land Office (www.nmstatelands.org)*
Federal data: Bureau of Ocean Energy Management, Regulation and Enforcement (www.boemre.gov)

⁶ Category includes brick clay, calcite, dimension stone, gypsum, humate, perlite, Portland cement, pumice, salt, silica, and zeolite.

⁷ Category includes base course, caliche, clay and shale, crushed rock, flagstone, fill dirt, gravel, limestone, red dog, rip-rap, sand, scoria and topsoil.

⁸ Potash production is K₂O mill production.

⁹ No silver, gold or molybdenum co-production was reported for calendar year 2010.

¹⁰ Employment/payroll numbers are for licensing/permitting at proposed uranium mines, and reclamation activities/maintenance at closed mines and mills.

Table 1

New Mexico remains a leading United States mineral producer with 2010 rankings of first in potash, perlite and zeolite; fourth in copper; and thirteenth in coal, as reported by the U.S. Geological Survey (USGS) and the U.S. Energy Information Administration. The principal minerals, in descending order of 2010 production value, were coal, potash, and copper. According to USGS, New Mexico ranked twentieth in 2010 when ranking states by the production value of non-energy minerals, producing 1.6 percent of the production value of total U.S. non-energy minerals.

Coal claimed the top spots for production value and payroll in 2010; also, the coal industry generated the greatest revenue for the state (Table 1 and Figure 2). Total 2010 revenues (state and federal) generated by mineral production in New Mexico declined 23 percent to \$54.7 million from 2009's all-time high of \$70.9 million (Figure 1).

