

UPDATE ON PRODUCTION AND EXPLORATION ACTIVITY IN NEVADA

Jonathan G. Price¹, Alan R. Coyner²,
Joseph V. Tingley¹, and Doug Driesner²

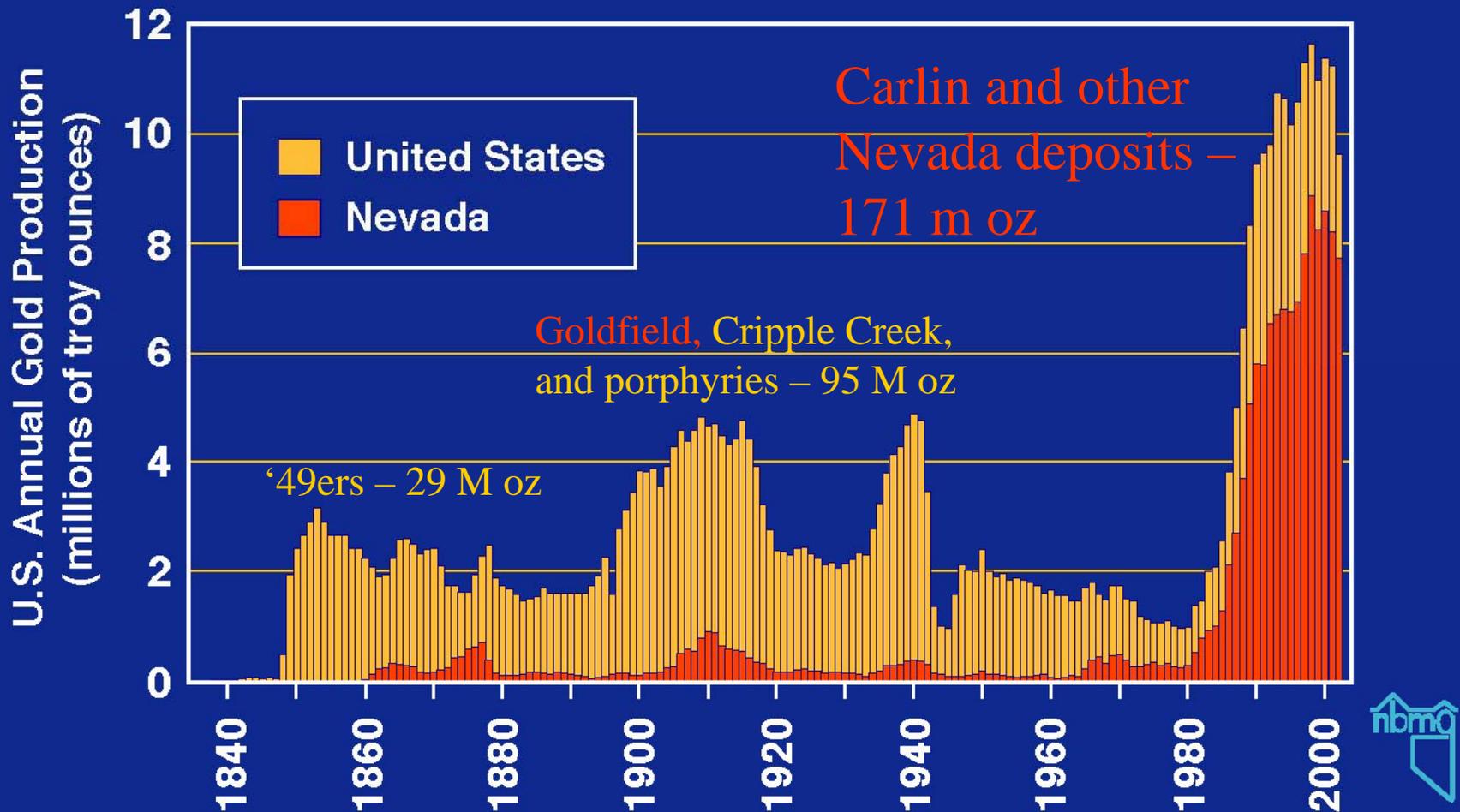
¹Nevada Bureau of Mines and Geology
(www.nbmg.unr.edu)

²Nevada Division of Minerals
(minerals.state.nv.us)

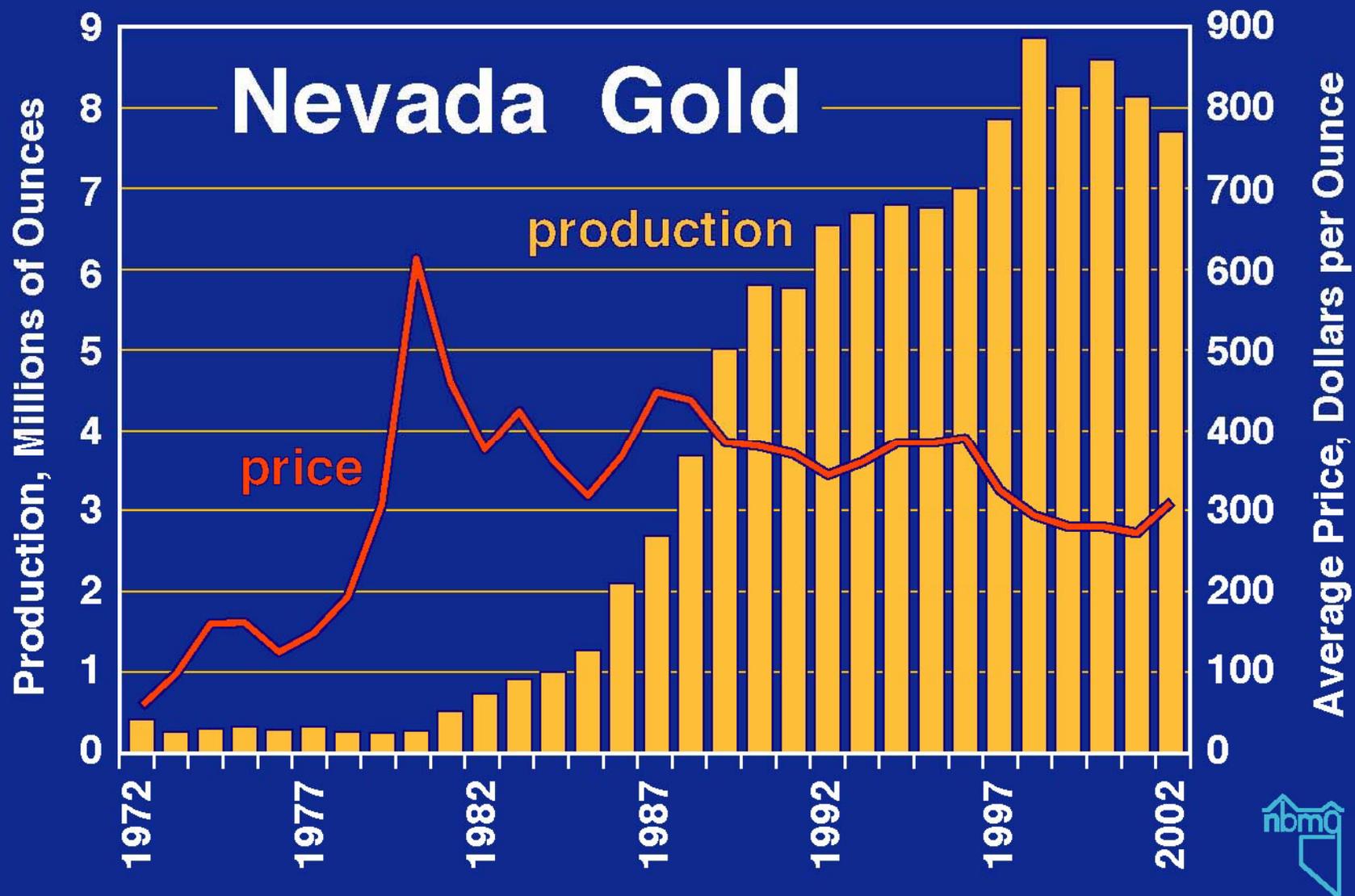
\$400+ / oz Au

**Nevada is a great place to explore for
and mine gold.**

Gold Production, 1835-2002



We are in the midst of the biggest gold boom in American history.



7.7 Moz in 2002, 81% of U.S. and 10% of world production



Minerals of Nevada

NBMG Special Publication 31

(2003, 512 pages)

\$75 for a signed copy

(by December 31 –

www.nbmgs.unr.edu)



Gold, Round Mountain

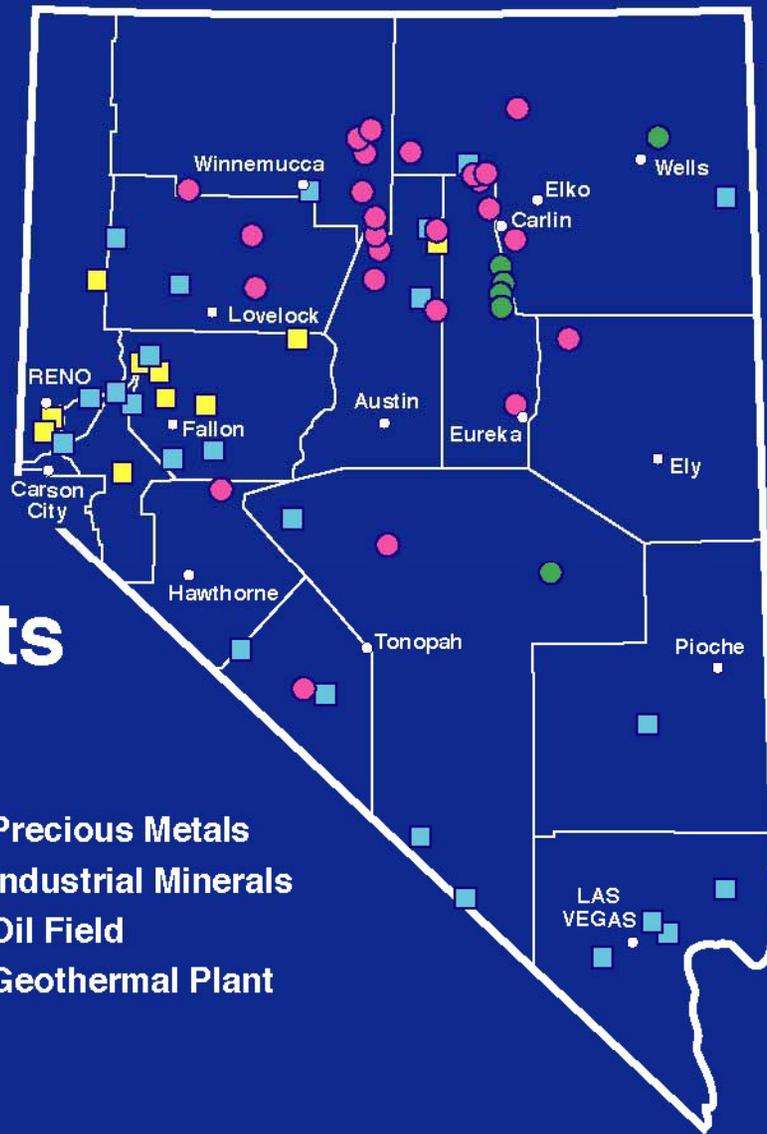


Opal, Virgin Valley

Major Mines, Oil Fields, and Geothermal Plants

24 major gold mines
(44% from the Carlin
trend; 8 not on the
trend with > 100K oz)

