

## Nevada Mining Activity

Lucia M. Patterson, Nevada Division of Minerals

### Introduction

We use minerals every day of our lives whether we realize it or not. Minerals must be mined!!! When a mineral is mined and sold it becomes a commodity. Mining is very important to Nevada's economy. There is wide variety of minerals mined in Nevada produces that are purchased and utilized for numerous applications.

### Objective

To inform the student of the role mining and the variety of commodities produced in the state of Nevada and educate them on mineral uses in their everyday lives.

### Definitions

Commodity: A marketable item produced to satisfy wants or needs.

Mineral: A solid inorganic substance of natural occurrence.

Mining: The extraction of valuable minerals or other geological materials from the earth usually from an orebody, lode, vein, seam, reef or placer deposits.

### Materials

Mine Labels

Mine Activity Map

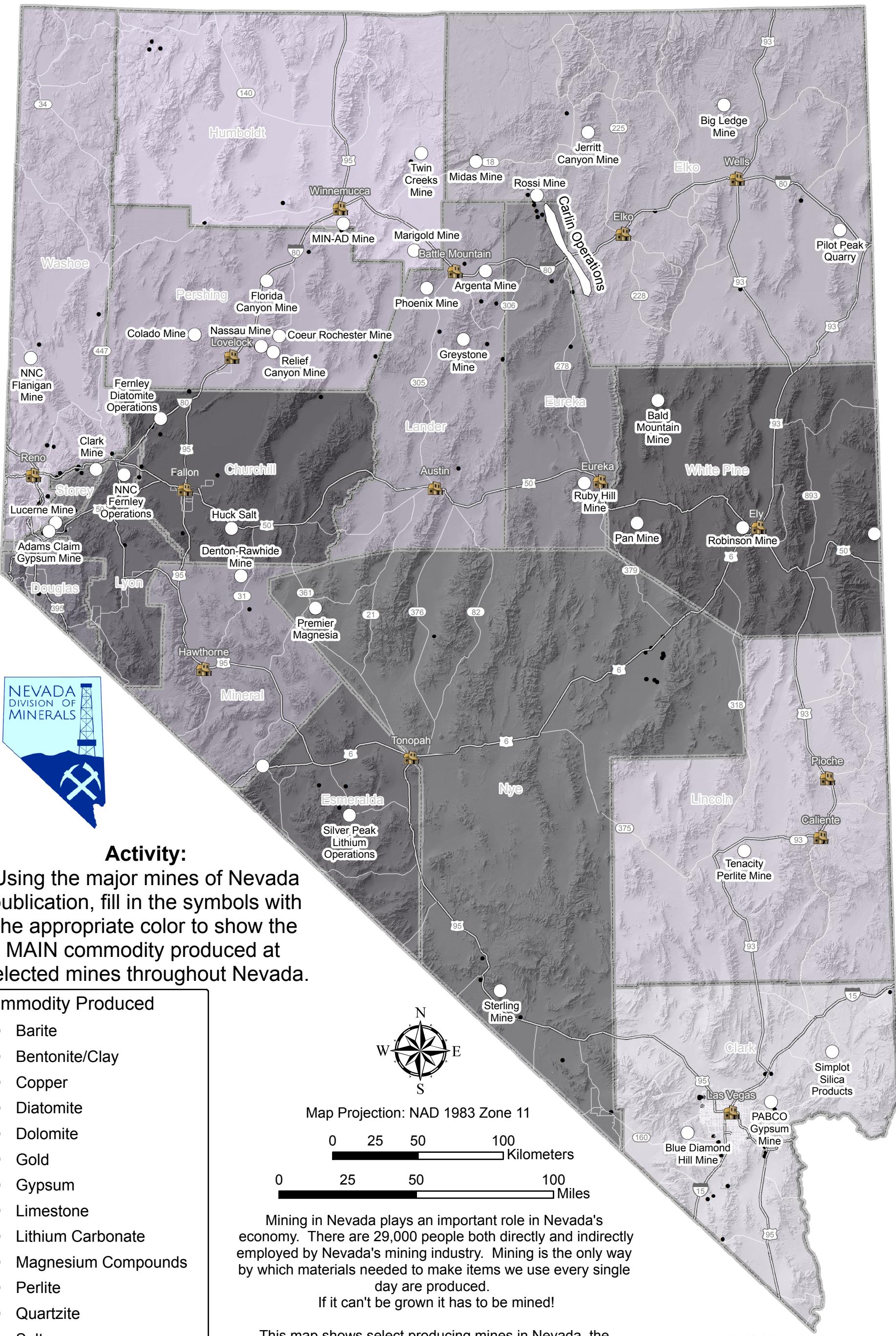
Current Major Mines of Nevada Booklet

Minerals Education Sheets (Put samples on sheet if you have them!)

### Procedure

1. Pass out a mine label to each student starting with number 1 (The labels are numbered to ensure the variety of commodities produced in Nevada are included in the activity).
2. Have the student look up the mine they have been assigned in the Major Mines booklet and write down the information requested on the mine label.
3. For the commodity use have the students look at the Minerals Education Sheets and Pick one commodity use.
4. Have the students symbolize each mine on the map according to the commodity it produces the most of.
5. Go around the classroom and have each student present the information they gathered on their mine.

# Mining in Nevada



1

Mine Name: Huck Salt

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

2

Mine Name: Blue Diamond Hill Mine

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

3

Mine Name: Jerritt Canyon

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

4

Mine Name: Silver Peak Lithium Operations

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

5

Mine Name: Carlin Operations

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

6

Mine Name: MIN-AD Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

7

Mine Name: Argenta Mine

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

8

Mine Name: Pheonix Mine

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

9

Mine Name: Tenacity Perlite Mine

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

10

Mine Name: NCC Fernley Operations

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

11

Mine Name: Premier Magnesia

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

12

Mine Name: Colado Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

13

Mine Name: **Clark Mine**

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

14

Mine Name: **NCC Flanigan**

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

15

Mine Name: **Robinson Mine**

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

16

Mine Name: Nassau Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

17

Mine Name: Mt. Morhiah Quarry

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

18

Mine Name: Big Ledge Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

19

Mine Name:	<b>Ruby Hill Mine</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

20

Mine Name:	<b>Sterling Mine</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

21

Mine Name:	<b>Adams Claim Gypsum Mine</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

22

Mine Name: Simplot Silica Products

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

23

Mine Name: Pilot Peak Quarry

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

24

Mine Name: Greystone Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

25

Mine Name: **PABCO Gypsum Mine**

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

26

Mine Name: **Bald Mountain Mine**

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

27

Mine Name: **Basalt Mine**

Number of Employees:

Production:

Commodity Use:

How do you use this Mineral?

28

Mine Name:	<b>Coeur Rochester Mine</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

29

Mine Name:	<b>Florida Canyon Mine</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

30

Mine Name:	<b>Twin Creeks Mine</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

31

Mine Name:	<b>Fernley Diatomite Operations</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

32

Mine Name:	<b>Denton-Rawhide Mine</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

33

Mine Name:	<b>Hollister Mine</b>
Number of Employees:	
Production:	
Commodity Use:	
How do you use this Mineral?	