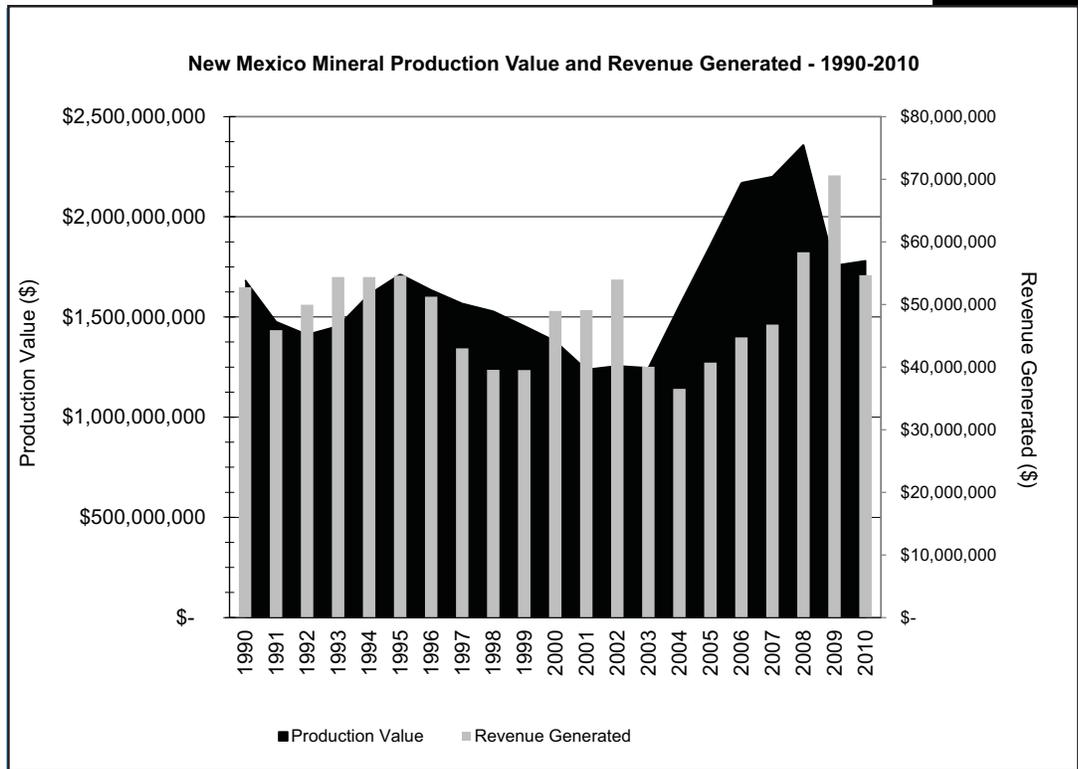


Figure 1

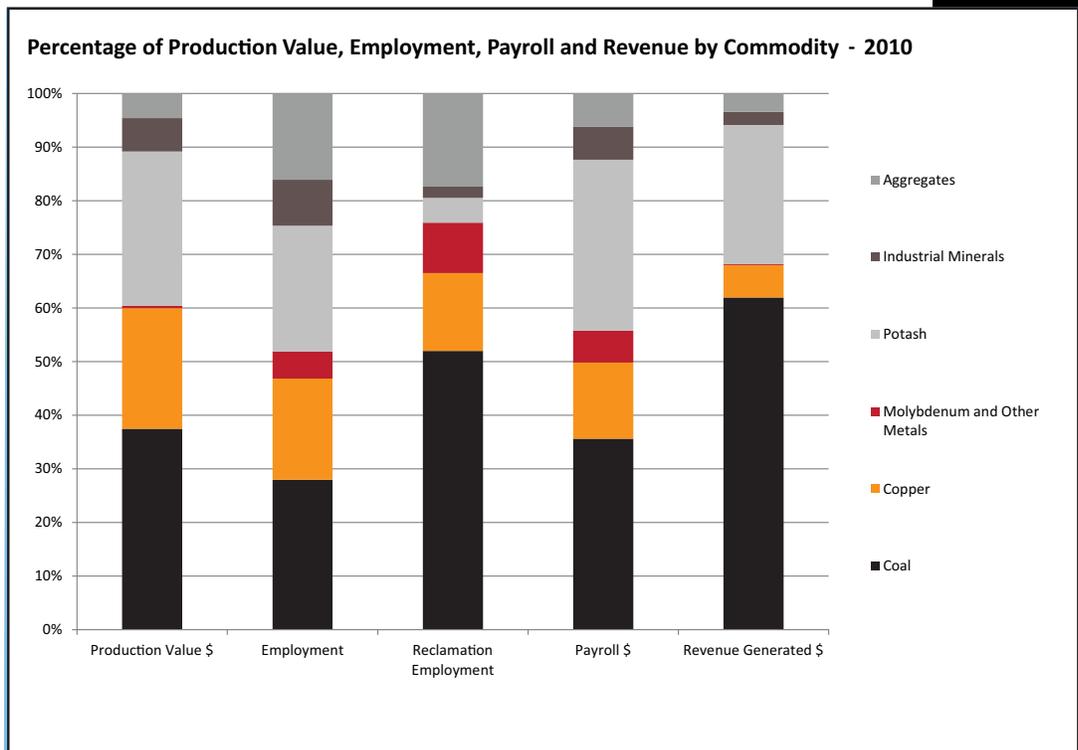


Figure 2

Total mining sector employment increased while payroll amounts slightly decreased in 2010. The total number of direct and contract employees in the mining industry in 2010 was 5,658, a nearly 10 percent increase from 2009. Industry payroll exceeded \$271 million, down 5.5 percent from 2009 (Figure 3). Direct employment increased six percent to 4,742 employees; contract employment increased 33 percent to 916 workers; and reclamation employment increased 59 percent to 627 workers (Figure 4). Coal was the largest employer in New Mexico's mining industry, followed by potash and copper.