- Precious Metals
- Industrial Minerals
- Oil Field
- Geothermal Plant



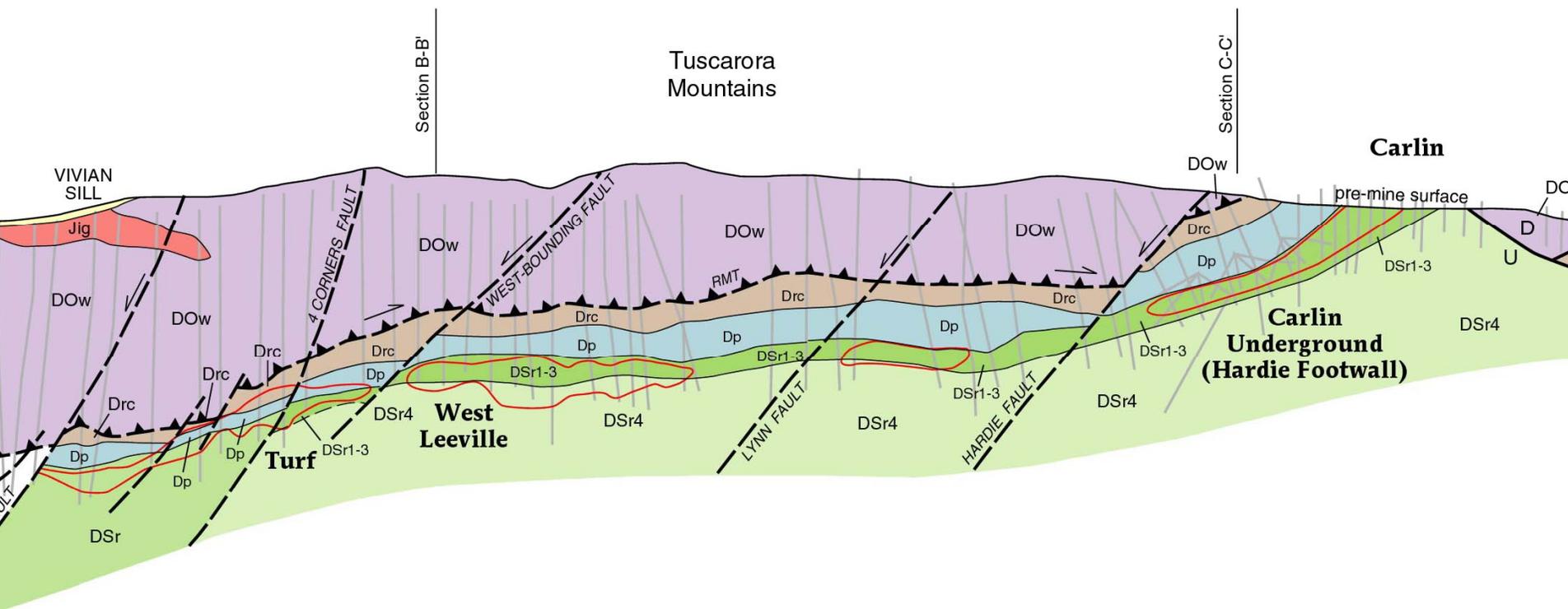
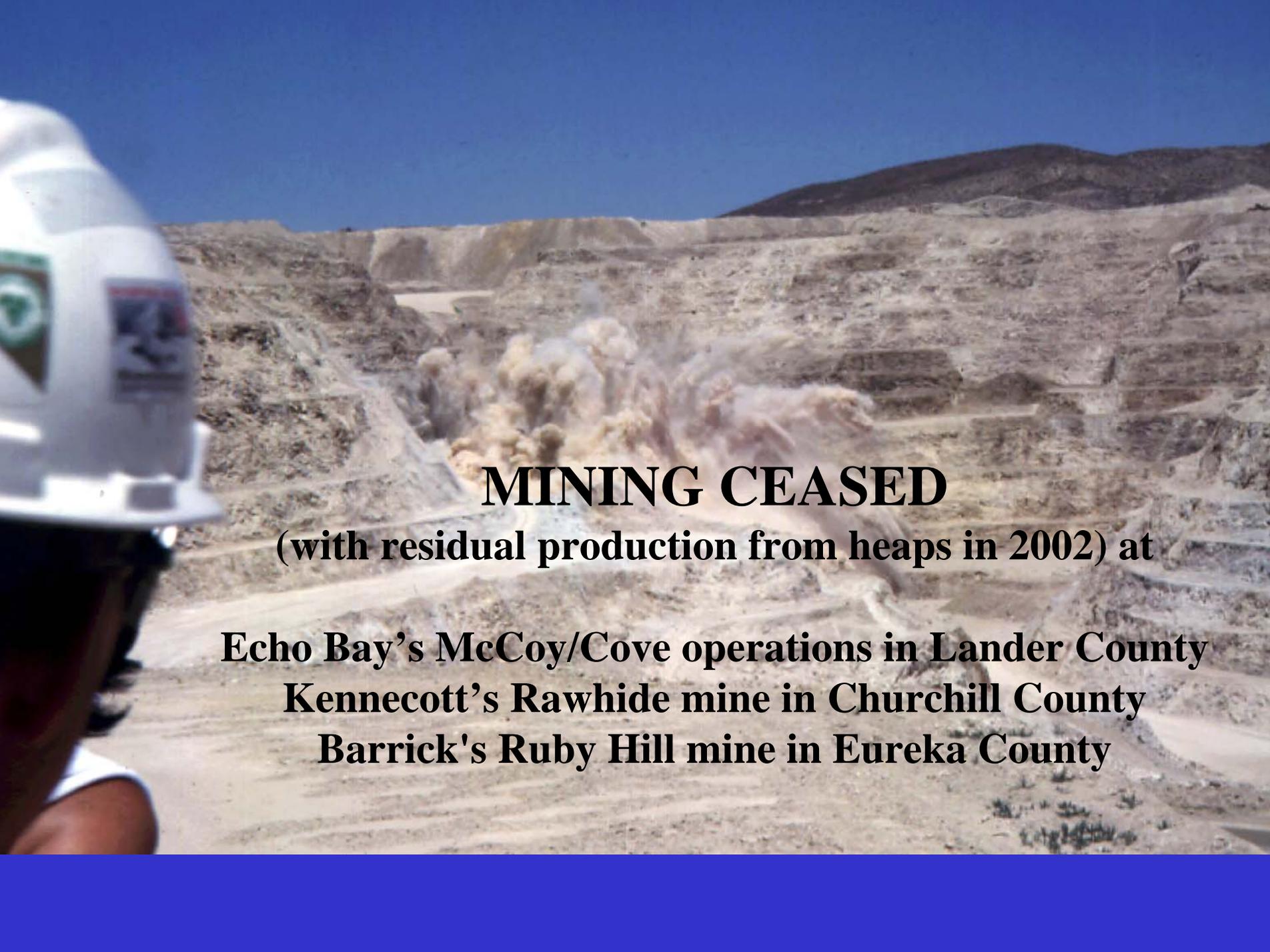


Plate 1 Cross Sections A-A' through E-E':
 Newmont Mining Corporation geologists, Steve Moore: g
 George Smith, GeoMax, Inc. : drill-hole base cross-section

Section by Steve Moore & others, Newmont, NBMG Bulletin 111 -
Gold Deposits of the Carlin Trend, edited by Tommy Thompson, Lew Teal,
 and Dick Meeuwig (204 pages, with detailed geologic maps and sections –
 \$35 from www.nbmge.unr.edu)



MINING CEASED

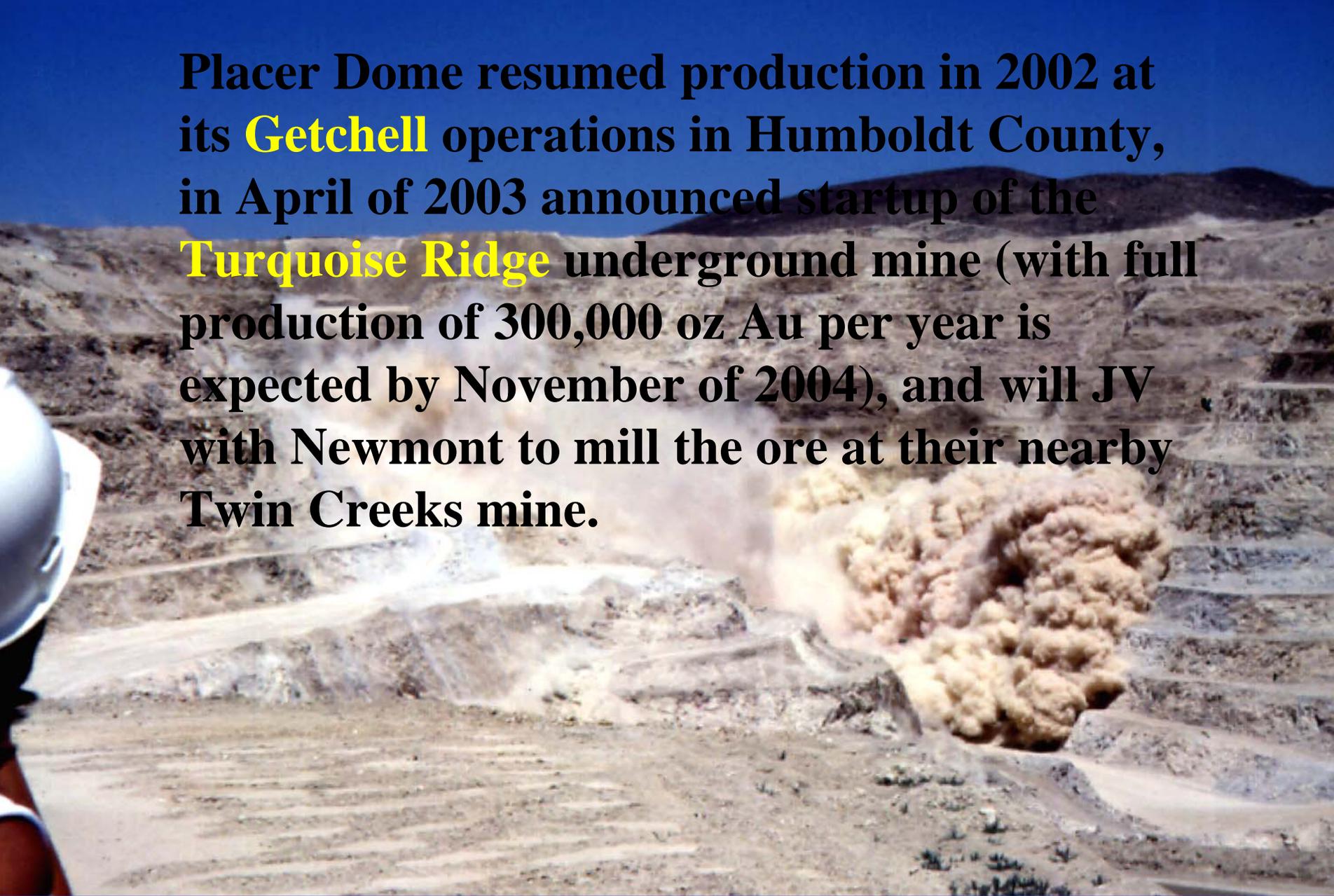
(with residual production from heaps in 2002) at

Echo Bay's McCoy/Cove operations in Lander County

Kennecott's Rawhide mine in Churchill County

Barrick's Ruby Hill mine in Eureka County

Placer Dome resumed production in 2002 at its **Getchell** operations in Humboldt County, in April of 2003 announced startup of the **Turquoise Ridge** underground mine (with full production of 300,000 oz Au per year is expected by November of 2004), and will JV with Newmont to mill the ore at their nearby **Twin Creeks** mine.





Metallic Ventures Gold Inc. plans to produce from the high-grade Martinez and Prospectus veins at Aurora (Esmeralda Project in Mineral County) – 350 ton per day mill, full production expected in 2004.



U.S. Gold Corporation and BacTech Enviromet Corporation say that gold production is targeted for 2004 at the Tonkin Springs mine in Eureka County – using a bioleach technology.



**Newmont's Gold Quarry South Layback –
scheduled to produce in the 4th quarter of 2003,
ramping up to a rate of 420,000 to 440,000 oz
Au/yr.**



Round Mountain Gold is filing a plan of operations with BLM for a new open pit at Gold Hill, north of Round Mountain. A feasibility study is planned for early 2004.

Planned New Production

Phoenix Project

(Newmont)

6.03 million ounces of gold (reserve)

515 million pounds of copper (reserve)

Planned production for 2008:

415,000 ounces of Au/yr,

2.2 million ounces of Ag/yr, and

28.8 million pounds of Cu/yr

Planned New Production

Expansion fully underway at **Marigold mine**

When new production is phased in (in 2005), production will rise from about 75,000 oz Au/year to about 180,000 oz Au/year.