34

Mine Name: Marigold Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

35

Mine Name: Relief Canyon Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

36

Mine Name: Lucerne Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

37

Mine Name: Midas Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

\_\_\_\_\_

Commodity Use: \_\_\_\_\_

How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

38

Mine Name: Pan Mine

Number of Employees: \_\_\_\_\_

Production: \_\_\_\_\_

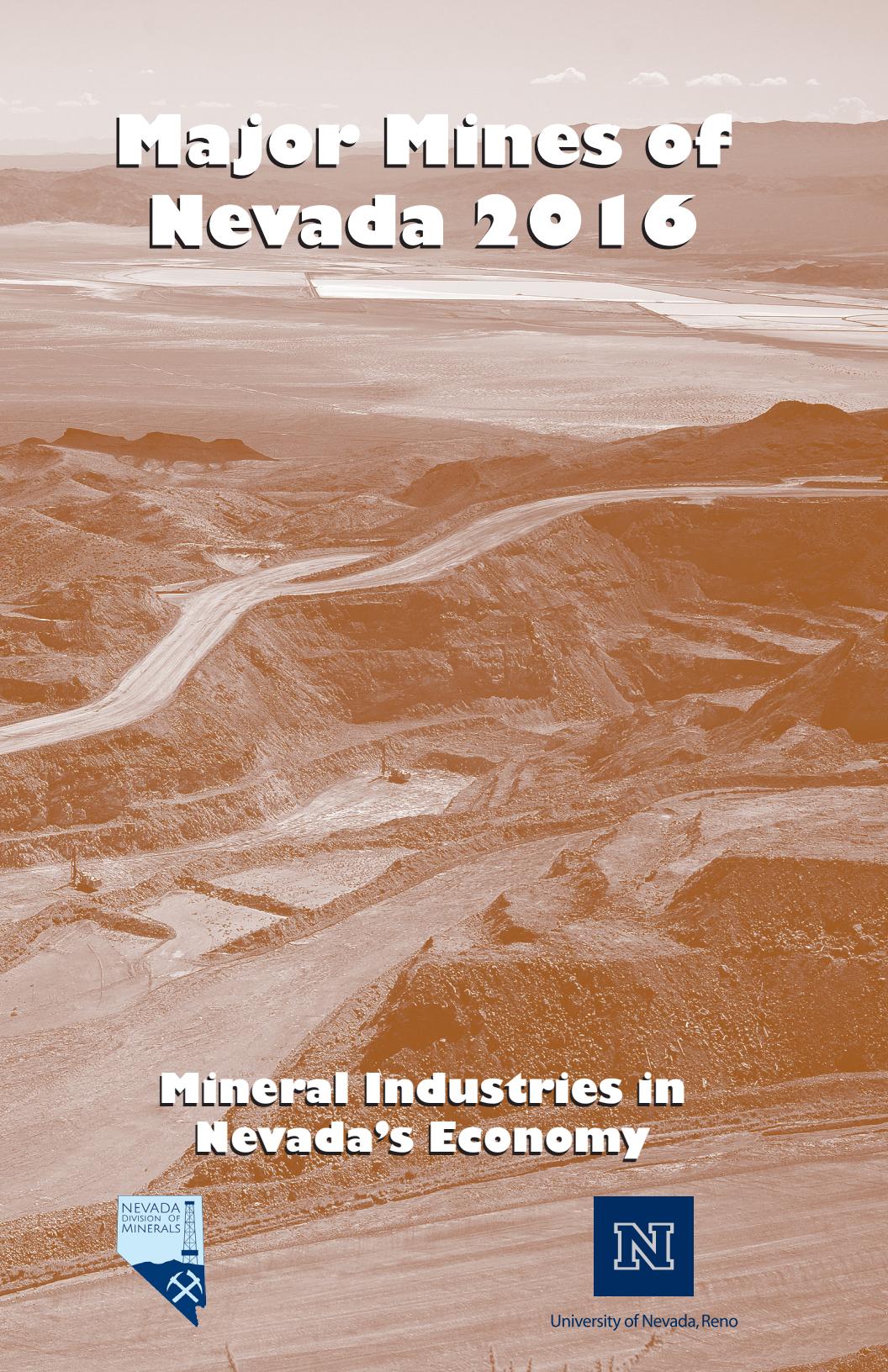
\_\_\_\_\_

Commodity Use: \_\_\_\_\_

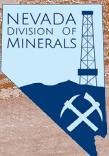
How do you use this Mineral? \_\_\_\_\_

\_\_\_\_\_

# Major Mines of Nevada 2016

A large, open-pit mine is shown from an aerial perspective. The mine is a deep, irregularly shaped excavation with numerous terraced levels. A long, winding road cuts through the center of the pit. Several industrial buildings and structures are visible at the top and along the edges of the mine. The surrounding terrain is arid and hilly, with some sparse vegetation and distant mountains in the background. The sky is clear with a few small clouds.

## Mineral Industries in Nevada's Economy



University of Nevada, Reno

# NEVADA COMMISSION ON MINERAL RESOURCES

## Division of Minerals

The seven-member Commission on Mineral Resources is a public body appointed by the Governor that provides advice and recommendations to the Governor and Legislature on matters relating to mineral resources. The Division's mission is to encourage and assist in the responsible exploration for, and the production of, minerals, oil, gas, and geothermal energy which are economically beneficial to the State.

The Division is involved in activities relating to mineral, oil, gas, and geothermal development. Staff compiles annual data on all active mines in Nevada and maintains the State's mine registry. Information concerning mining operations and production is made available to the public through this yearly publication. Educational documents and materials concerning the minerals industry are also produced. The Division often acts as a cooperating agency in federal land use actions at the request of the Governor's office.

The Division is the fluid minerals permitting agency for drilling activities on both public and private lands in Nevada. Staff also monitors production of oil, gas, and geothermal resources to ensure proper management and conservation. Nevada is a member of the Interstate Oil and Gas Compact Commission.

The Division's abandoned mine lands program provides for public safety by identifying and ranking dangerous conditions at mines that are no longer operating, and by securing dangerous orphaned mine openings. The program continually urges the public to recognize and avoid hazardous abandoned mines.

### Commission on Mineral Resources

Richard DeLong, Chairman (Large-Scale Mining)  
Dennis Bryan, Vice-Chairman (Small-Scale Mining and Prospecting)  
Nigel Bain (Large-Scale Mining)  
Arthur Henderson (Oil and Gas)  
Mary Korpi, (Public at Large)  
David Parker (Exploration and Development)  
John H. Snow (Geothermal Resources)

### Division of Minerals Staff

Rich Perry - Administrator, Division of Minerals  
Aubrey Bonde - Field Specialist, Las Vegas Office  
Robert Ghiglieri - Chief, Abandoned Mine Lands Program  
Valerie Kneefel - Administrative Assistant IV, Carson City Office  
Lucia Patterson - GIS/Field Specialist  
Lowell Price - Program Manager, Oil, Gas, and Geothermal  
Deborah Selig - Administrative Assistant IV, Las Vegas Office  
Mike Visher - Deputy Administrator  
Garrett Wake - Chief, Southern Nevada Operations  
Linda Wells - Program Officer II

Cover photo: Mineral Ridge Gold's Mineral Ridge mine (foreground) and Rockwood Lithium's Silver Peak lithium brine operations (background, upper right), Esmeralda County (*Mike Visher photo*).

Nevada Bureau of Mines and Geology

SPECIAL PUBLICATION P-28

# **Major Mines of Nevada 2016**

## Mineral Industries in Nevada's Economy

By Rich Perry and Mike Visher

The Nevada Division of Minerals

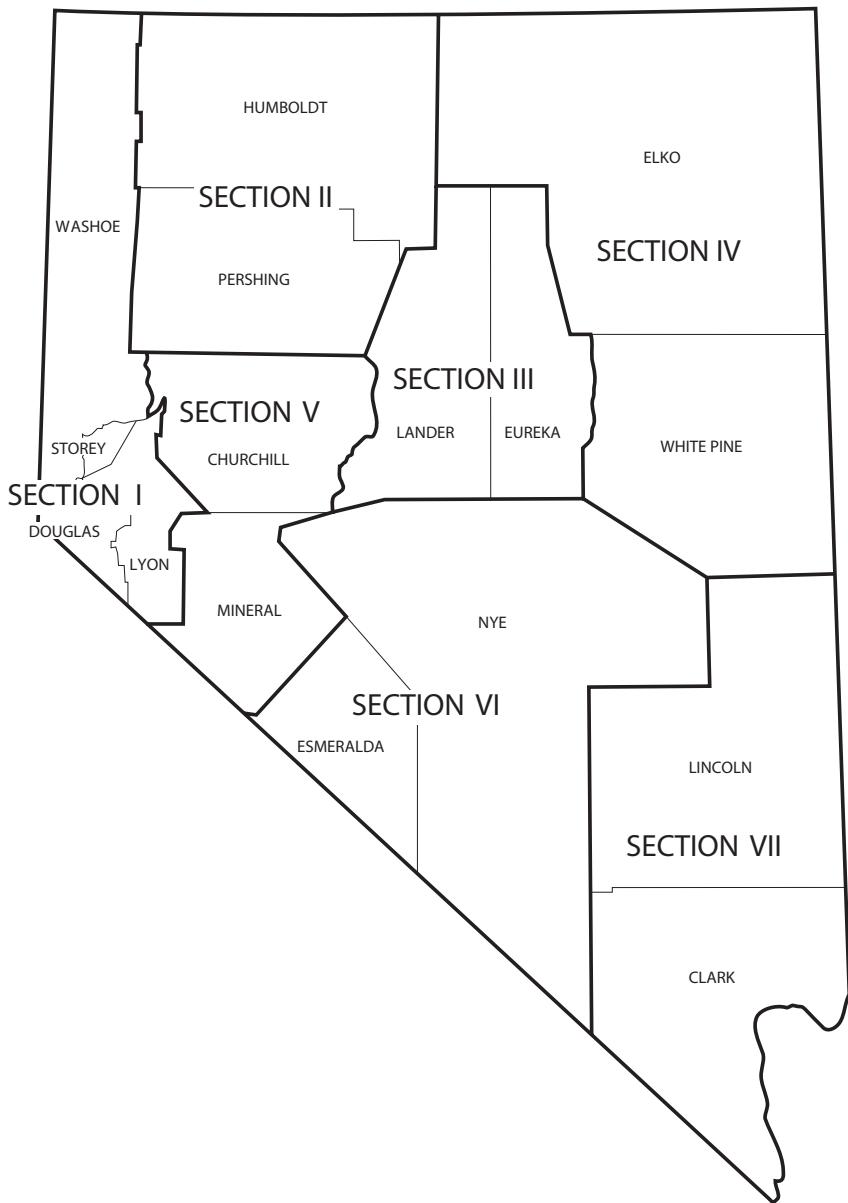
# 2017

This is the twenty-eighth of an annual series of summary reports on major mines of Nevada. Sand and gravel operations are not included. Information on employment and production for the calendar year 2016 was provided by the individual mine operators. The Nevada Division of Minerals maintains a complete register of Nevada mines. For further information, contact them at 400 W. King, Suite 106, Carson City, Nevada 89703 or call (775) 684-7040, fax (775) 684-7052, or visit their Web site at <http://minerals.nv.gov>.