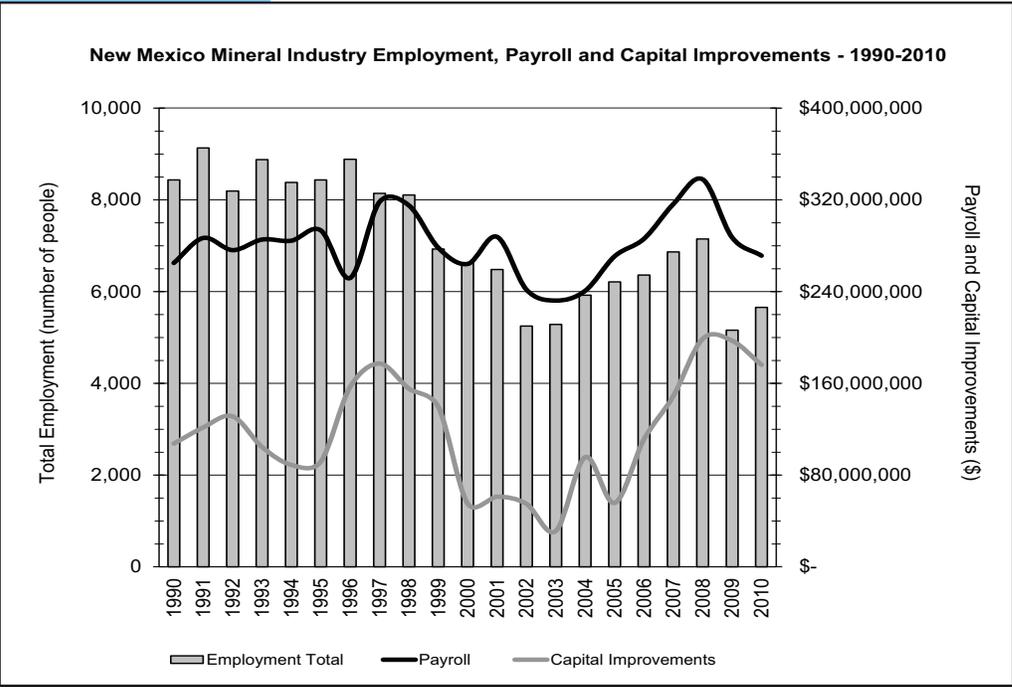


Figure 3

Capital improvement expenditures declined 11 percent from 2009 to 2010. New Mexico mining companies invested \$176.2 million in capital improvements and equipment in 2010, down from \$197.2 million in 2009 (Figure 3).

There were 217 registered active mining operations in New Mexico in 2010. These operations included five coal mines; three potash mines, five potash refineries and one potash compaction plant; one molybdenum mine and one molybdenum mill; two copper mines and two solvent extraction/electro-winning (SX/EW) plants; 25 industrial mineral mines and 13 industrial mineral mills; and 159 stone and aggregate operations (Figure 5).