Millenium Project

(Marigold JV of Glamis Gold Ltd. & Barrick)

south of the Marigold Mine, Humboldt County

MEASURED AND INDICATED RESOURCE:

71.6 million tons @ 0.031 opt = 2.22 million oz Au

INFERRED:

94.7 million tons @ 0.022 opt = 2.06 million oz Au

RESERVE AT \$275/oz:

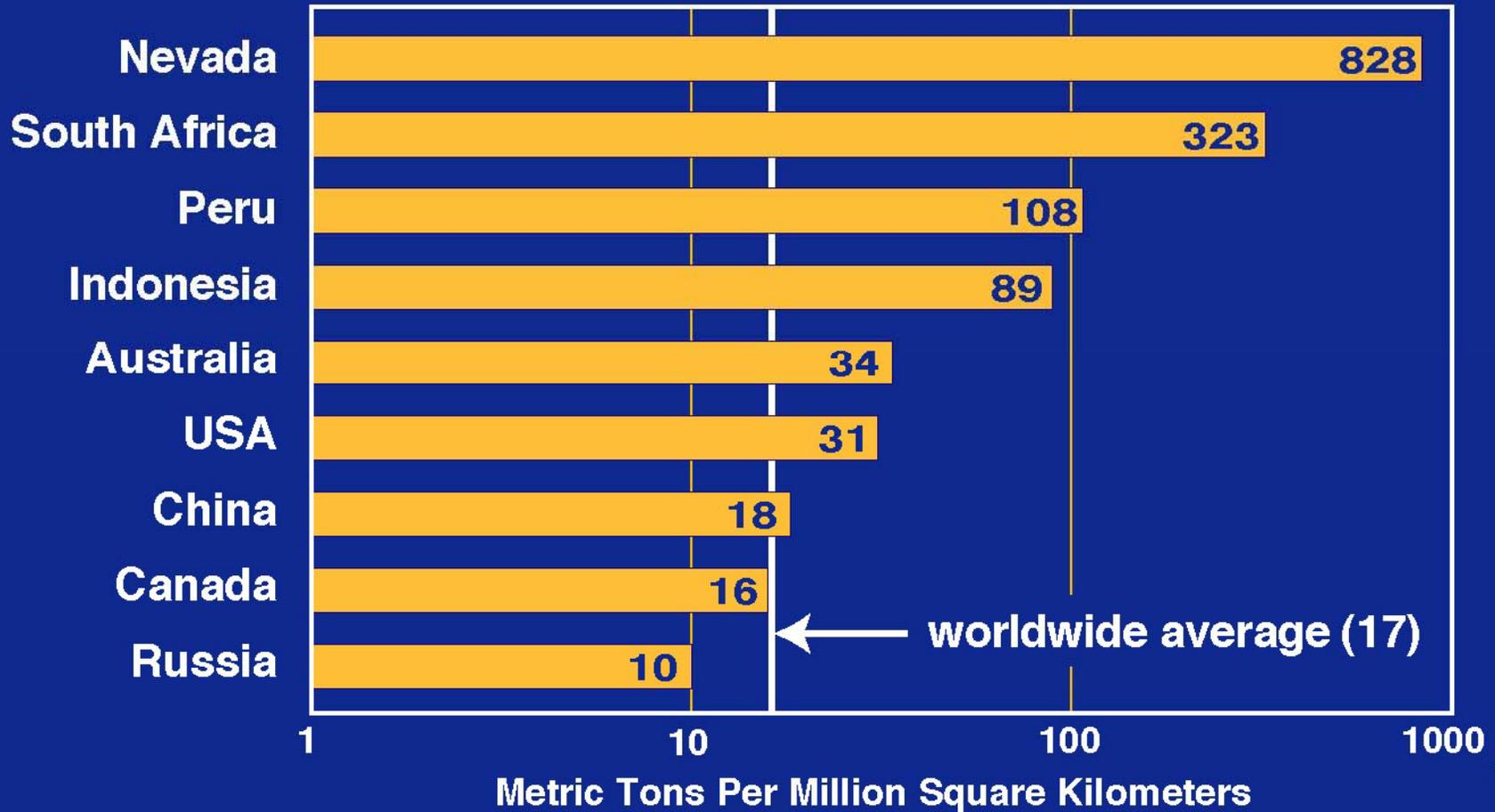
50 million tons @ 0.033 opt = 1.57 million oz Au

An aerial photograph of a mining operation. In the foreground, a tall, red drilling rig stands on a rocky slope. Below it, several pieces of heavy machinery, including a white truck and a yellow excavator, are visible. The middle ground shows a large, terraced mining pit with winding roads. The background consists of rolling hills under a clear blue sky.

Planned Production
Leeville Underground
Newmont Mining Corp.

production scheduled for 4th quarter of 2004
(500,000 to 550,000 oz Au/yr for 7 years from
3 deposits—West Leeville, Four Corners, and Turf)

2002 Gold Production Per Unit Area



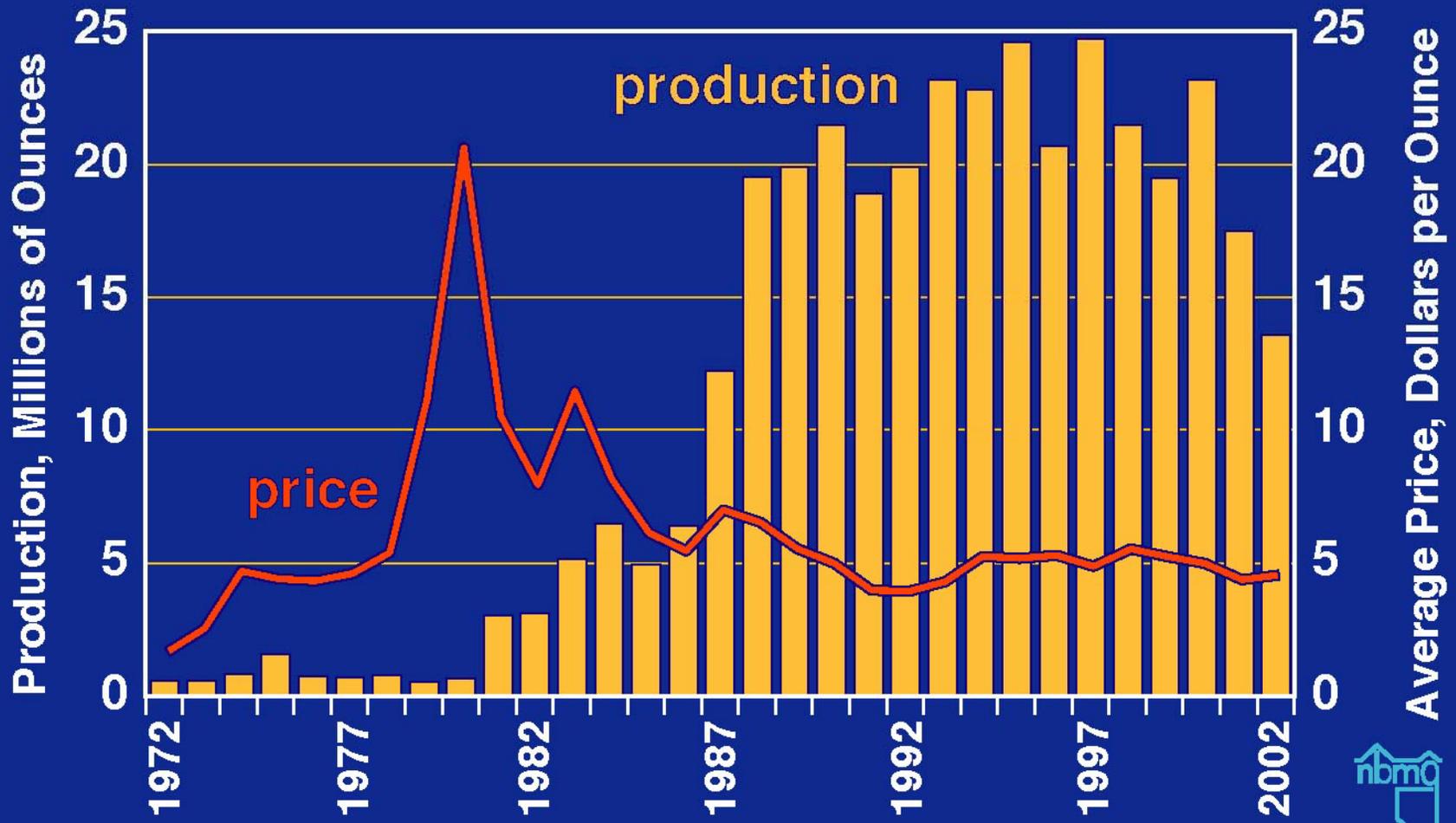


*Gold from Water
(and Other Mining
Scams)* – NBMG

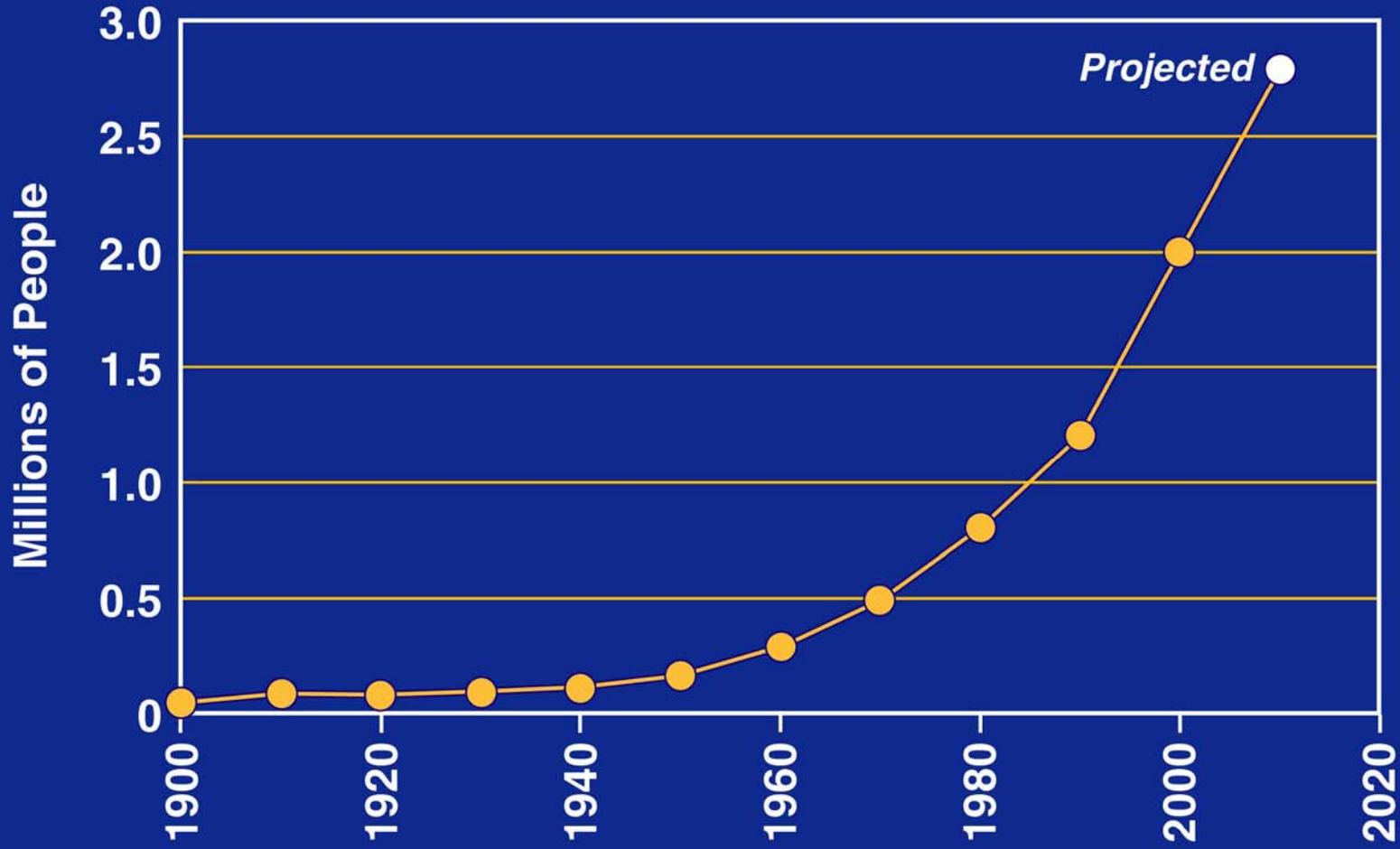
Special Publication 22
(www.nbmг.unr.edu –
free on the Web)

Report suspected scams to
the Nevada Division of
Minerals.