College of Science  
Mackay School of Earth Sciences and Engineering



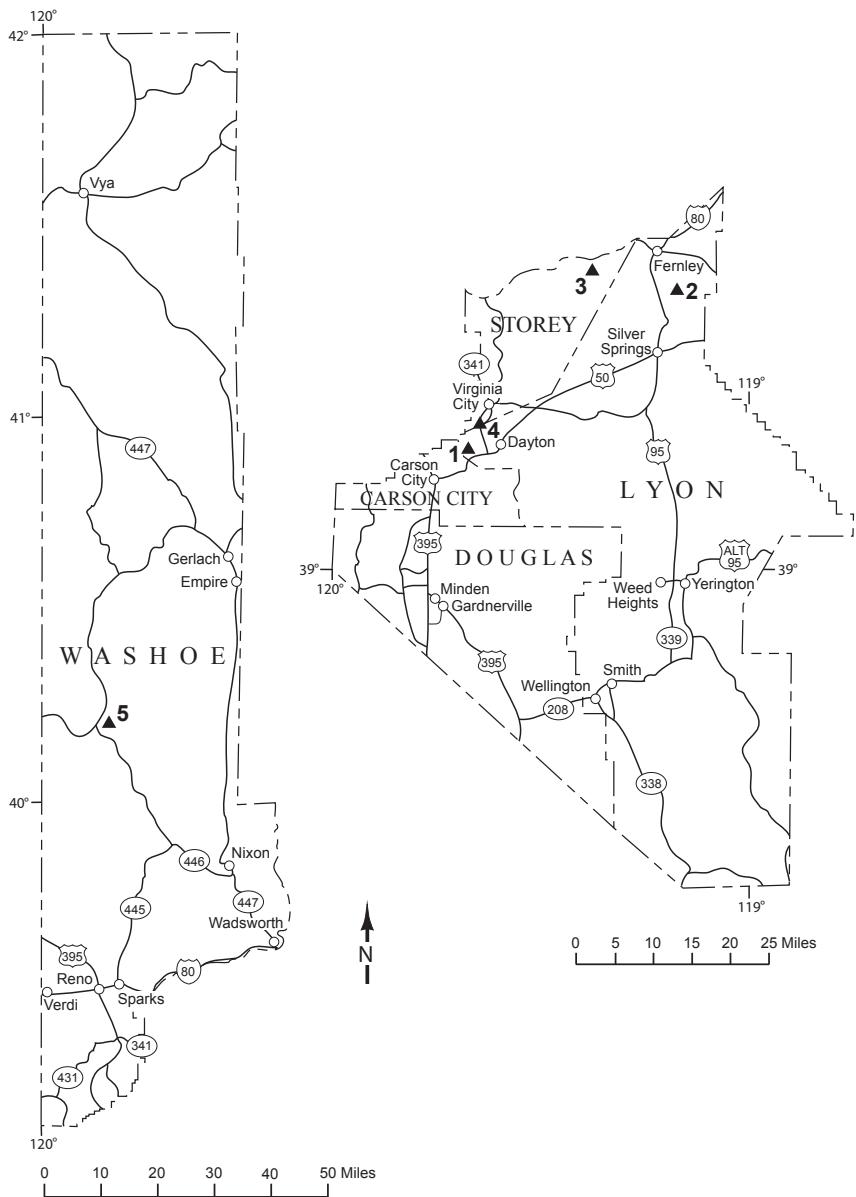
University of Nevada, Reno



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# Section I

## Lyon County

### **Adams Claim Gypsum Mine (1)**

Operator:

Art Wilson Co.  
P.O. Box 20160  
Carson City, NV 89721  
775-882-0700 Fax: 882-0790  
Company employees: 48

Production:

Gypsum - 416,898 tons  
Limestone - 10,068 tons

### **NCC Fernley Operations (2)**

Operator:

Nevada Cement Co.  
P.O. Box 840  
Fernley, NV 89408  
775-575-2281 Fax: 575-4387  
Company employees: 117

Production:

Limestone - 104,999 tons

## Storey County

### **Clark Mine (3)**

Operator:

EP Minerals, LLC  
640 Clark Station Rd.  
Sparks, NV 89434  
775-824-7700 Fax: 824-7715  
Company employees: 4

Production:

Diatomite - 62,972 tons

### **Lucerne Mine (4)**

Operator:

Comstock Mining, Inc.  
P.O. Box 1118  
Virginia City, NV 89440  
775-847-5272 Fax: 847-4762  
Company employees: 25  
Contract employees: 2

Production:

Gold - 4,086 oz  
Silver - 75,657 oz

## Washoe County

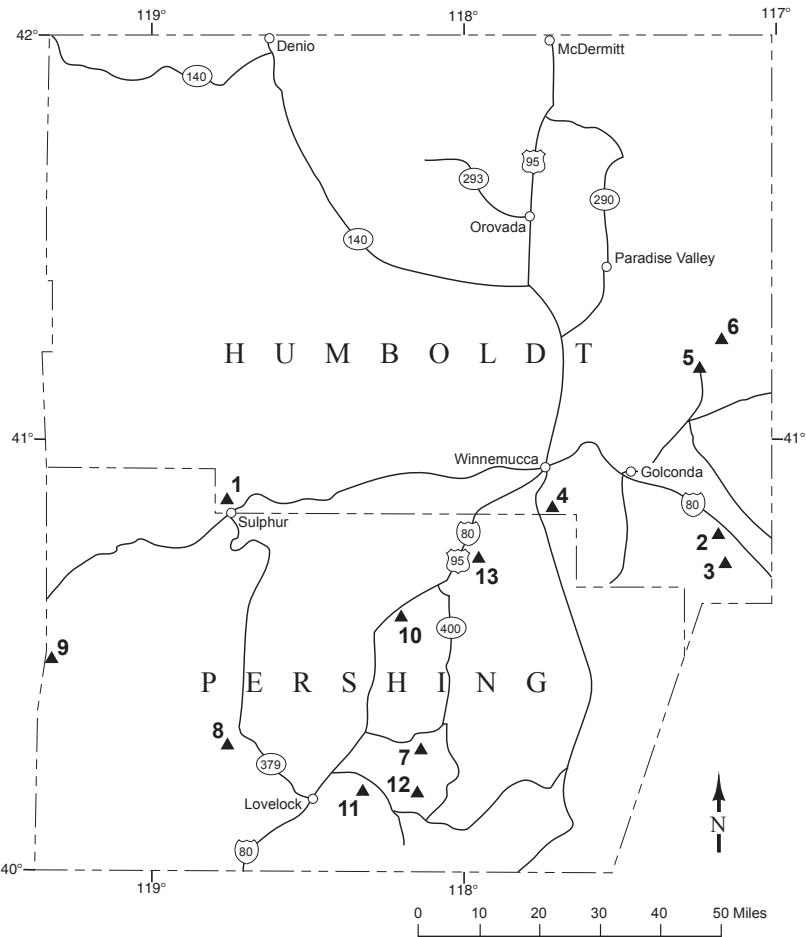
### **NCC Flanigan Mine (5)**

Operator:

Nevada Cement Co.  
P.O. Box 840  
Fernley, NV 89408  
775-575-2281 Fax: 575-4387

Production:

Specialty clays - 25,391 tons



## Section II

### Humboldt County

#### **Hycroft Mine (1)**

Operator:

Hycroft Mining Company  
P.O. Box 3030  
Winnemucca, NV 89446  
775-623-5260 Fax:623-0215  
Company employees: 66  
Contract employees: 21

Production:

Gold - 32,265 oz  
Silver - 235,934 oz

#### **Lone Tree Complex (2)**

Operator:

Newmont Mining Corp.  
1655 Mountain City Highway  
Elko, NV 89801  
775-778-4000

Company employees: 67  
Contract employees: 48

Production:

Gold - 31,884 oz

**Marigold Mine (3)**

Operator:

Silver Standard Resources, Inc.  
P.O. Box 160  
Valmy, NV 89438  
775-635-2317 Fax: 635-2551  
Company employees: 378  
Contract employees: 7

Production:

Gold - 205,116 oz  
Silver - 2,349 oz

**MIN-AD Mine (4)**

Operator:

MIN-AD, Inc.  
P.O. Box 39  
Winnemucca, NV 89446  
775-623-5944 Fax: 623-9028  
Company employees: 15

Production:

Dolomite - 44,452 tons (shipped)

**Turquoise Ridge Joint Venture (5)**

Operator:

Barrick Gold Corporation  
2055 Getchell Mine Road  
Golconda, NV 89414  
775-529-5001 Fax: 748-3125  
Company employees: 529  
Contract employees: 89

Production:

Gold - 354,560 oz

**Twin Creeks Mine (6)**

Operator:

Newmont Mining Corp.  
1655 Mountain City Highway  
Elko, NV 89801  
775-778-4000 Fax: 778-4360  
Company employees: 490  
Contract employees: 241

Production:

Gold - 367,528 oz  
Silver - 227,814 oz

## **Pershing County**

### **Coeur Rochester Mine (7)**

#### Operator:

Coeur Rochester, Inc.  
P.O. Box 1057  
Lovelock, NV 89419  
775-273-7995 Fax: 273-7423  
Company employees: 302  
Contract employees: 14

#### Production:

Gold - 50,750 oz  
Silver - 4,564,139 oz

### **Colado Mine (8)**

#### Operator:

EP Minerals, LLC  
P.O. Box 959  
Lovelock, NV 89419  
775-824-7591 Fax: 824-7595  
Company employees: 35

#### Production:

Diatomite - 194,974 tons

### **Empire Gypsum Mine (9)**

#### Operator:

Empire Mining Co., LLC  
P.O. Box 157  
Gerlach, NV 89412  
775-600-9886 Fax: 702-921-9552  
Company employees: 50  
Contract employees: 2

#### Production:

Gypsum - 95,722 tons

### **Florida Canyon Mine (10)**

#### Operator:

Rye Patch Mining U.S.  
P.O. Box 330  
Imlay, NV 89418  
775-538-7300  
Company employees: 126  
Contract employees: 30

#### Production:

Gold - 10,873 oz  
Silver - 21,898 oz

### **Nassau Mine (11)**

#### Operator:

American Colloid Company  
P.O. Box 428  
Lovell, WY 82431  
307-548-6521 Fax: 548-6449  
Company employees: 5

#### Production:

Bentonite - 4,486 tons

### **Relief Canyon Limestone Mine (12)**

#### Operator:

Nevada Cement Company  
P.O. Box 840  
Fernley, NV 89408  
775-575-2281 Fax: 575-4387  
Company employees: 6

#### Production:

Limestone - 60,164 tons

### **Sunrise Placer Mine (13)**

#### Operator:

Sunrise Minerals, LLC  
9405 Betty Lane  
Winnemucca, NV 89445  
775-340-7044 Fax: 623-5043  
Company employees: 5