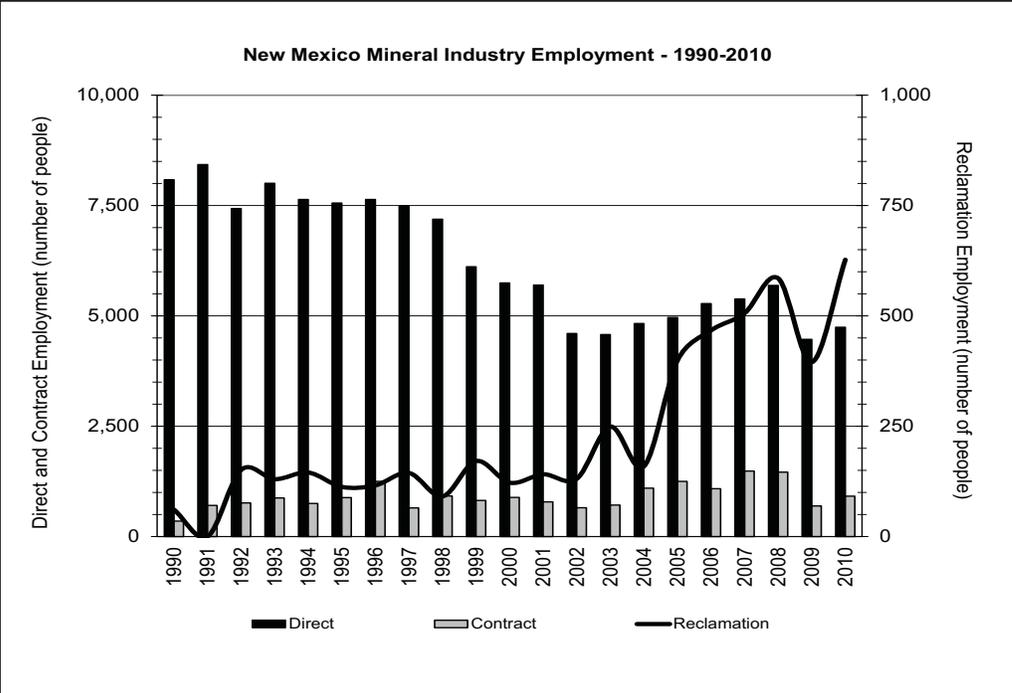
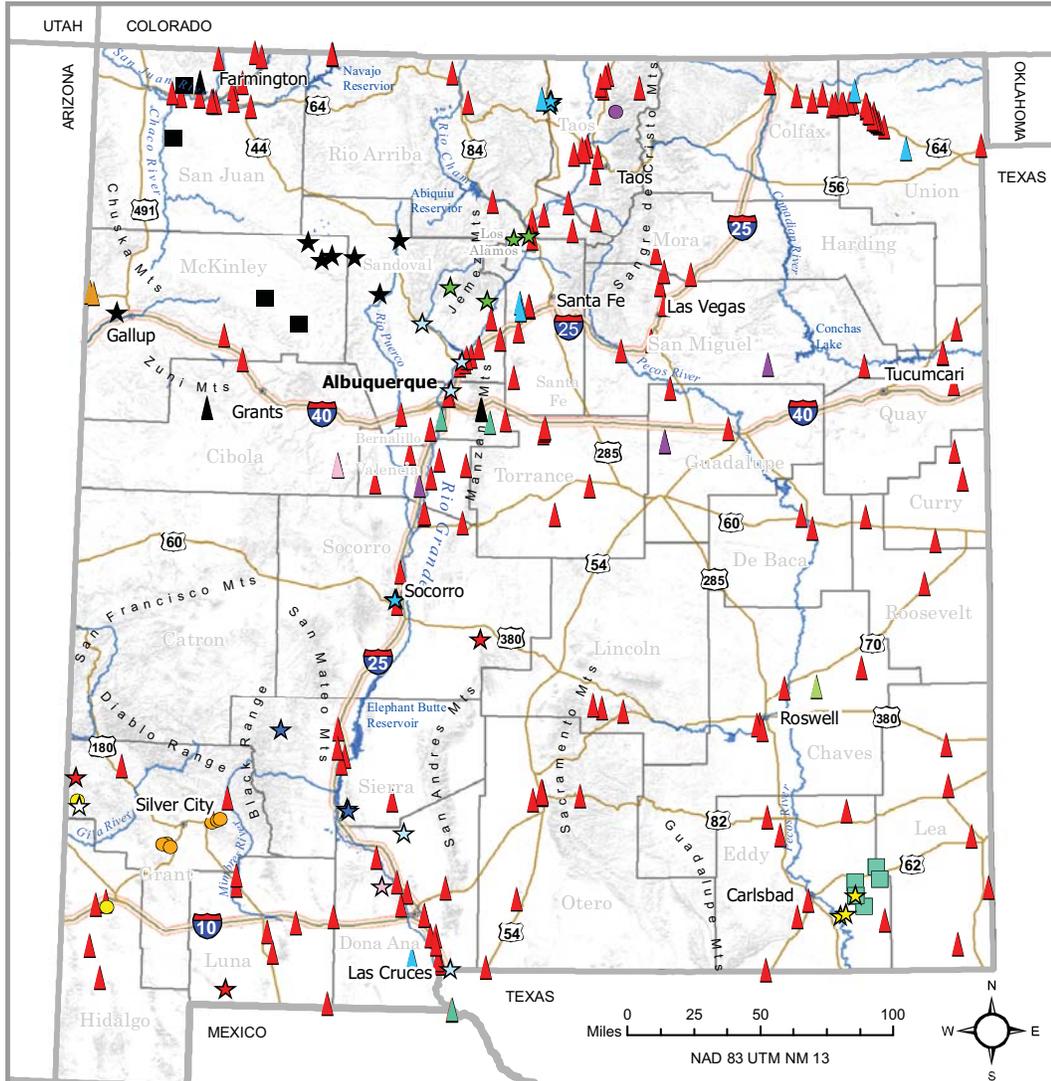


Figure 4

Figures 6 through 9 provide graphic representation of 20-year production amounts and dollar values for coal, copper, potash, and aggregate (flagstone, construction sand and gravel, crushed rock, and scoria), respectively.