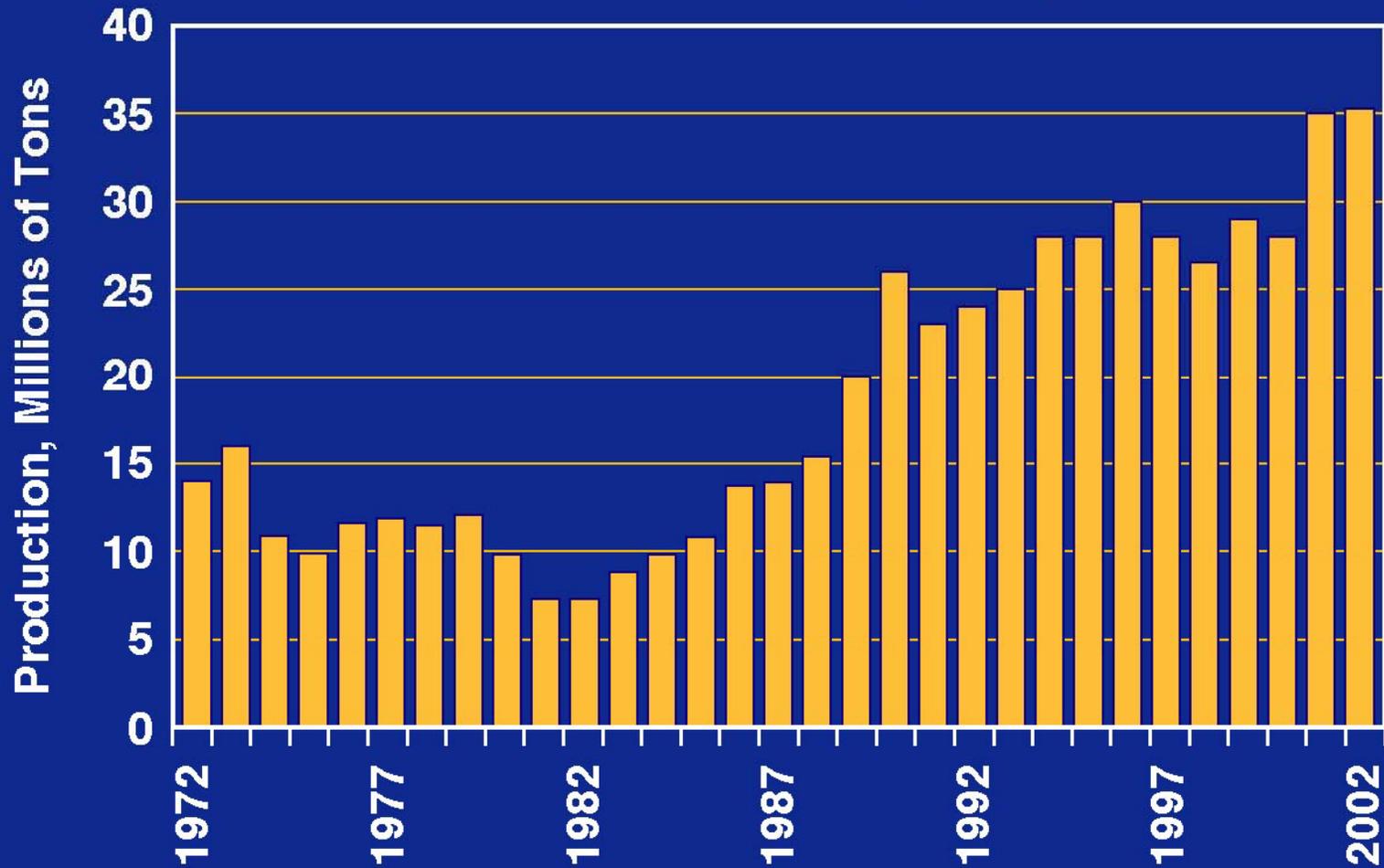
Nevada Silver



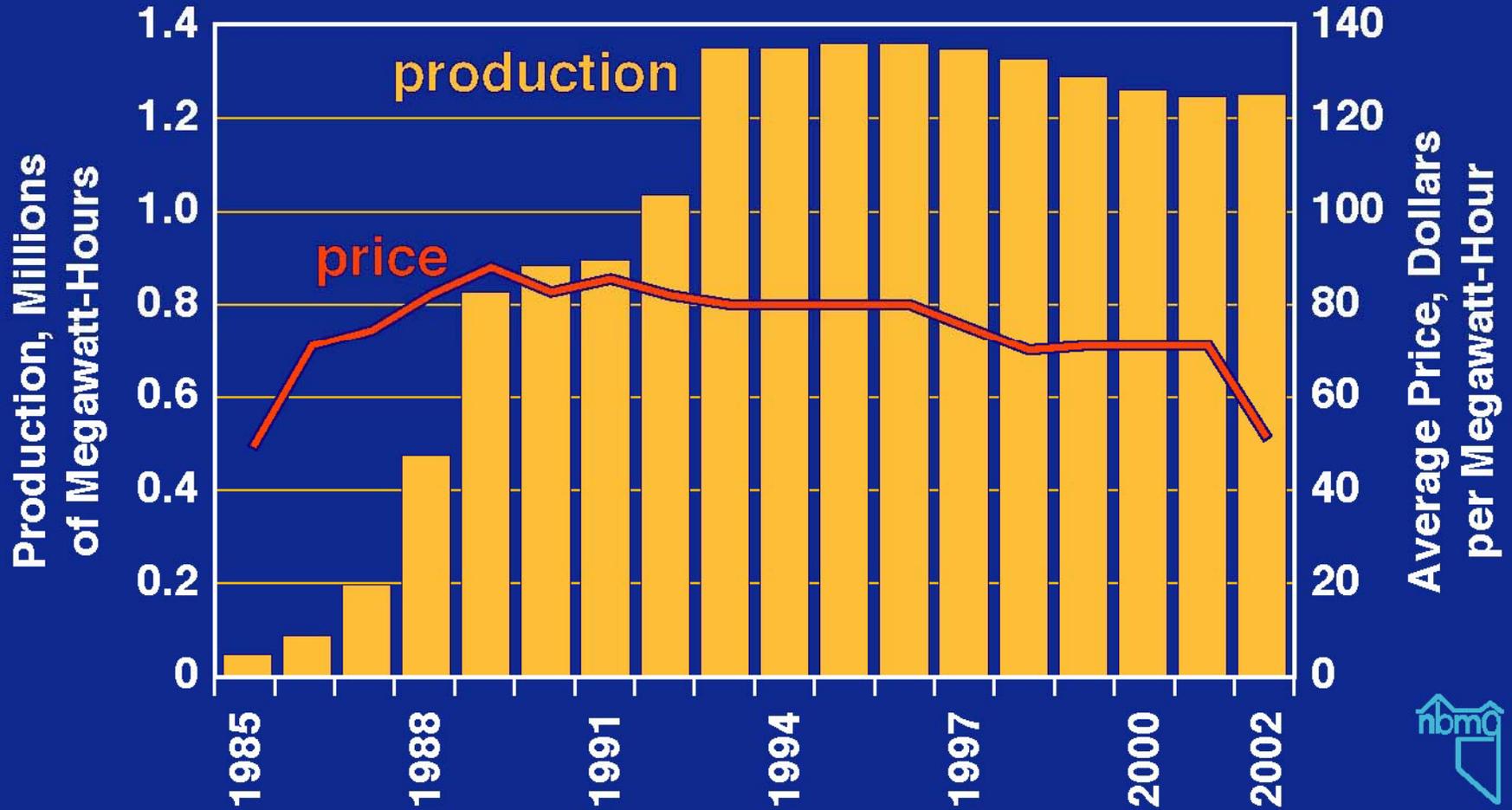
Nevada Population



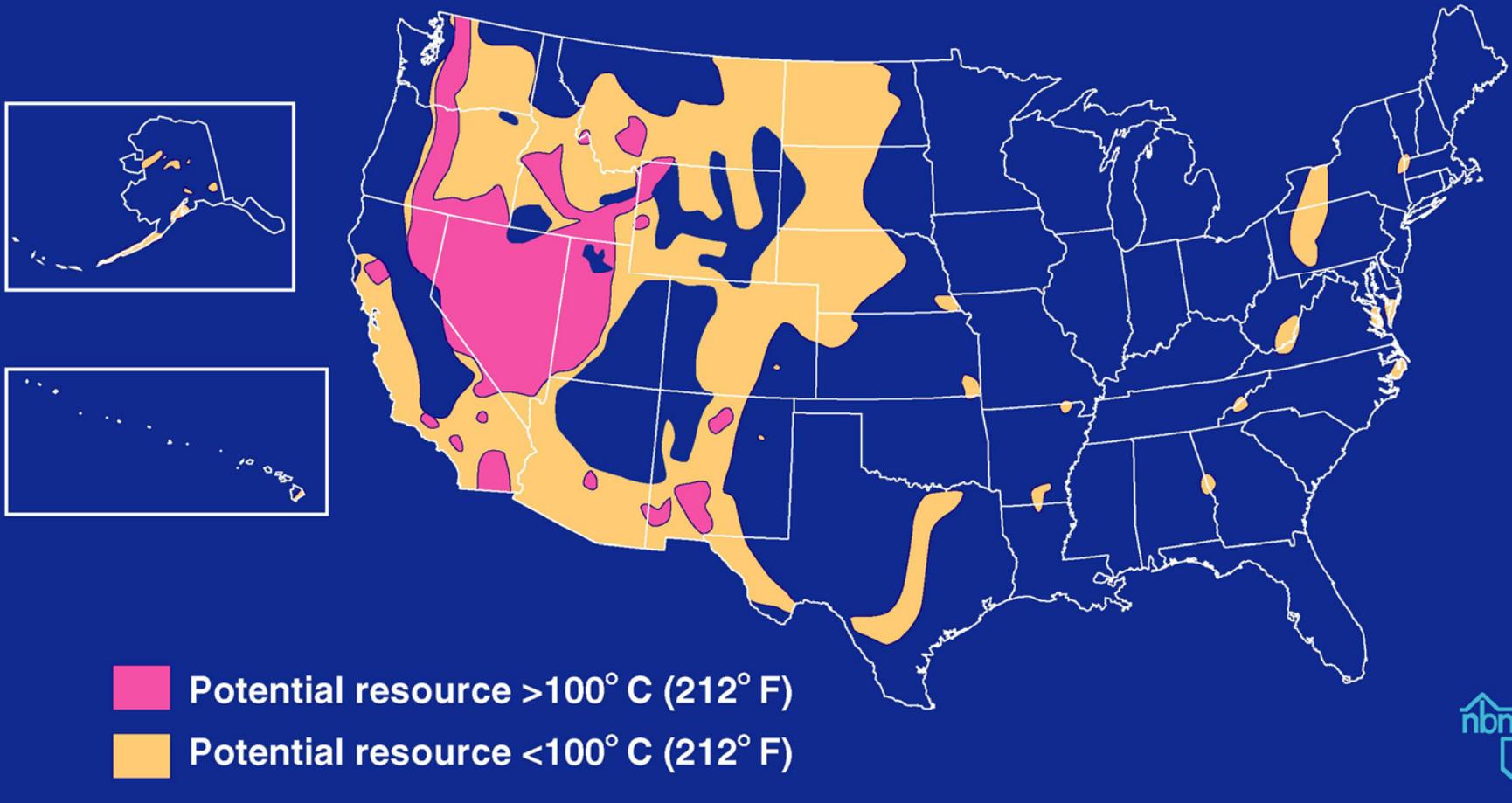
Nevada Aggregate



Nevada Geothermal Energy



Known and Potential Geothermal Resources



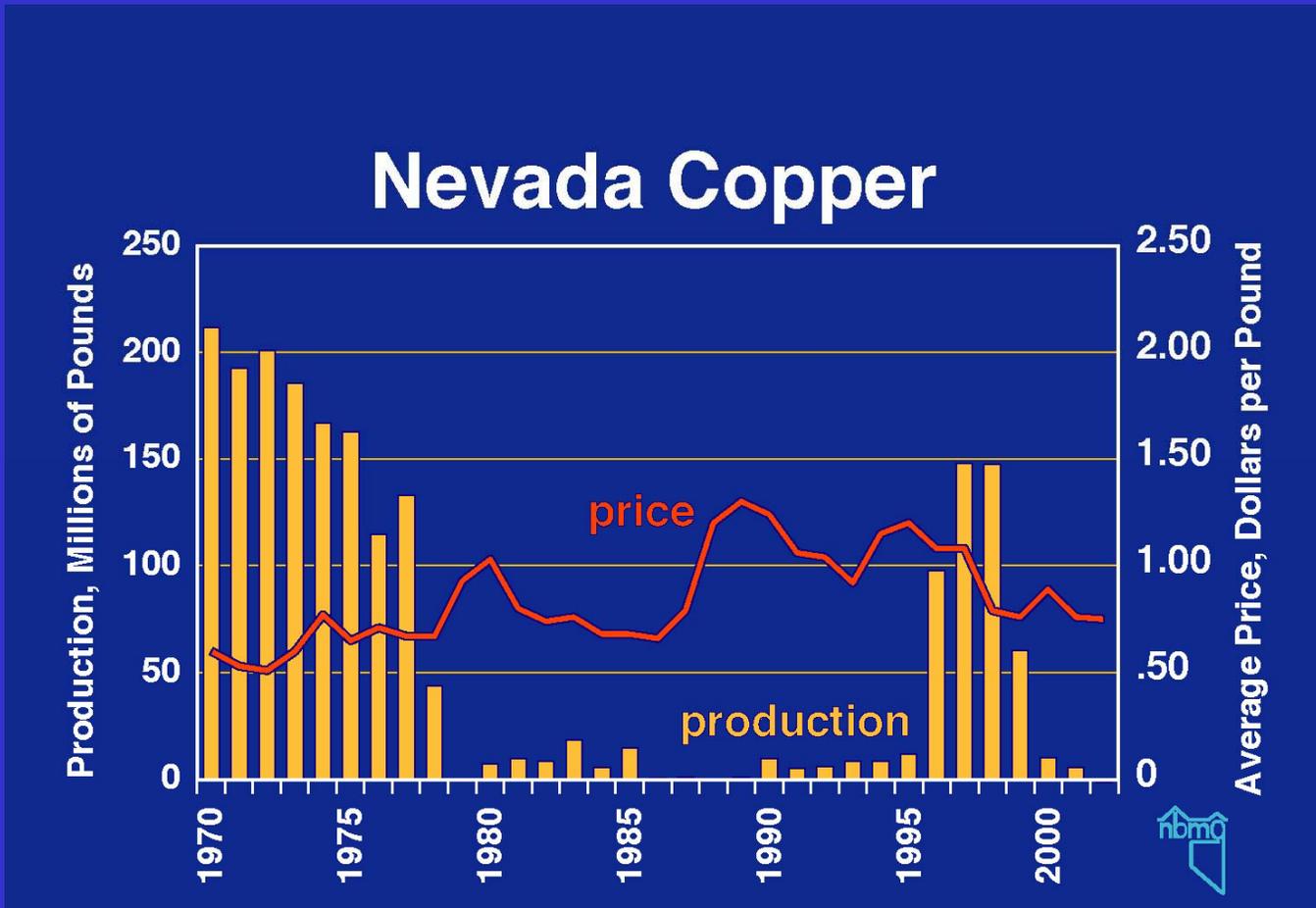
Compiled by the Energy and Geoscience Institute, University of Utah