#### Production:

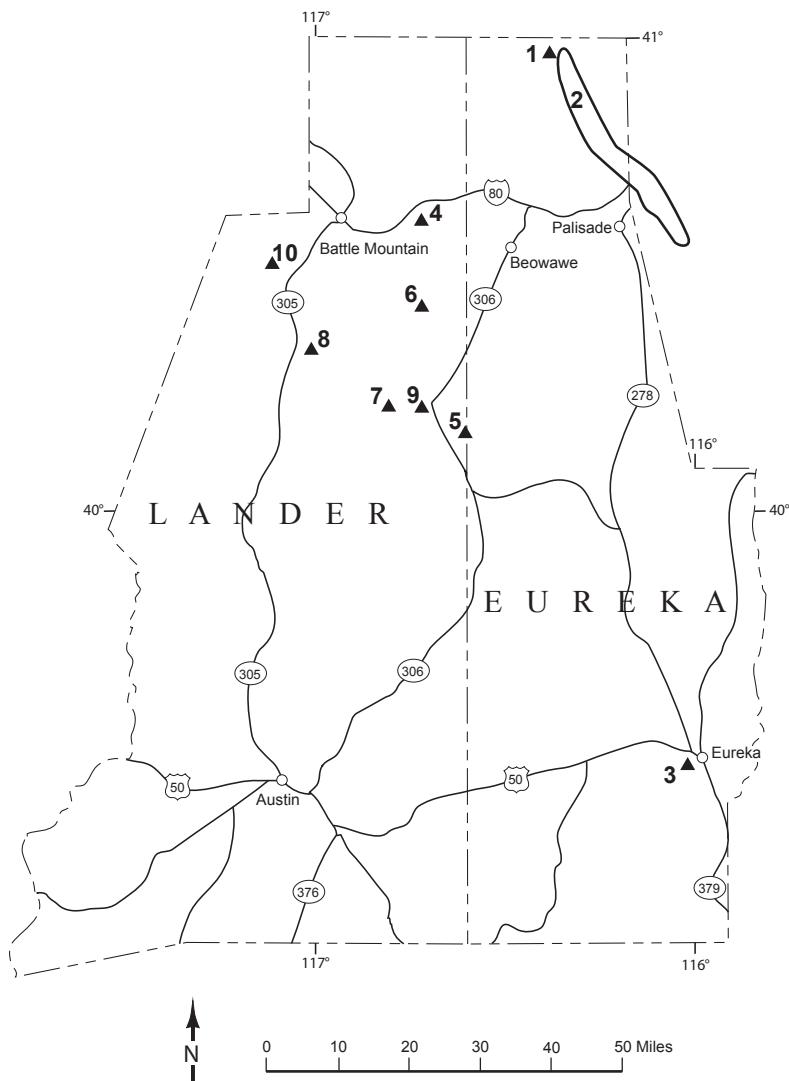
Gold - 668 oz  
Silver - 121 oz



**Basalite's Naturalite aggregate quarry, Lyon County**  
(Mike Visher photo).



**Silver Standard's Marigold Mine, Humboldt County**  
(Courtney Brailo photo).



## Section III

### Eureka County

#### **Betze-Post Mine (1)**

Operator:

Barrick Goldstrike Mines, Inc.

P.O. Box 29

Elko, NV 89803

775-748-1001 Fax: 748-1240

Company employees: 1,045

Production:

Gold - 544,736 oz

Silver - 134,283 oz

#### **Eastern Nevada Operations**

#### **(Carlin Operations) (2)**

Operator:

Newmont Mining Corp.

1655 Mountain City Highway

Elko, NV 89801

775-778-4000 Fax: 778-4360

Company employees: 2,264

Contract employees: 476

Production:

Gold - 943,823 oz

Silver - 101,475 oz

#### **Ruby Hill Mine (3)**

Operator:

Ruby Hill Mining Co.

P.O. Box 676

Eureka, NV 89316

775-401-6435

Company employees: 14

Production:

Gold - 6,472 oz

Silver - 7,791 oz

## **Lander County**

### **Argenta Mine (4)**

#### Operator:

Baker Hughes, Inc.  
P.O. Box 277  
Battle Mountain, NV 89820  
775-625-8700 Fax: 635-5455  
Company employees: 17

#### Shipped:

Barite - 33,533 tons

### **Cortez Hills Mine (5)**

#### Operator:

Barrick Cortez, Inc.  
HC66 Box 1250  
Crescent Valley, NV 89821  
775-468-4400 Fax: 468-4496  
Company employees: 322  
Contract employees: 130

#### Production:

(underground only, excluding the open-pit)

Gold - 338,275 oz  
Silver - 6,294 oz

### **Fire Creek Mine (6)**

#### Operator:

Klondex Gold and Silver Mining Co.  
P.O. Box 1867  
Elko, NV 89803  
775-738-6070  
Company employees: 76  
Contract employees: 110

#### Production:

Gold - 101,284 oz  
Silver - 80,593 oz

### **Greystone Mine (7)**

#### Operator:

M-I Swaco  
P.O. Box 370  
Battle Mountain, NV 89820  
775-635-5135  
Company employees: 6

#### Shipped:

Barite - 114,808 tons

### **Mountain Spring Mine (8)**

#### Operator:

M-I Swaco  
P.O. Box 370  
Battle Mountain, NV 89820  
775-635-5135  
Company employees: 27

#### Shipped:

Barite - 62,487 tons

### **Pipeline Mine (9)**

#### Operator:

Barrick Cortez, Inc.  
HC66 Box 1250  
Crescent Valley, NV 89821  
775-468-4400 Fax: 468-4496  
Company employees: 932  
Contract employees: 425

#### Production:

(includes the Cortez Hills open-pit)

Gold - 850,312 oz  
Silver - 22,565 oz

### **Phoenix Mine (10)**

#### Operator:

Newmont Mining Corp.  
P.O. Box 1657  
Battle Mountain, NV 89820  
775-635-9000 Fax: 778-4600  
Company employees: 507  
Contract employees: 275

#### Production:

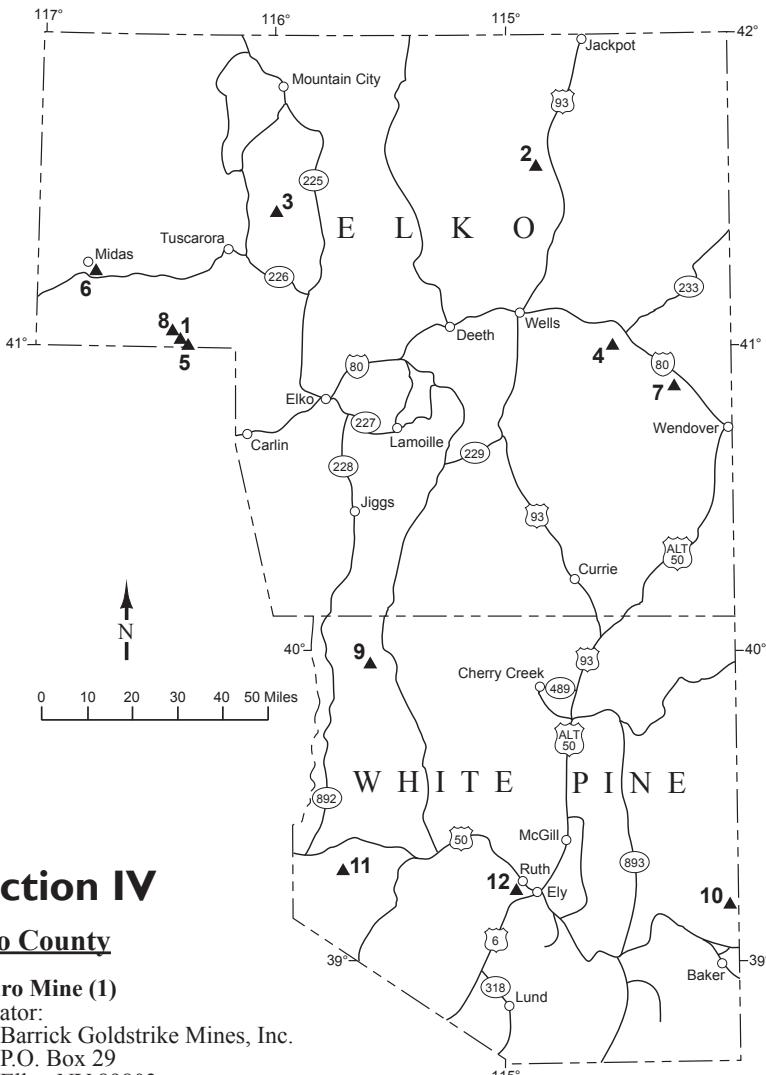
Gold - 176,756 oz  
Silver - 1,175,126 oz  
Copper - 41,806,950 pounds



**Drill rigs at Ormat's McGinness Hills geothermal field, Lander County**  
**(Lowell Price photo).**



**Haul trucks at KGHM's Robinson Mine, White Pine County (Courtney Brailo photo).**



## Section IV

### Elko County

#### **Arturo Mine (1)**

Operator:

Barrick Goldstrike Mines, Inc.  
P.O. Box 29  
Elko, NV 89803  
775-748-1001

Company employees: 177

Production:

Gold - 223,145 oz

#### **Big Ledge Mine (2)**

Operator:

National Oilwell Varco  
247 Bluffs Ave., Suite 101  
Elko, NV 89801  
775-738-7171 Fax: 738-7196

Company employees: 12

Shipped:

Barite - 19,286 tons

#### **Jerritt Canyon Mine (3)**

Operator:

Jerritt Canyon Gold, LLC  
HC31 Box 78  
Elko, NV 89801  
775-738-5600 Fax: 758-9233  
Company employees: 240  
Contract employees: 210

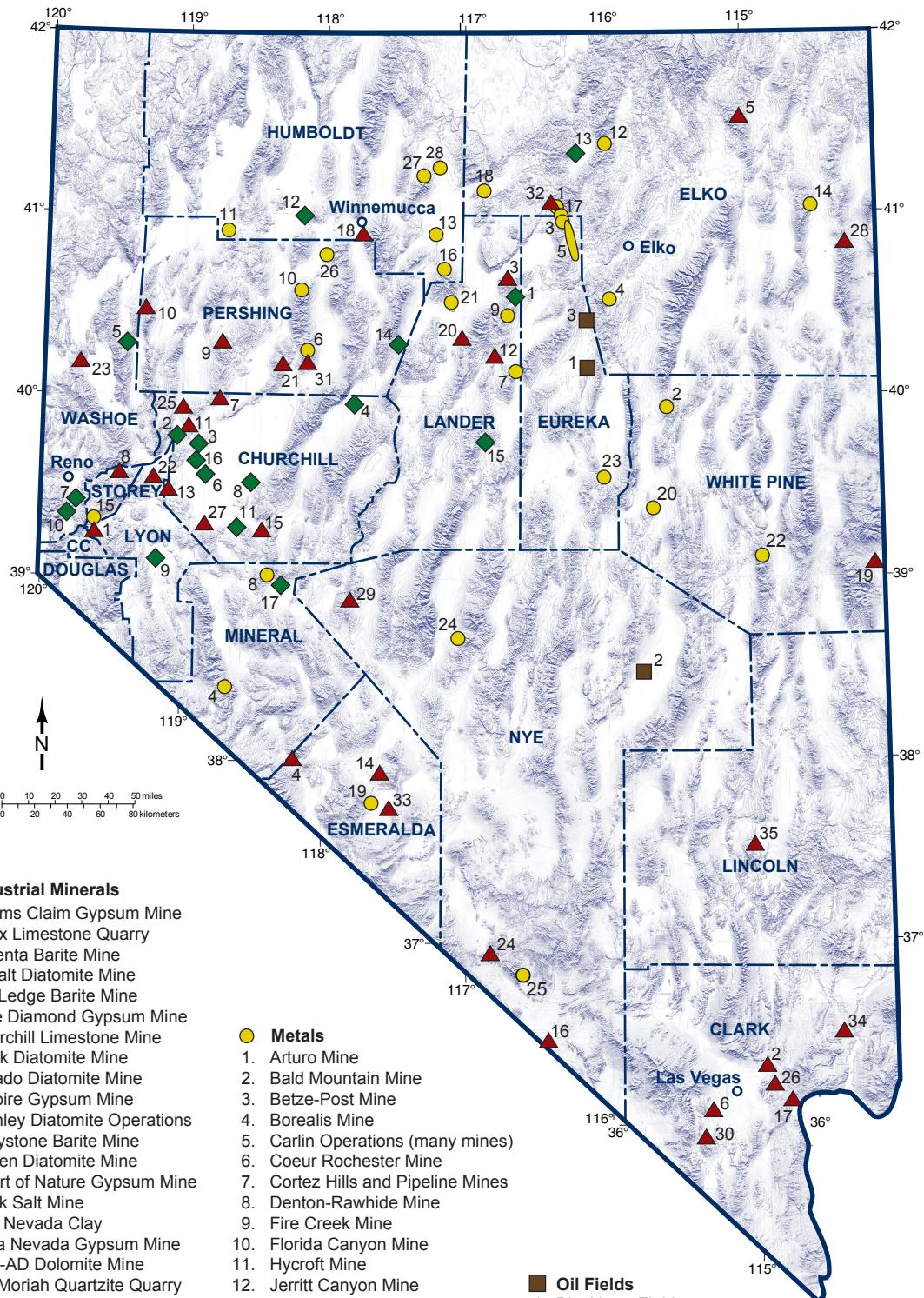
Production:

Gold - 140,990 oz

*Elko and White Pine continued on page 15  
after the centerfold*



*Rock bolting at Barrick's Turquoise Ridge Joint Venture underground gold mine, Humboldt County (Courtney Brailo photo).*



**Major mines, oil fields, and geothermal plants, 2016.**



***Blasthole drilling at Barrick's Turquoise Ridge Joint Venture underground gold mine, Humboldt County (Courtney Brailo photo).***

## Section IV (continued)

### Long Canyon Mine (4)

Operator:

Newmont USA, Ltd.  
1655 Mountain City Highway  
Elko, NV 89801  
775-778-4000  
    Company employees: 216  
    Contract employees: 110

Production:

Gold - 22,500 oz

### Meikle Mine (5)

Operator:

Barrick Goldstrike Mines, Inc.  
P.O. Box 29  
Elko, NV 89803  
775-748-1001 Fax: 748-1240  
    Company employees: 595

Production:

Gold - 417,438 oz

Silver - 37,615 oz

### Midas Mine (6)

Operator:

Klondex Mining Operations, Inc.  
HC Box 125  
Midas, NV 89414  
775-299-5046  
    Company employees: 140  
    Contract employees: 14

Production:

Gold - 29,577 oz

Silver - 1,345,990 oz

### Pilot Peak Quarry (7)

Operator:

Graymont Western US, Inc.  
P.O. Box 2520  
West Wendover, NV 89883  
775-483-5460  
    Company employees: 66

Production:

Limestone - 1,236,227 tons

### Rossi Mine (8)

Operator:

Halliburton Energy Services  
912 Dunphy Ranch Rd.  
Battle Mountain, NV 89820  
775-468-0515 Fax: 468-2060  
    Company employees: 6

No mine production in 2016

### White Pine County

#### Bald Mountain Mine (9)

Operator:

KG Mining (Bald Mountain), Inc.  
P.O. Box 2706  
Elko, NV 89803  
775-237-7100 Fax: 237-7101  
    Company employees: 500  
    Contract employees: 205

Production:

Gold - 129,282 oz

Silver - 864 oz

#### Mt. Moriah Quarry (10)

Operator:

Mt. Moriah Stone Quarries  
#10 Hatch Rock Rd.  
Baker, NV 89311  
435-855-2232 Fax: 855-2332  
    Company employees: 34

Production:

Quartzite - 2,831 tons

#### Pan Mine (11)

Operator:

GRP Pan, LLC  
P.O. Box 150278  
Ely, NV 89315  
    Company employees: 26  
    Contract employees: 127

Production:

Gold - 8,714 oz

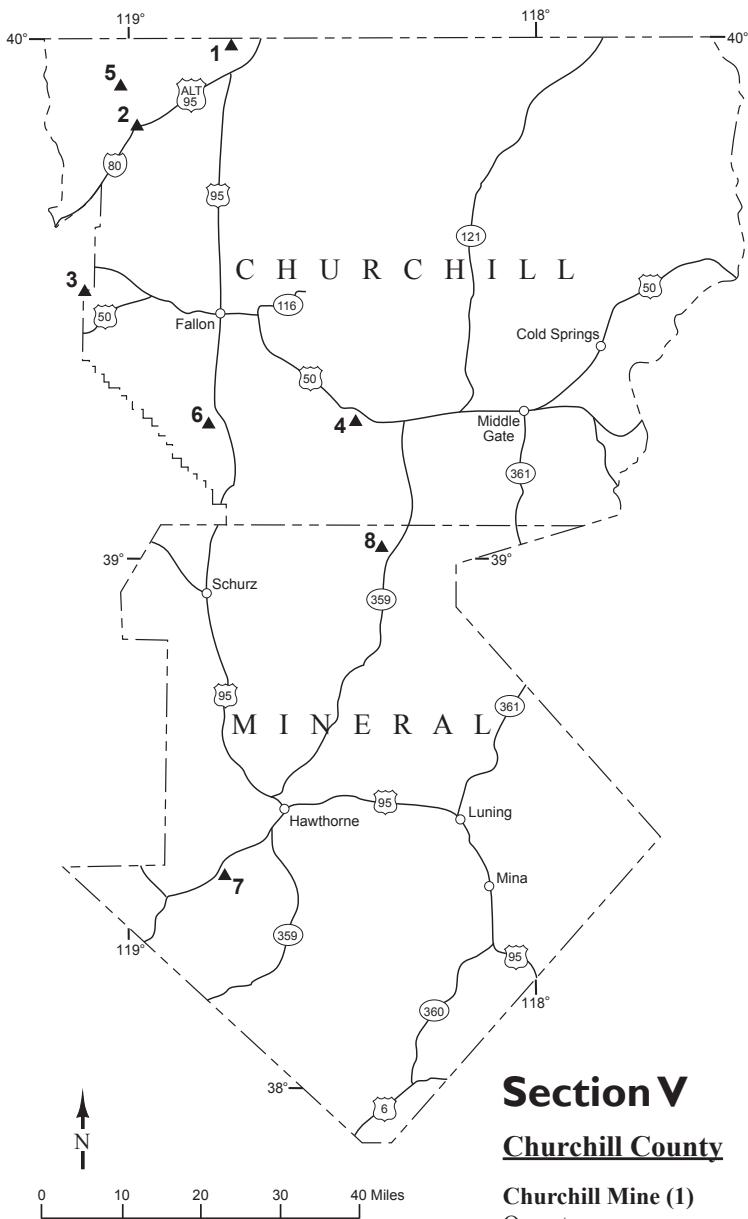
#### Robinson Mine (12)

Operator:

KGHM International, Ltd.  
P.O. Box 382  
Ruth, NV 89319  
775-289-7000 Fax: 289-7349  
    Company employees: 570  
    Contract employees: 8

Production:

Copper - 118,411,099 pounds  
Gold - 49,217 oz  
Molybdenite - 823,659 pounds



## Section V

### Churchill County

#### Churchill Mine (1)

Operator:

Nevada Cement Co.