Active Mines in New Mexico in 2010



Metals					Industrial Minerals					Aggregate & Stone				
■	■	●	●	●	☆	☆	☆	☆	☆	▲	▲	▲	▲	▲
Coal	Potash	Copper	Gold	Molybdenum	Calcite	Gemstone	Gypsum	Humate	Perlite	Aggregate	Calciche	Clay & Shale	Dimension & Flagstone	Limestone
					Salt	Zeolites				Red Dog	Scoria	Travertine		

Data: Oct 2011 database query, Mining & Minerals Division
 Map: Linda S. DeLay, GISP

Figure 5

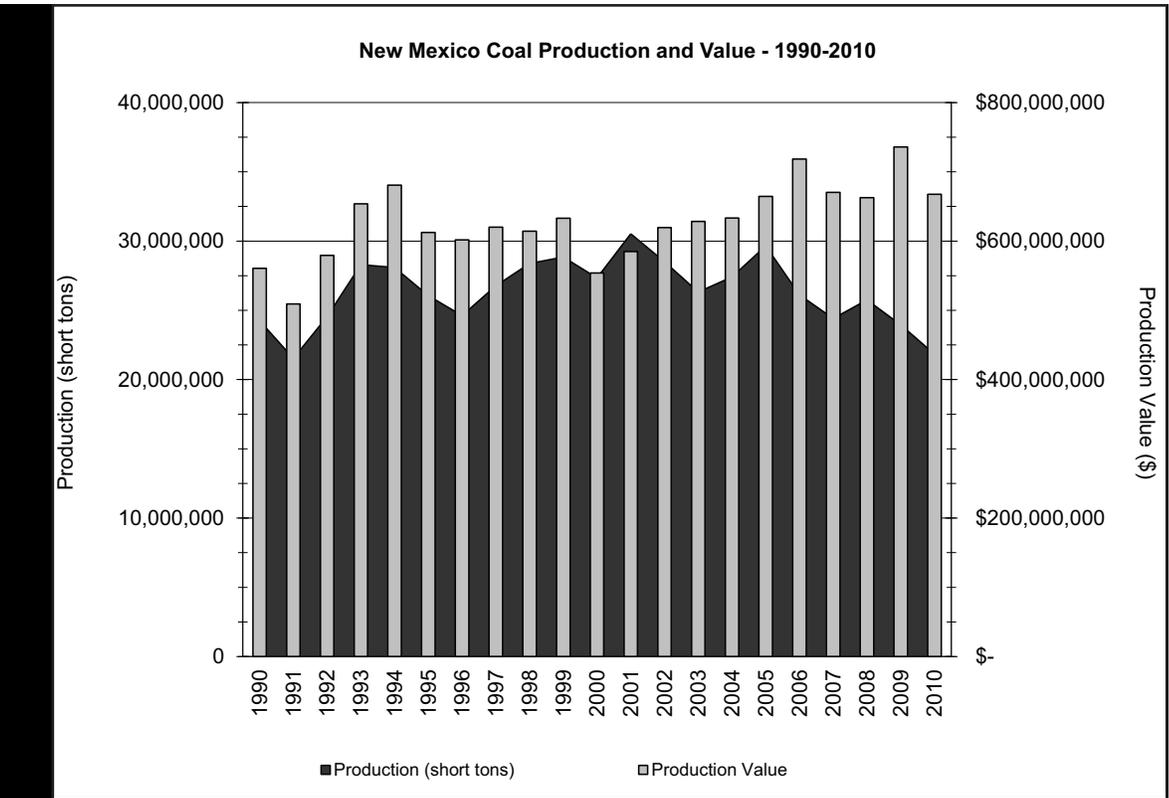


Figure 6

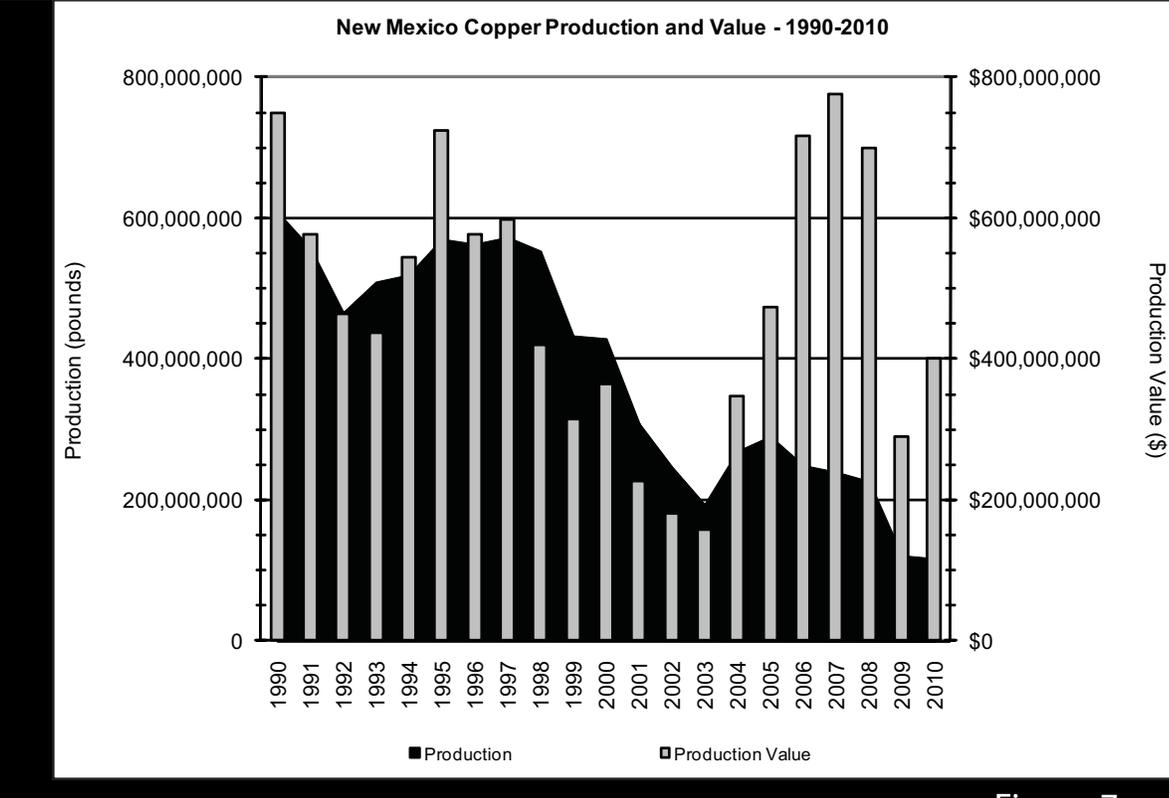


Figure 7

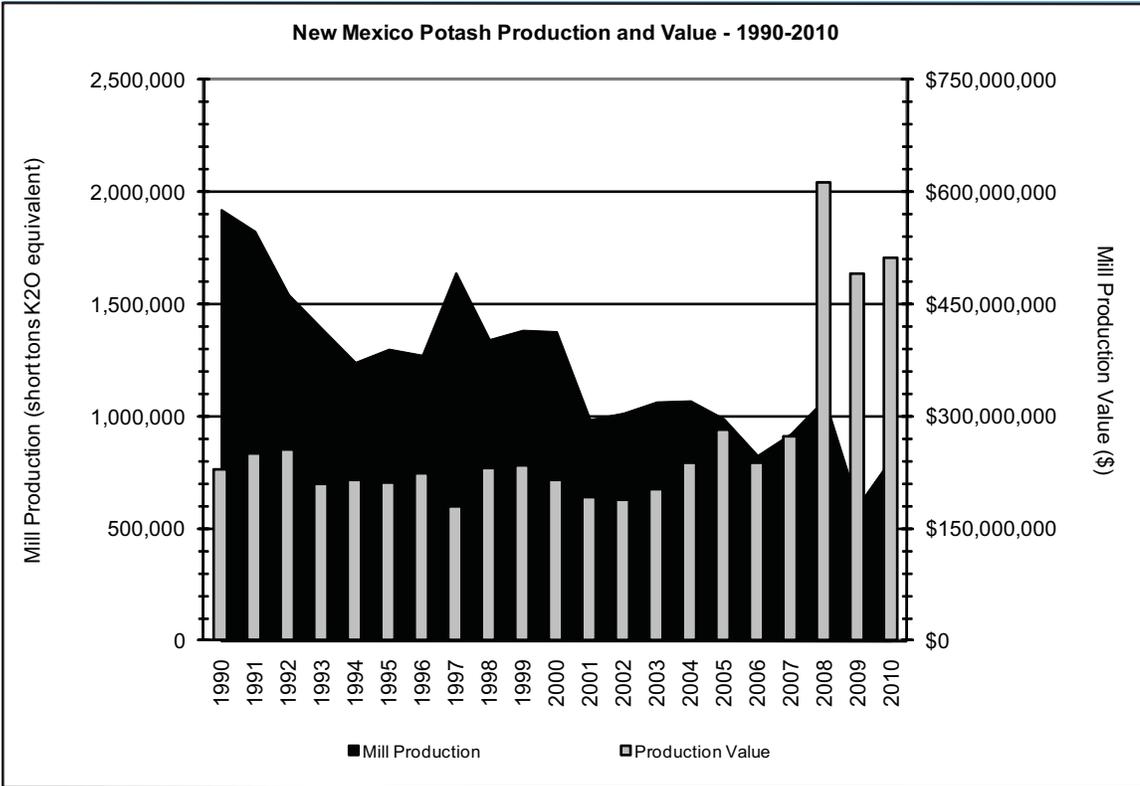


Figure 8

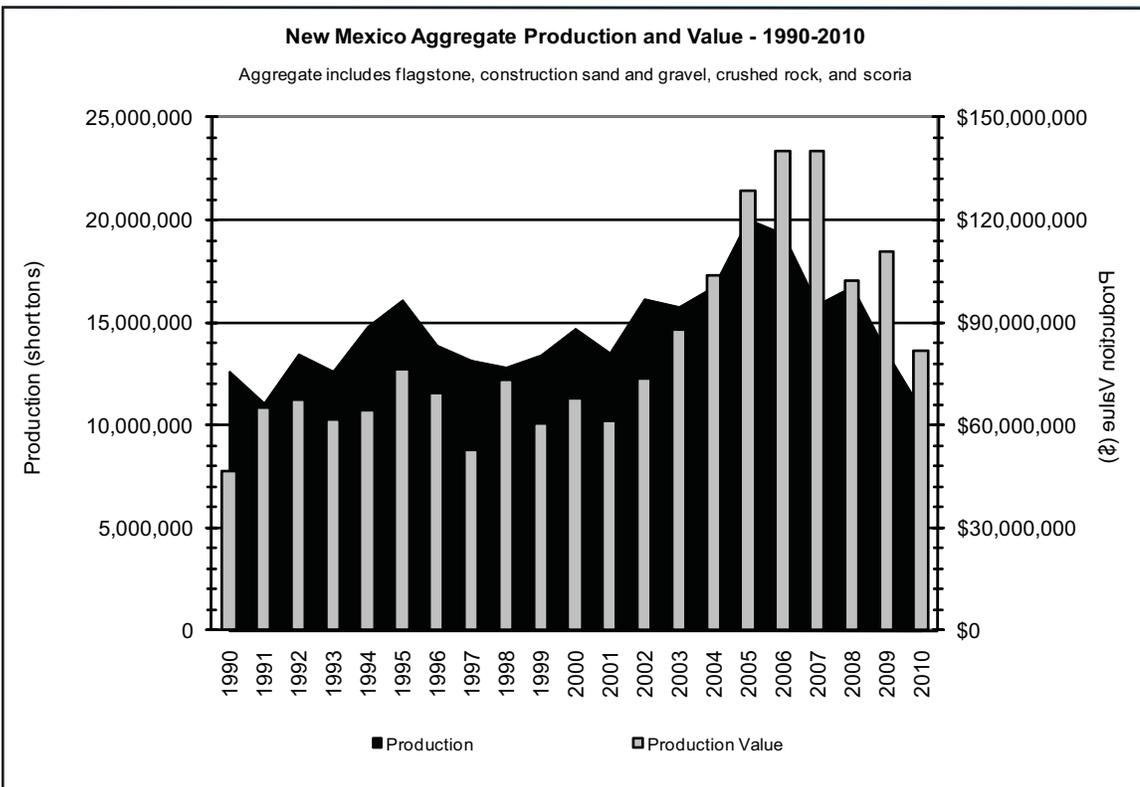


Figure 9