Fly Ranch Geyser, Washoe County

NBMG Map 141 (\$16 or free at
www.nbmgs.unr.edu)

Equatorial Mining received a \$157 million judgement against Kvaerner US for damages as a result of misrepresentation and professional negligence regarding a feasibility study at the company's copper mine near Tonopah.

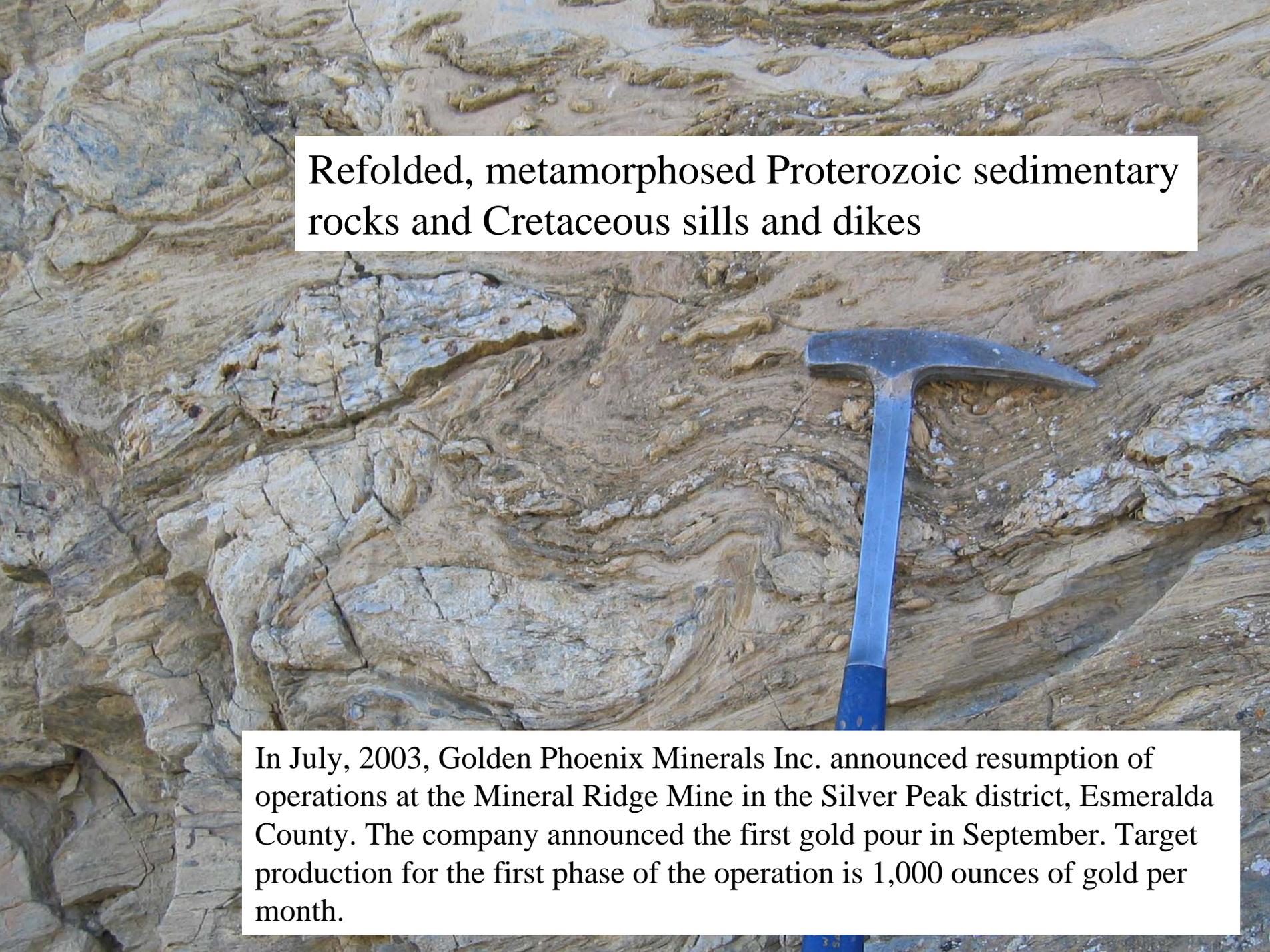


gently dipping quartz veins



GSN Field Trip - October 2003 – Mineral Ridge





Refolded, metamorphosed Proterozoic sedimentary rocks and Cretaceous sills and dikes

In July, 2003, Golden Phoenix Minerals Inc. announced resumption of operations at the Mineral Ridge Mine in the Silver Peak district, Esmeralda County. The company announced the first gold pour in September. Target production for the first phase of the operation is 1,000 ounces of gold per month.