P.O. Box 840

Fernley, NV 89408

775-575-2281 Fax: 575-4387

Company employees: 6

Production:

Limestone - 544,048 tons

**Fernley Diatomite Operations (2)**

Operator:

EP Minerals, LLC  
P.O. Box 860  
Fernley, NV 89408  
775-423-6668 Fax: 423-6411

Company employees: 35

Production:

Diatomite - 31,486 tons

**Hazen Mine (3)**

Operator:

EP Minerals, LLC  
640 Clark Station Rd.  
Sparks, NV 89434  
775-824-7700 Fax: 824-7715  
Company employees: 2  
Contract employees: 4

Production:

Diatomite - 9,343 tons

**Huck Salt (4)**

Operator:

Huck Salt Company  
2900 Phritzie Ln.  
Fallon, NV 89406  
775-423-2055 Fax: 423-0467  
Company employees: 9

Shipped:

Salt - 19,110 tons

**Nightingale Mine (5)**

Operator:

Imerys Minerals California, Inc.  
100 Front Street  
Fernley, NV 89408  
775-575-2536 Fax: 575-1570  
Company employees: 15  
Contract employees: 5

Production:

Diatomite - 21,950 tons

**Perlite Mine (6)**

Operator:

EP Minerals, LLC  
640 Clark Station  
Sparks, NV 89434  
775-824-7700 Fax: 824-7715  
Company employees: 5

Production:

Perlite - 17,476 tons

**Mineral County****Borealis Mine (7)**

Operator:

Borealis Mining Company, LLC  
P.O. Box 549  
Hawthorne, NV 89415  
775-826-7567  
Company employees: 6

Production:

Gold - 618 oz  
Silver - 1,511 oz

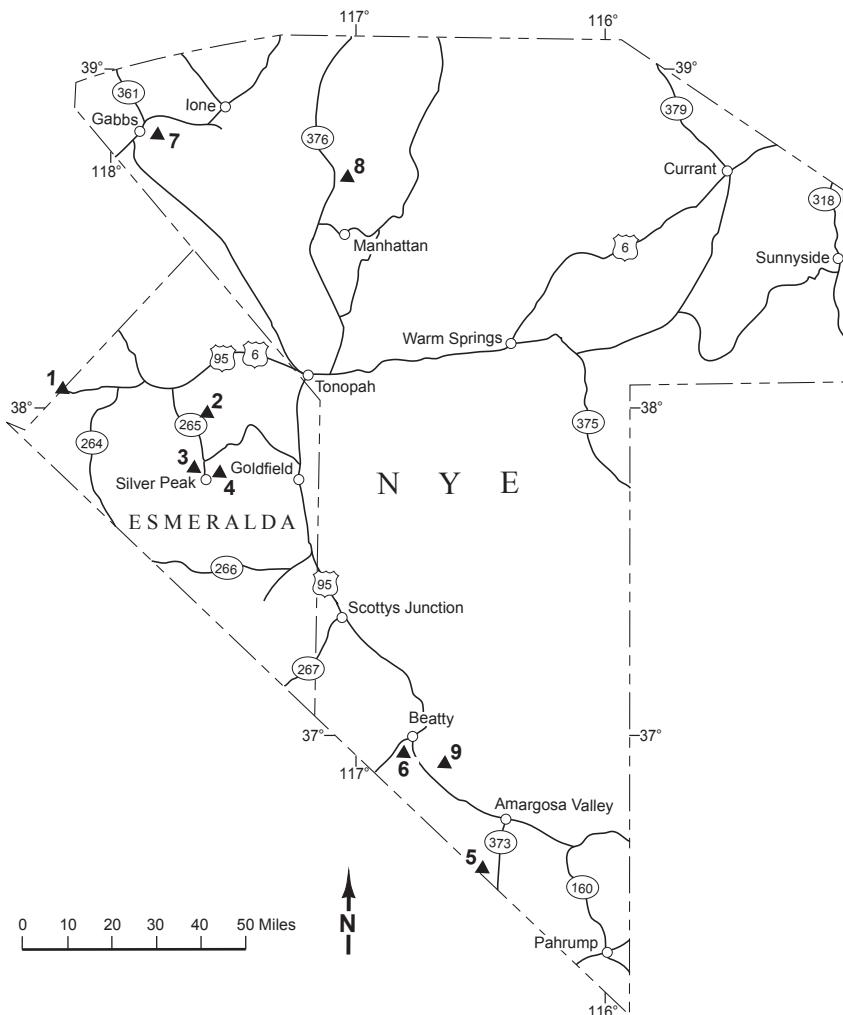
**Denton-Rawhide Mine (8)**

Operator:

Rawhide Mining, LLC  
P.O. Box 2070  
Fallon, NV 89407  
775-945-1015 Fax: 945-1213  
Company employees: 66  
Contract employees: 8

Production:

Gold - 17,972 oz  
Silver - 105,413 oz



## Section VI

### Esmeralda County

#### **Basalt Diatomite Mine (1)**

Operator:

Grefco Minerals, Inc.  
P.O. Box 278  
Dyer, NV 89010  
775-573-2422

Company employees: 15

Production:

Diatomite - 4,851 tons

### **Heart of Nature (2)**

Operator:

Heart of Nature, LLC  
3055 Saint Rose Parkway #778203  
Henderson, NV 89052  
702-462-6690  
    Company employees: 1  
    Contract employees: 4

Production:

Gypsum/sulfur soil amendment  
- 24,632 tons

### **Mineral Ridge Mine (3)**

Operator:

Mineral Ridge Gold, LLC  
1515 7th St.  
Elko, NV 89801  
702-799-9273 Fax: 775-753-4780  
    Company employees: 70  
    Contract employees: 20

Production:

Gold - 36,879 oz  
Silver - 16,950 oz

### **Silver Peak Lithium Operations (4)**

Operator:

Rockwood Lithium, Inc.  
P.O. Box 98  
Silver Peak, NV 89047  
775-937-2222 Fax: 937-2250  
    Company employees: 68  
    Contract employees: 10

Shipped:

Lithium compounds - 9,334,629 lbs

## **Nye County**

### **IMV Nevada (5)**

Operator:

Lhoist North America of Arizona  
P.O. Box 86  
Amargosa Valley, NV 89020  
775-372-5341 Fax: 372-5320  
    Company employees: 28  
    Contract employees: 6

Production:

Specialty clays - 68,870 tons

### **New Discovery Mine (6)**

Operator:

Vanderbilt Minerals, LLC  
P.O. Box 6660  
Pahrump, NV 89041  
775-537-6976 Fax: 537-6879  
    Company employees: 4

Production:

Specialty clays - 1,700 tons

### **Premier Magnesia (7)**

Operator:

Premier Magnesia, LLC  
P.O. Box 177  
Gabbs, NV 89409  
775-285-2601 Fax: 285-4021  
    Company employees: 115  
    Contract employees: 3

Shipped:

Magnesium compounds - 110,000 tons

### **Smoky Valley Common Operation (8)**

Operator:

Round Mountain Gold Corp.  
P.O. Box 480  
Round Mountain, NV 89045  
775-377-2366 Fax: 377-3224  
    Company employees: 795  
    Contract employees: 227

Production:

Gold - 371,484 oz  
Silver - 721,465 oz

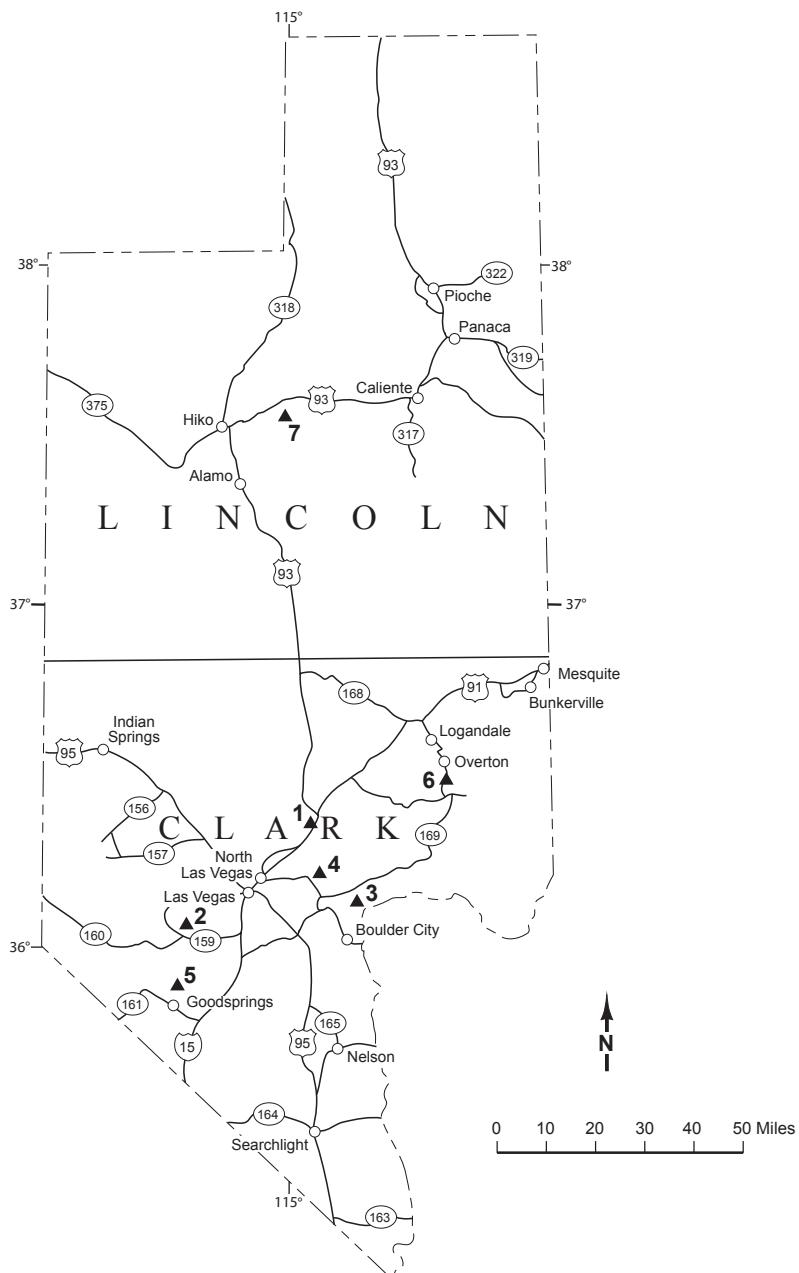
### **Sterling Mine (9)**

Operator:

Sterling Gold Mining Corp.  
P.O. Box 549  
Beatty, NV 89003  
866-608-4381 Fax: 775-981-9044  
    Company employees: 7

Production:

Gold - 350 oz



## Section VII

### Clark County

#### **Apex Quarry (1)**

Operator:

Lhoist North America  
12101 N. Las Vegas Blvd.  
North Las Vegas, NV 89165  
702-643-7702 Fax: 643-9517  
Company employees: 110  
Contract employees: 2

Production:

Limestone - 1,260,000 tons  
Dolomite - 283,000 tons

#### **Blue Diamond Hill Mine (2)**

Operator:

Gypsum Resource Materials, LLC  
P.O. Box 147  
Blue Diamond, NV 89004  
702-830-3378 Fax: 441-7148  
Company employees: 101  
Contract employees: 1

Production:

Gypsum - 1,290,640 tons

#### **Lima Nevada Gypsum Mine (3)**

Operator:

H. Lima Nevada, LLC  
704 E. Yosemite  
Manteca, CA 95336  
661-549-0784 Fax: 363-2294  
Company employees: 8  
Contract employees: 1

Production:

Gypsum - 72,000 tons

#### **PABCO Gypsum Mine (4)**

Operator:

PABCO Building  
Products, LLC  
P.O. Box 364329  
North Las Vegas, NV 89036  
702-407-3700 Fax: 643-6249  
Company employees: 17  
Contract employees: 1

Production:

Gypsum - 1,375,612 tons

#### **Rainbow Quarry (5)**

Operator:

Las Vegas Rock, Inc.  
P.O. Box 19118  
2 Jean Prison Rd.  
Jean, NV 89019  
702-791-7625 Fax: 896-4533  
Company employees: 45

Production:

Meta-quartzite - 66,335 tons

#### **Simplot Silica Products (6)**

Operator:

J.R. Simplot Company  
P.O. Box 308  
Overton, NV 89040  
702-397-2667 Fax: 397-2798  
Company employees: 41

Shipped:

Silica sand - 754,852 tons

### Lincoln County

#### **Tenacity Perlite Mine (7)**

Operator:

Wilkin Mining & Trucking, Inc.  
HC 34 Box 199  
Caliente, NV 89008  
775-728-4463  
Company employees: 13

Production:

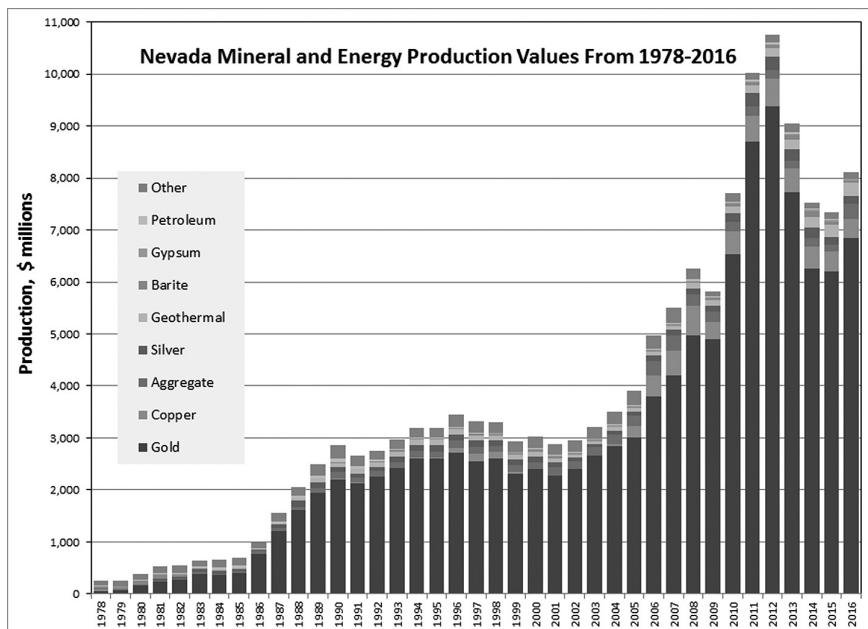
Perlite - 2,408 tons

## Summary of 2016 production

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Gold	5,467,646	ounces
Silver	8,885,873	ounces
Barite (shipped)	230,114	tons
Copper	160,218,049	pounds
Diatomite	218,642	tons
Dolomite	323,483	tons
Gypsum	3,179,781	tons
Limestone	3,215,506	tons
Lithium compounds (shipped)	9,334,629	pounds
Magnesium compounds (shipped)	110,000	tons
Molybdenite	823,659	pounds
Perlite	19,884	tons
Salt (shipped)	19,110	tons
Silica sand (shipped)	754,852	tons
Specialty clay	98,747	tons

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# Economic Impacts of Mining in Nevada—2016

Nevada's mining industry recorded approximately \$8.14 billion in total value of all commodities in 2016, representing a 10.4% increase from the \$7.37 billion value in 2015. Nearly 86% of the value was driven by gold and silver, which contributed nearly \$7 billion, based on the actual gross proceeds reported to the Nevada Department of Taxation. According to Kitco Metals Inc. ([www.kitco.com](http://www.kitco.com)), the average prices for gold and silver in 2016 were \$1,250.74 and \$17.14 per troy ounce, respectively. Nevada led the nation in 2016 in the production of gold, barite, lithium compounds and magnesium compounds. Nevada produced a wide variety of other mineral and energy commodities such as clays, copper, diatomite, dolomite, geothermal energy, gypsum, lapidary and gem stones, limestone, molybdenite, oil, perlite, salt, silica sand, silver, and specialty aggregates. A summary of commodity production amounts, value, and year over year percentage changes can be seen in Table 1.

## Production Highlights

Nevada's gold production was 5,467,646 troy ounces in 2016 compared to 5,339,659 troy ounces in 2015, a very slight increase of 0.02%. According to the USGS, Nevada remains the nation's top gold producer with about 81% (170 metric tons) of the U.S. total (209 metric tons) and would rank 4<sup>th</sup> in world gold production behind China, Australia and Russia. A summary of 2016 metal production, ranked by producer, is shown in Table 2.

## Employment

According to the Nevada Department of Employment, Training, and Rehabilitation, the Nevada minerals industry, including support activities and oil and gas extraction, directly employed an average of 12,474 people in 2016. The average pay for mineral industry employees during this time was \$94,744 per year, the second highest average of any employment sector in the state. Mining employment has remained an important factor in Nevada.

**Table 1. Summary of 2016 Nevada Mineral Commodity Production**

Commodity	Production Amount	Unit	YOY Change (%)	Value (\$)	YOY Value Change (%)
Gold	5,467,646	ounces	2.4%	\$6,838,603,558	10.4%
Silver	8,885,873	ounces	-6.4%	\$152,334,964	2.3%
Barite (shipped)	230,114	tons	-55.4%	\$22,023,940	-63.3%
Copper	160,218,049	pounds	-9.8%	\$370,610,759	-7.6%
Diatomite	262,604	tons	15.6%	\$44,195,420	2.5%
Dolomite	323,483	tons	-2.8%	\$4,194,360	11.4%
Gypsum	3,275,503	tons	-3.6%	\$37,247,488	-0.1%
Limestone	3,215,506	tons	-58.8%	\$34,456,064	-6.7%
Lithium compounds (shipped)	9,334,629	pounds	-20.3%	\$23,253,978	-9.2%
Magnesium compounds (shipped)	110,000	tons	1.0%	\$6,870,237	2.6%
Molybdenite	823,659	pounds	-9.0%	\$5,428,662	-25.9%
Perlite	19,884	tons	-23.3%	\$1,359,539	-50.9%
Salt (shipped)	19,110	tons	64.0%	\$611,526	34.6%
Silica sand (shipped)	754,852	tons	-3.0%	\$20,412,834	-3.7%
Specialty clays	98,747	tons	34.3%	\$8,013,613	6.5%
Geothermal energy (sold)	3,344,233	megawatt hours	7.4%	\$258,187,350	7.6%
Oil (sold)	278,599	barrels	-1.2%	\$10,333,936	-18.0%
Aggregates	37,800,000	tons	35.0%	\$298,000,000	146.3%
		Total Value		\$8,136,138,228	10.4%

## Permitting and Reclamation

Before mining can begin, plans of operation must be submitted and permits obtained from federal and state agencies to ensure that resources such as wildlife, air, and water are protected. Nevada and federal laws and regulations require that lands disturbed by mining activities be rehabilitated so they can be used for other activities once mining is completed. This process, called reclamation, returns mined areas to other productive practices such as livestock grazing, wildlife habitat enhancement, recreation opportunities, or other natural resource uses. To ensure that reclamation is complete, mine operators are required to post reclamation bonds that are held by government agencies. The bonds are released only after the mined area is stabilized and the reclamation goals have been met. According to the Nevada Division of Environmental Protection, approximately \$2.66 billion in reclamation bonds and other financial assurance are currently posted. Mine

operators are proud of their efforts and are constantly seeking ways to enhance their reclamation technology.

## Gold Reserves

Gold reserves are defined as that portion of a gold ore deposit known to be economically feasible for extraction. The amount of reserves is always in a state of flux, due to some reserves being lost to production, additions of new reserves through new discoveries, and changing economic conditions. The price of gold and the cost of production are the main factors in determining whether a reserve is really a reserve or just a sub-economic resource. Extensive gold resources, not currently economic, are known to exist at or near many mining operations in Nevada. An increase in the gold price with all else being equal would mean many companies would be able to reclassify their resources into a reserve category. An increase in the cost of regulatory compliance has the same effect as a lowering of the gold price, thus increasingly complex

**Table 2. 2016 Nevada Metal Production, by Producer**

Operator	Gold (ozs)	Silver (ozs)	Copper (lbs)	Moly (lbs)
Barrick	2,639,826	200,757		
Newmont	1,631,131	1,504,415	41,806,950	
Kinross	500,766	722,329		
Silver Standard Resources	205,116	2,349		
Jerritt Canyon	140,990	NR		
Klondex	130,861	1,426,583		
Coeur Rochester	50,750	4,564,139		
KGHM International	49,217	NR	118,411,099	823,659
Mineral Ridge Gold	36,879	16,950		
Hycroft	32,265	235,934		
Rawhide Mining	17,972	105,413		
Florida Canyon Mining	10,873	21,898		
GRP Pan	8,714	NR		
Ruby Hill Mining	6,472	7,791		
Comstock Mining	4,086	75,657		
Sunrise Minerals	668	121		
Borealis Mining	618	1,511		
Sterling Gold Mining	350	NR		
Dun Glen Mining	43	NR		
Geo-Nevada	24	18		
A.U. Mines	21	8		
Bernell Lloyd	4	NR		
<b>Totals</b>	<b>5,467,646</b>	<b>8,885,873</b>	<b>160,218,049</b>	<b>823,659</b>

and expensive regulations can reduce reserves. For the larger operating mines, the publically reported reserves for the year ending 2016 were approximately 56 million ounces of gold. Assuming similar economic conditions without any reserve replacement, current reserves are sufficient to sustain gold production near current levels in Nevada for about ten years (Table 3).

## Exploration

Exploration for new deposits, particularly gold, is an ongoing effort by both the operating companies and many others who do not operate mines in the state. Exploration geologists, drillers, assayers, and others who support exploration activities represent a significant positive economic impact, particularly in Nevada's rural areas. Exploration activity and funding, like gold reserves, are closely tied to economic conditions and commodity prices. In order to quantify the level of exploration activity and the factors responsible for those levels, the Division contracted with the Nevada Bureau of Mines and Geology, who released the results of the biennial exploration survey in

early 2017 using 2015 and 2016 data. This informative report, which can be downloaded at <http://pubs.nbmge.unr.edu/NV-exploration-survey-2016-p/es2016.htm>, revealed that gold exploration accounted for 86 percent (\$278 million) of \$325 million total exploration spending, down slightly from \$348 million in 2015. Two large companies accounted for 38 percent of the total spending. Approximately 808 people were directly employed by companies doing exploration activities in Nevada in 2016, up from 745 in 2015. Interestingly, exploration for lithium was second in total exploration spending at \$20.9M in 2016, followed closely by exploration for geothermal energy at \$16.6M.

## Oil and Geothermal Activity

Economic activity from oil and gas exploration and production is relatively minor when compared to mining, but are locally important to the economy of east-central Nevada. In oil field terms, Nevada is considered a frontier state, meaning its potential is yet to be realized. Exploration activity and production were both negatively impacted by the price of crude in 2016. According to the U.S.

**Table 3. Nevada Mine Reserves (Proven and Probable) Reported for End of Year 2016**

Company	Mine	Gold (ozs)	Silver (ozs)	Copper (lbs)
Newmont	Carlin Operations	15,000,000		
Newmont	Phoenix	4,340,000	60,910,000	1,260,000,000
Newmont	Twin Creeks	4,930,000		
Newmont	Turquoise Ridge (25%)	1,340,000		
Newmont	Long Canyon	1,170,000		
Barrick	Goldstrike (OP and UG)	8,077,000		
Barrick	Cortez	10,220,000		
Barrick	Turquoise Ridge (75%)	4,029,000		
Barrick	South Arturo (60%)	122,000		
Coeur	Rochester	803,000	112,045,000	
Kinross	Round Mountain (100% as of 1/11/16)	1,267,000	1,232,000	
Kinross	Bald Mountain (100% as of 1/11/16)	2,133,000		
Silver Standard	Marigold	2,840,000		
Klondex	Midas	140,000	2,475,000	
Klondex	Fire Creek	291,000	225,000	
KGHM	Robinson			565,400,000
	<b>Totals</b>	<b>56,702,000</b>	<b>176,887,000</b>	<b>1,825,400,000</b>

Energy Information Administration, the price for a barrel of West Texas Intermediate crude in 2016 ranged from a monthly average low of \$26.11 to a high of \$43.90 and averaged \$36.86 for the year, versus \$44.54 in 2015. Nevada's oil production in 2016 was relatively unchanged from 2015 at 278,599 barrels (42 gallons per barrel), with 276,328 barrels sold worth approximately \$10.3 million. Table 4 summarizes the number of barrels sold and wells by operator and field in 2016.

Nevada is rich in geothermal resources and is second only to California in the production of geothermal energy. For 2016, Nevada had 24 plants at 16 fields that sold approximately 3.3 million megawatt hours of electricity worth approximately \$258 million (Table 5). According to the U.S. Energy Information Association, this is enough to power about 280,000

Nevada residential homes for a year. Geothermal heat is also used for a variety of commercial, domestic and public applications in Nevada. Schools in Elko County, a casino in Washoe County and homes in Lincoln and Washoe counties are examples of public and private facilities using this renewable energy resource.

## Conclusion

Nevada's mineral industry continued to be a major economic force in the state with a total value of over \$8 billion in 2016. Given a stable price and regulatory environment this situation should continue for many years to come. Nevada is a major natural resource producer and has significant mineral and energy resources that can provide opportunities for economic development well into the future.

**Table 4. Nevada Oil Production in 2016**

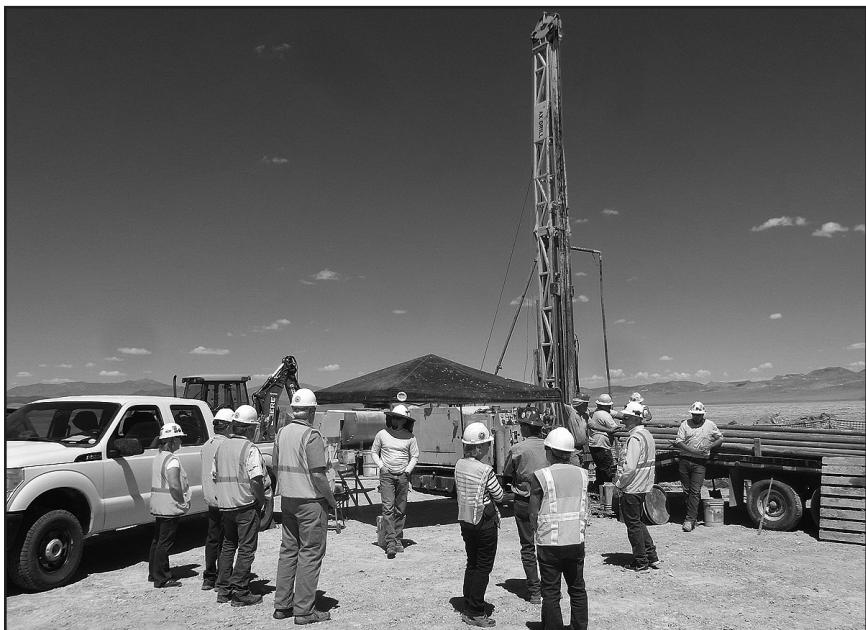
Operator	Producing Field	# of Producing Wells	Total Barrels Sold
Makoil	Trap Spring	27	114,644
Grant Canyon	Blackburn	5	45,387
Grant Canyon	Grant Canyon	3	41,822
Kirkwood	Eagle Springs	10	26,897
Western General	Kate Spring	3	18,280
Kirkwood	Ghost Ranch	3	8,503
Makoil	Kate Spring	1	5,616
Grant Canyon	Bacon Flat	1	5,375
Makoil	Ghost Ranch	1	5,155
Western General	Taylor Federal	1	1,478
Frontier Exploration	Munson Ranch	5	1,433
Andromeda	Tomera	2	960
Grant Canyon	Sans Spring	1	531
Kirkwood	Sand Dune	1	246
<b>Totals</b>		<b>64</b>	<b>276,328</b>

**Table 5. Nevada Geothermal Production in 2016 by Company**

Company	Total Output (Sales) MWh
Ormat Nevada Inc.	2,016,715
Terra-Gen Power Holdings II, LLC	583,687
Enel North America Inc.	238,779
NGP Blue Mountain 1 LLC	234,904
Patua Project LLC	115,973
USG Nevada LLC	75,049
Cyrq Energy	70,002
Homestretch Energy	9,125
<b>Total</b>	<b>3,344,233</b>



*J.R. Simplot's silica sand quarry, Clark County  
(Courtney Brailo photo).*



*Commission on Mineral Resources visit to lithium brine exploration project  
at Columbus Salt Marsh, Esmeralda County (Rich Perry photo).*

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