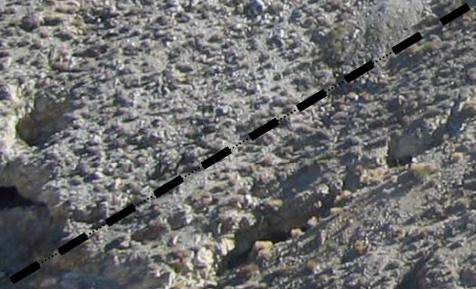


**Pre-ore-stage quartz-pyrite vein
with muscovite selvedge**



Gold-bearing calcite vein cutting Miocene dike

Li brine ponds, Clayton Valley



gently dipping quartz veins

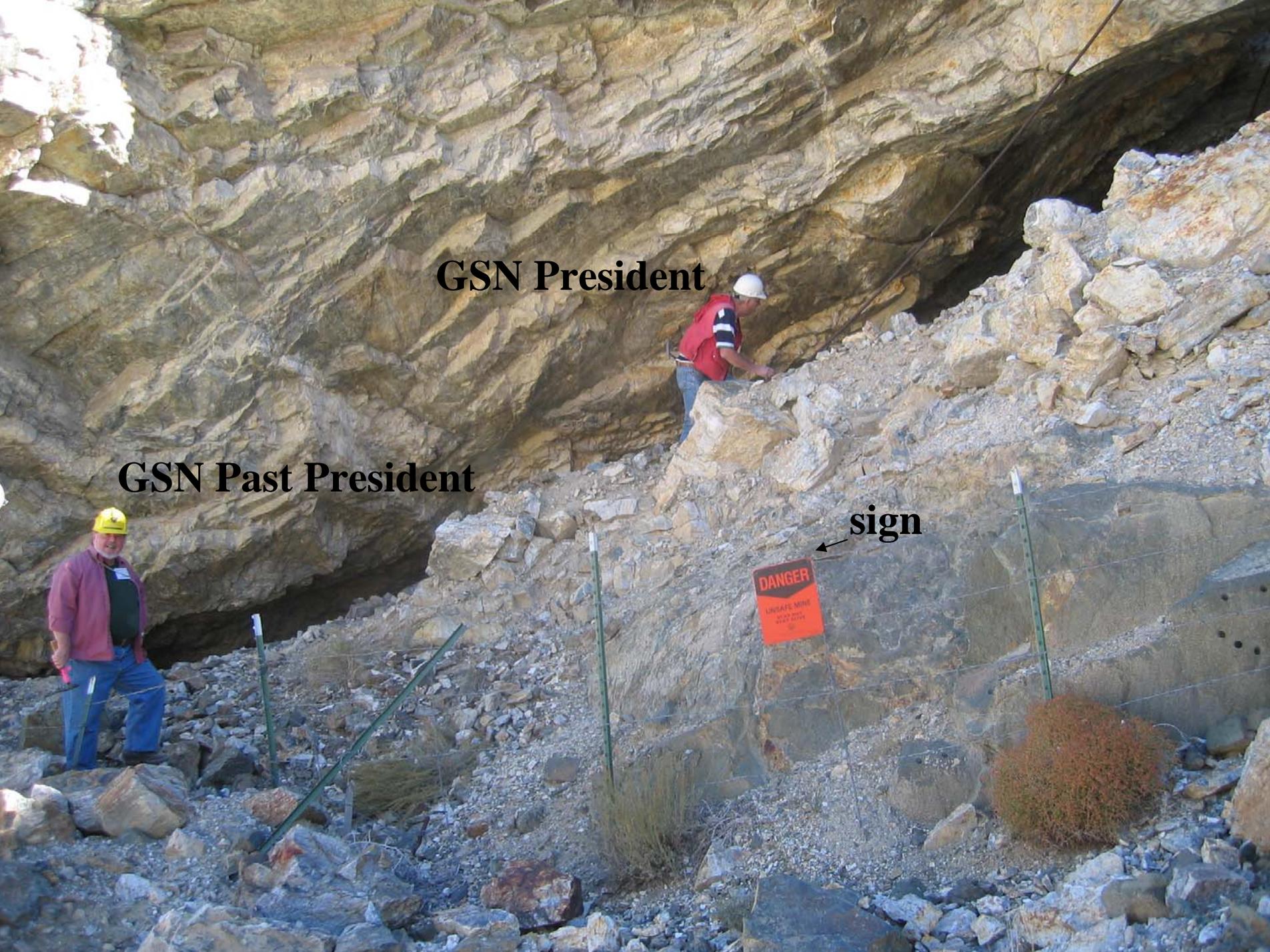


GSN President

GSN Past President

sign

DANGER
UNSAFE MINE
DO NOT ENTER

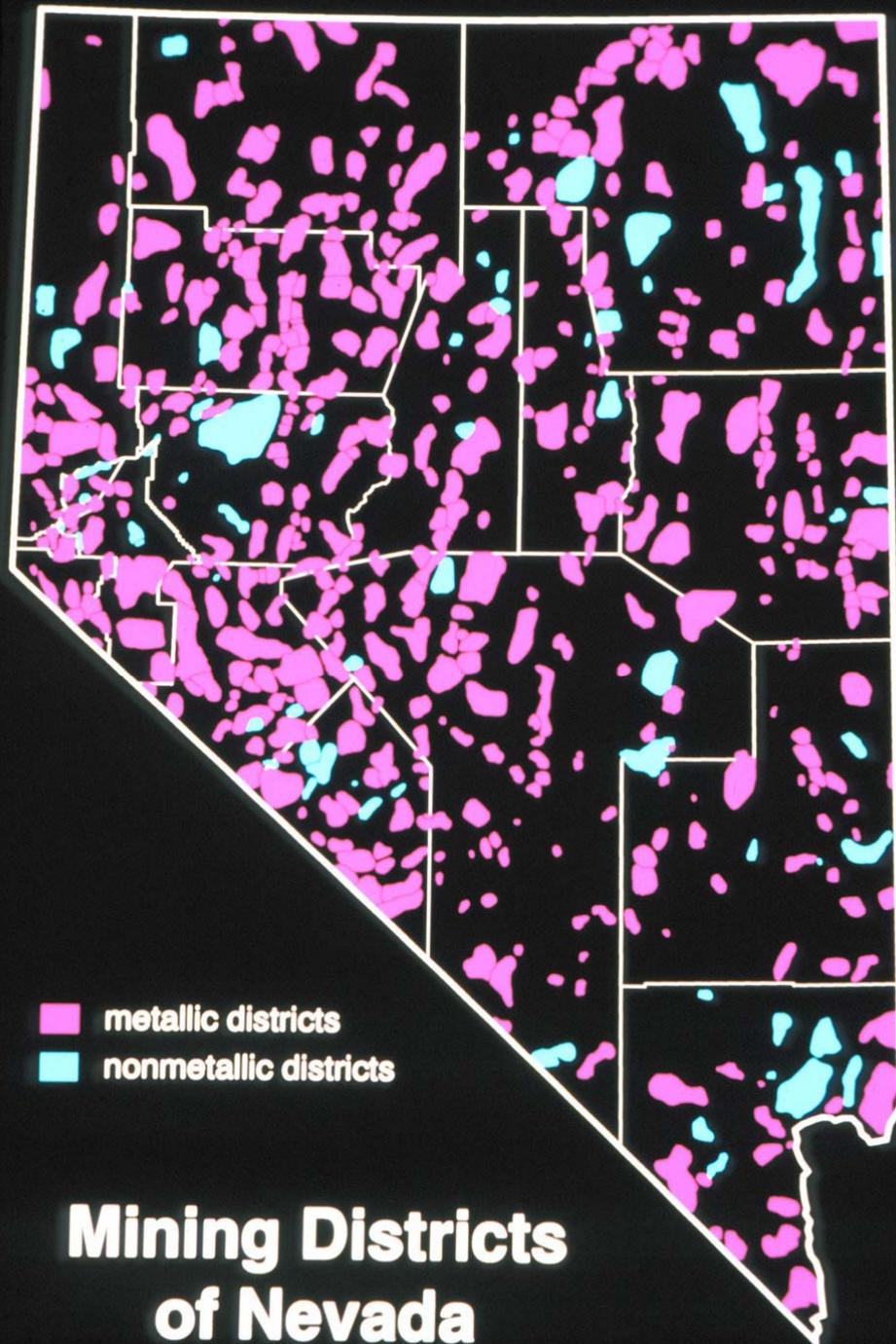


DANGER

UNSAFE MINE

STAY OUT
STAY ALIVE





**So far in 2003
exploration activity
has been reported in
63 of the 526 mining
districts in Nevada,
up from 55 in 2002
and 42 in 2001, but
still less than 92 in
2000 and 107 in
1999.**

DISCOVERIES

Glamis Gold Ltd.

- Terry Zone North (TZN)
 - Section 7 of the Marigold Mine
 - Additional \$1M authorized for exploration
 - Mineralization is deep but oxidized and above the water table
 - Amenable to run-of-mine heap leaching
 - Scoping study to be completed this year
- 
- A large red drilling rig is positioned on a hillside covered in sparse, dry vegetation. The rig is tilted upwards, and a worker in a green hard hat is visible near its base. The background shows a clear blue sky with scattered white clouds.



DISCOVERIES

Cortez Joint Venture

- “E.T. Blue” gold deposit in Horse Canyon “corridor”
- Cortez Hills gold deposit 7 miles from Pipeline
- Pediment deposit 800 m south of Cortez Hills
- Later two are in oxidized material
- Cortez Hills contains 4.5 M oz measured and indicated and 1 M oz inferred Au

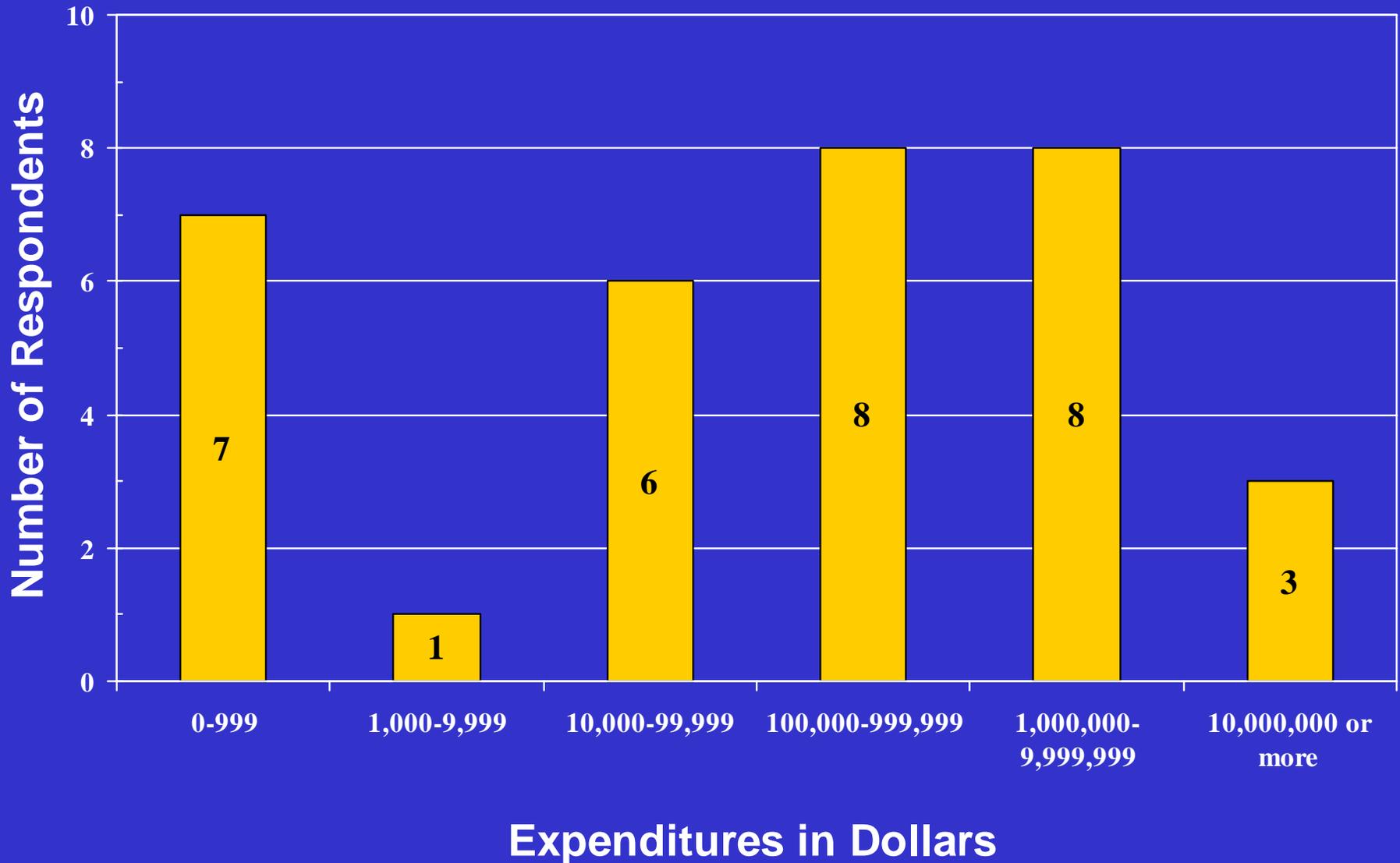
NEVADA EXPLORATION SURVEY 2002

- **NDOM ninth annual survey**
 - **Level of exploration activity**
 - **Factors influencing these levels**
- **Exploration and mining companies with projects or claims in Nevada**
- **33 respondents from 105 questionnaires**
 - **All exploring for precious metals**

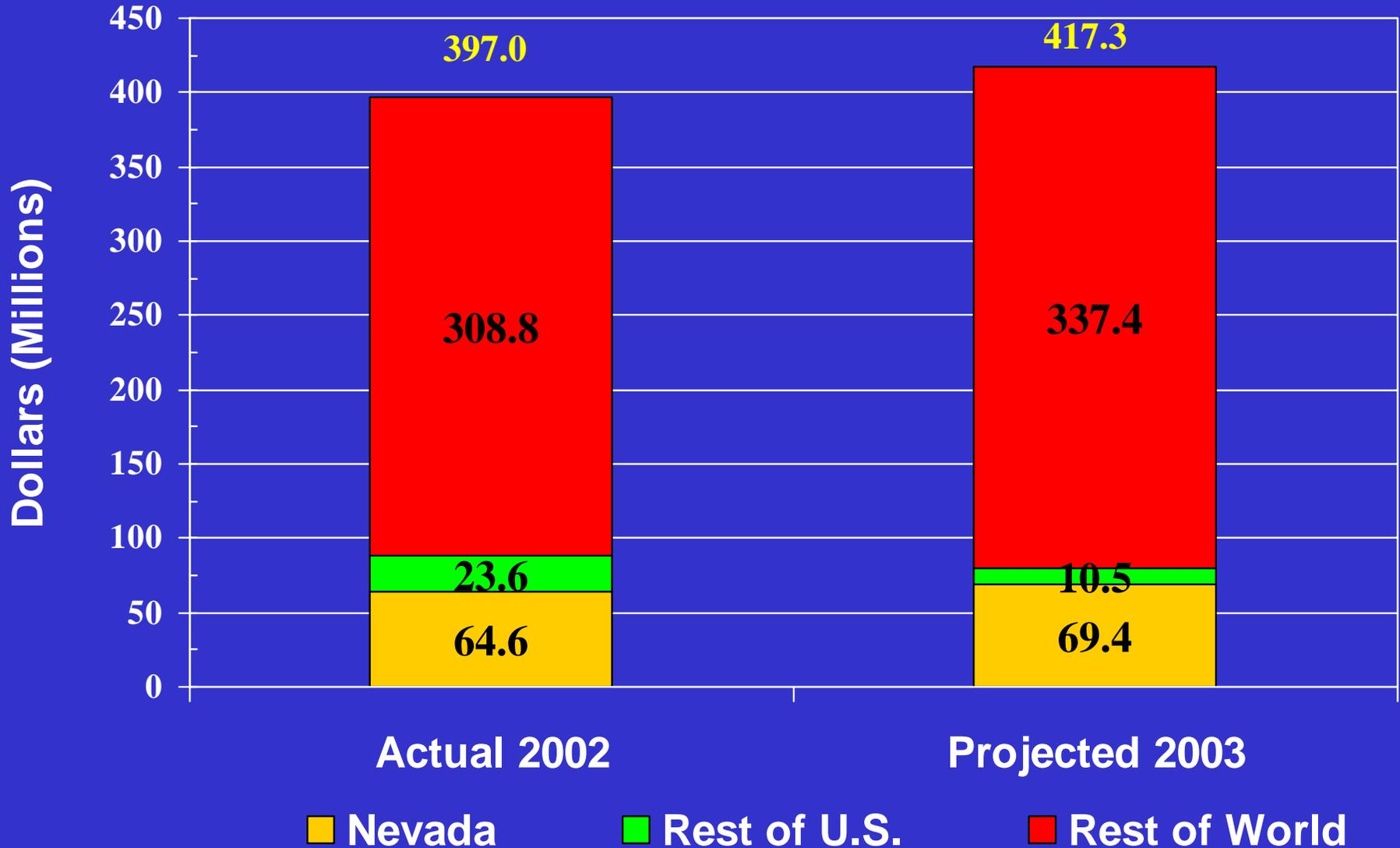
SURVEY TOPICS

- **Exploration expenditures**
- **Geologists employed**
- **Number of claims held**
- **Breakdown of exploration expenditures**
- **Factors influencing activity**
- **Type of reserve replacement**
- **Overall attitude toward exploration**

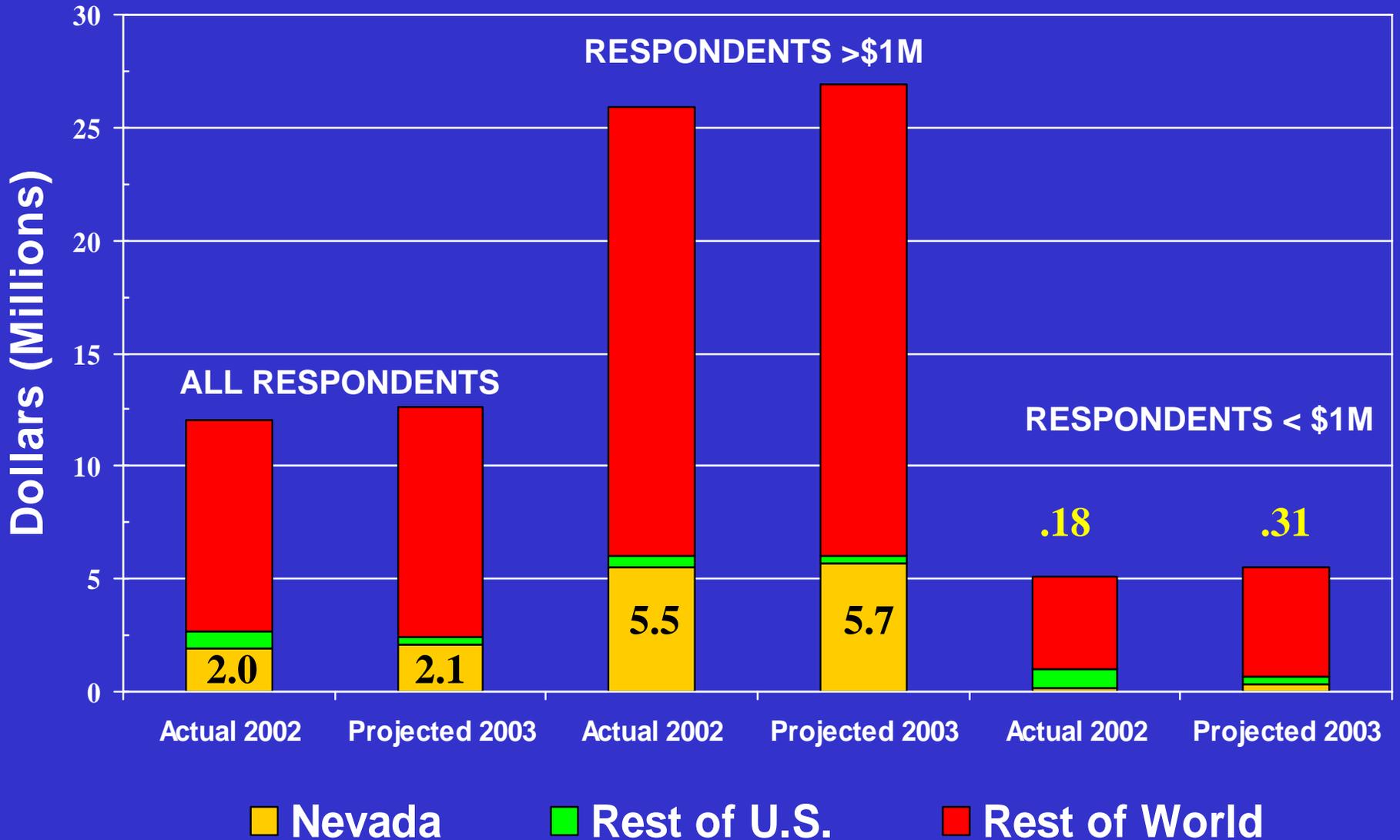
NEVADA EXPLORATION EXPENDITURES 2002



TOTAL EXPLORATION SPENDING 2002/2003

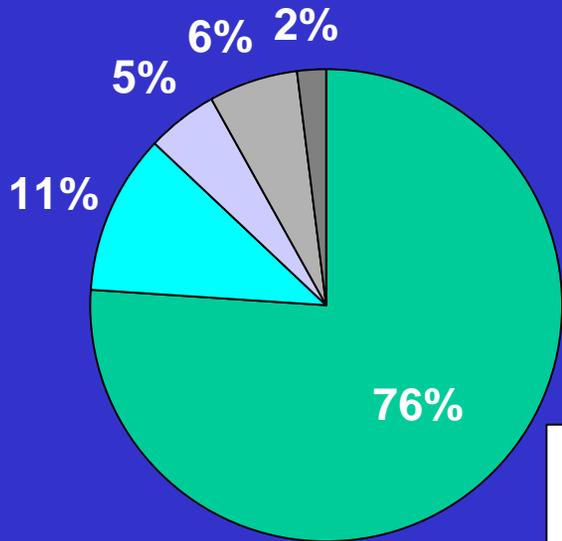
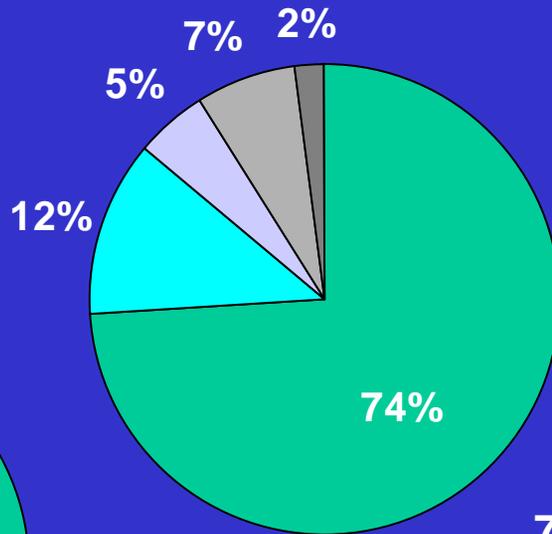


AVERAGE SPENDING 2002/2003

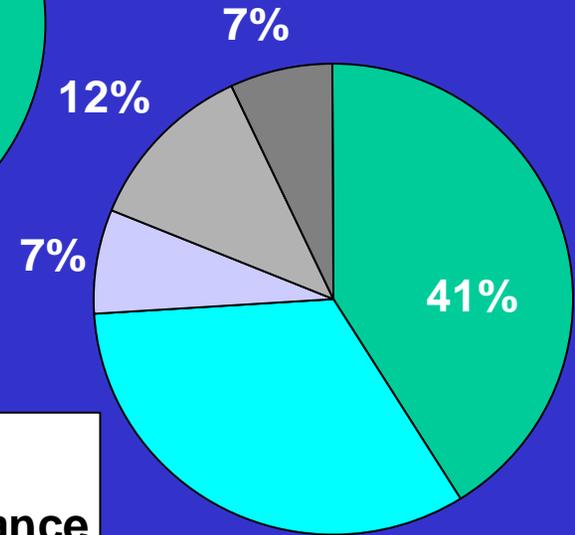


BREAKDOWN OF NEVADA EXPENSES 2002

ALL RESPONDENTS



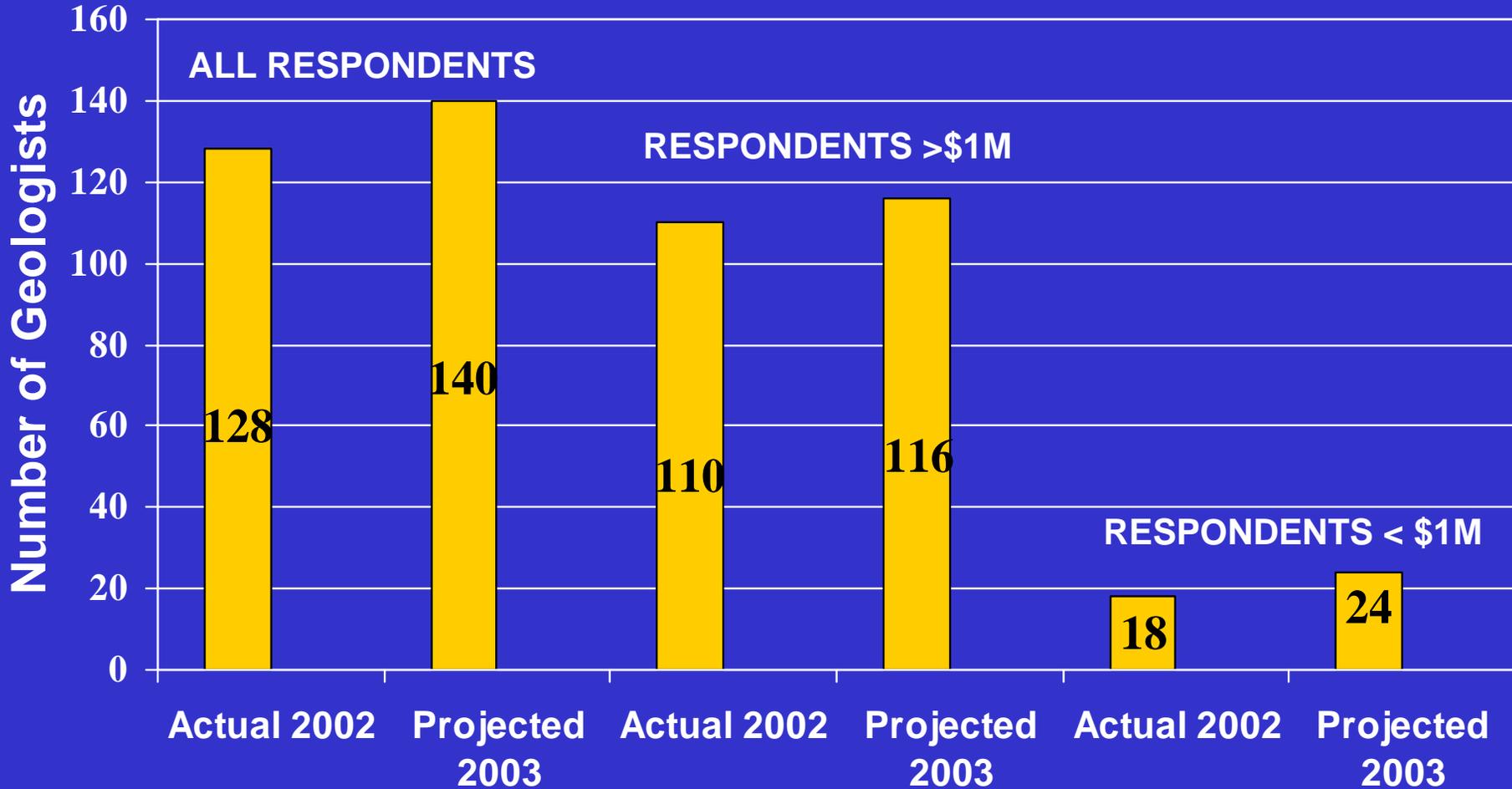
RESPONDENTS \geq \$1M



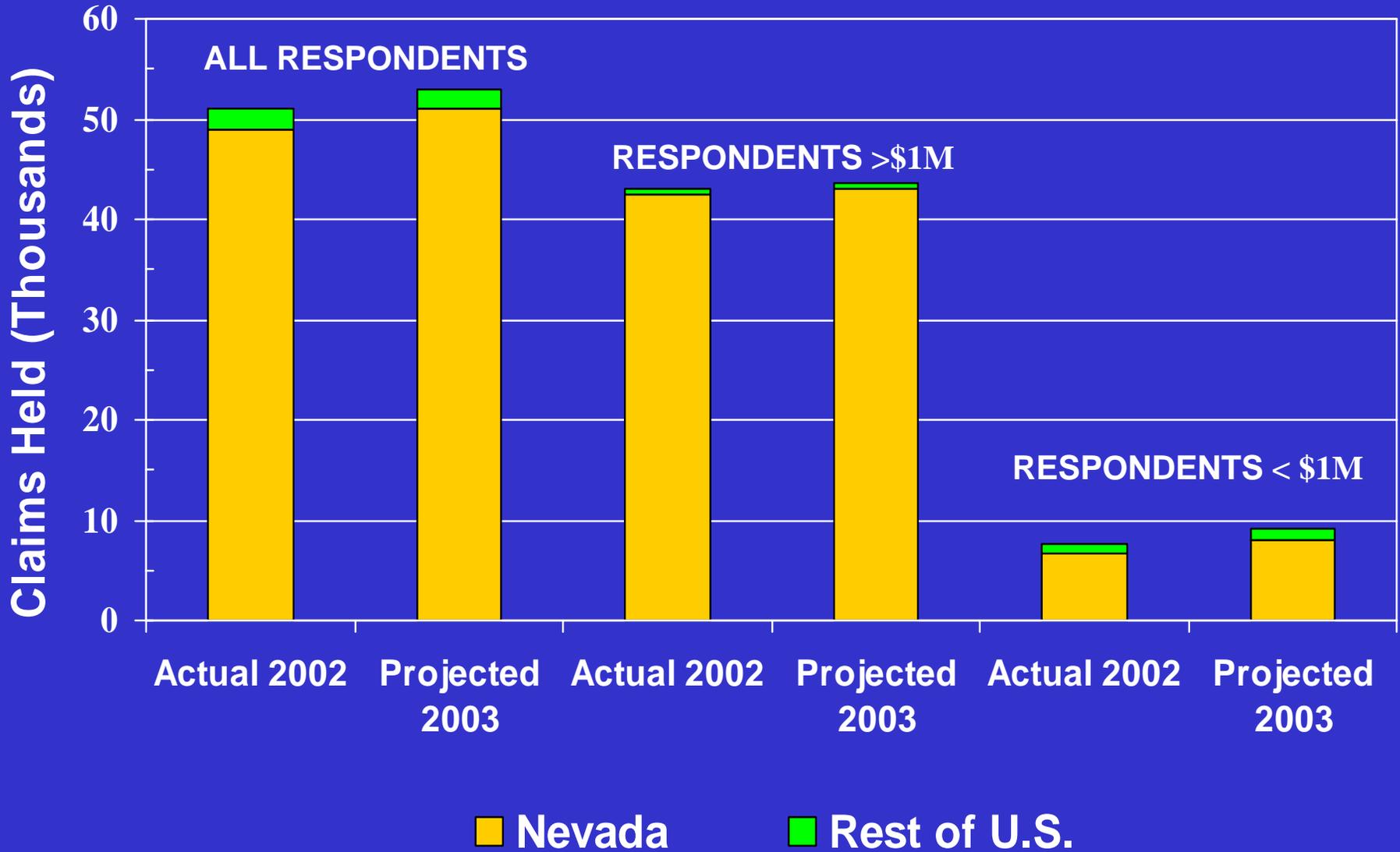
33%
RESPONDENTS $<$ \$1M



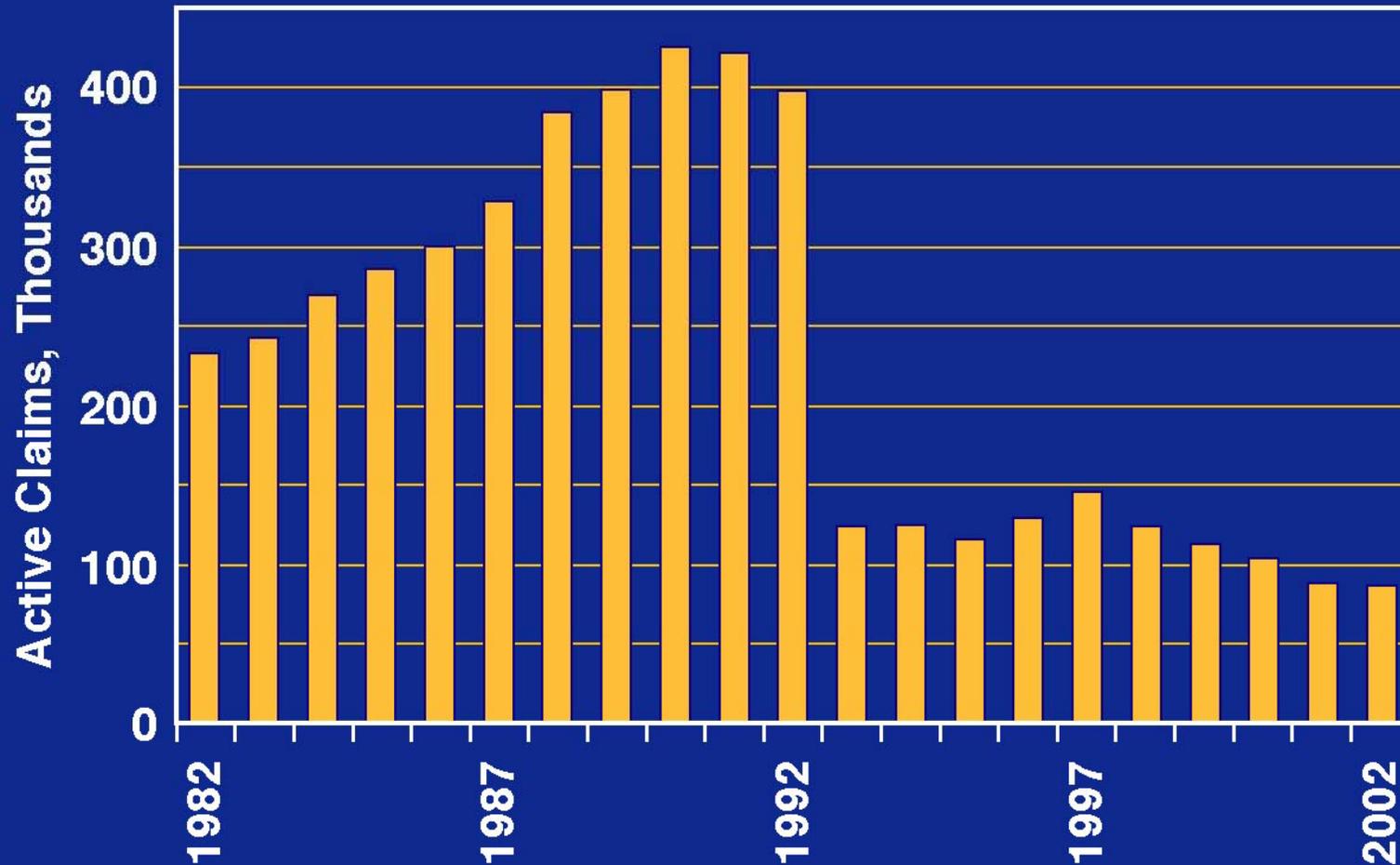
EXPLORATION GEOLOGISTS EMPLOYED IN NEVADA 2002/2003



NUMBER OF CLAIMS HELD 2002/2003



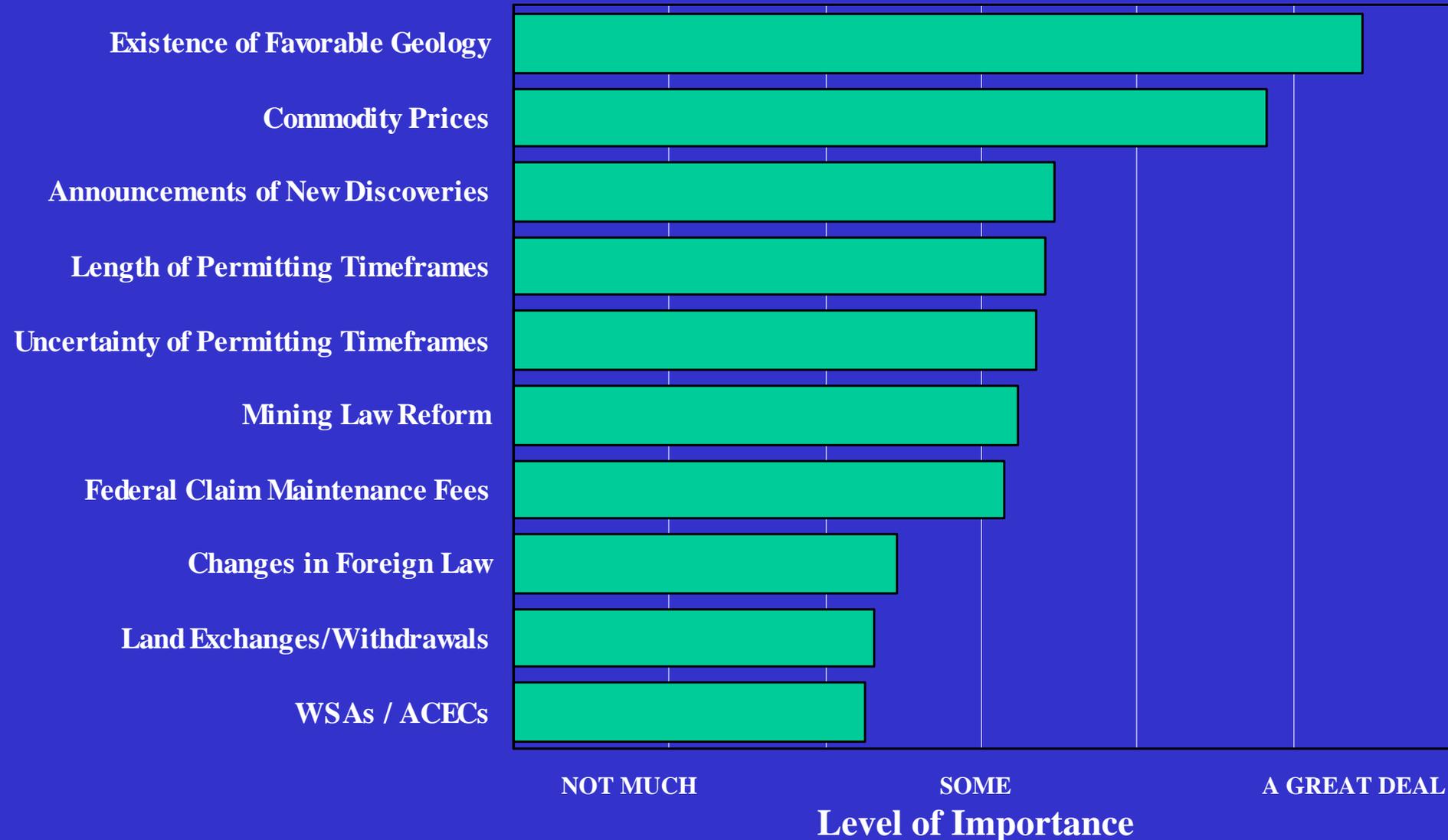
Active Claims in Nevada



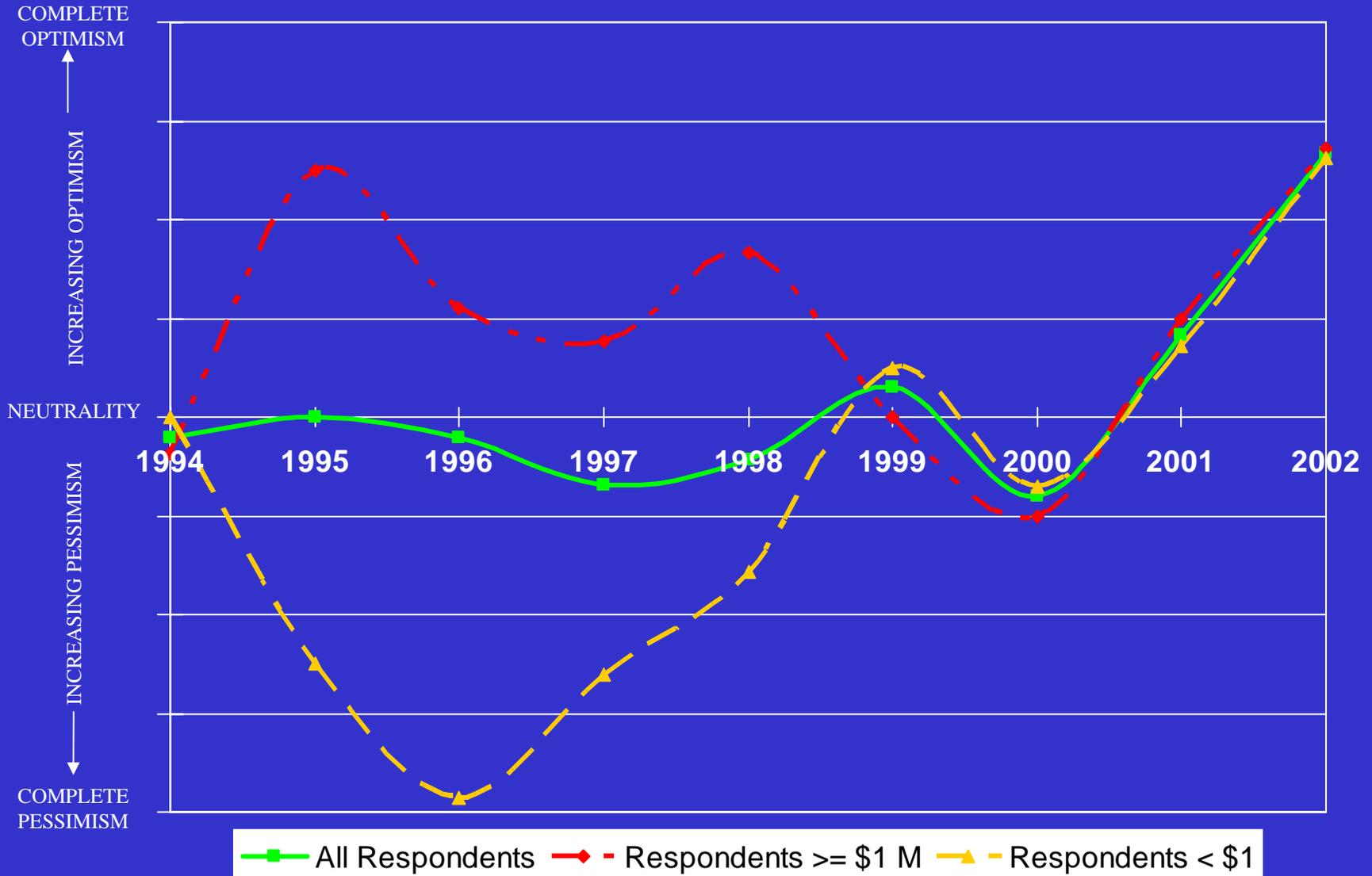
10,489 new claims were filed in Nevada in 2003, compared with 4,472 in the same period in 2002 – an increase of 135%.

FACTORS INFLUENCING ACTIVITY 2002

ALL RESPONDENTS



OPTIMISM INDEX 1994-2002

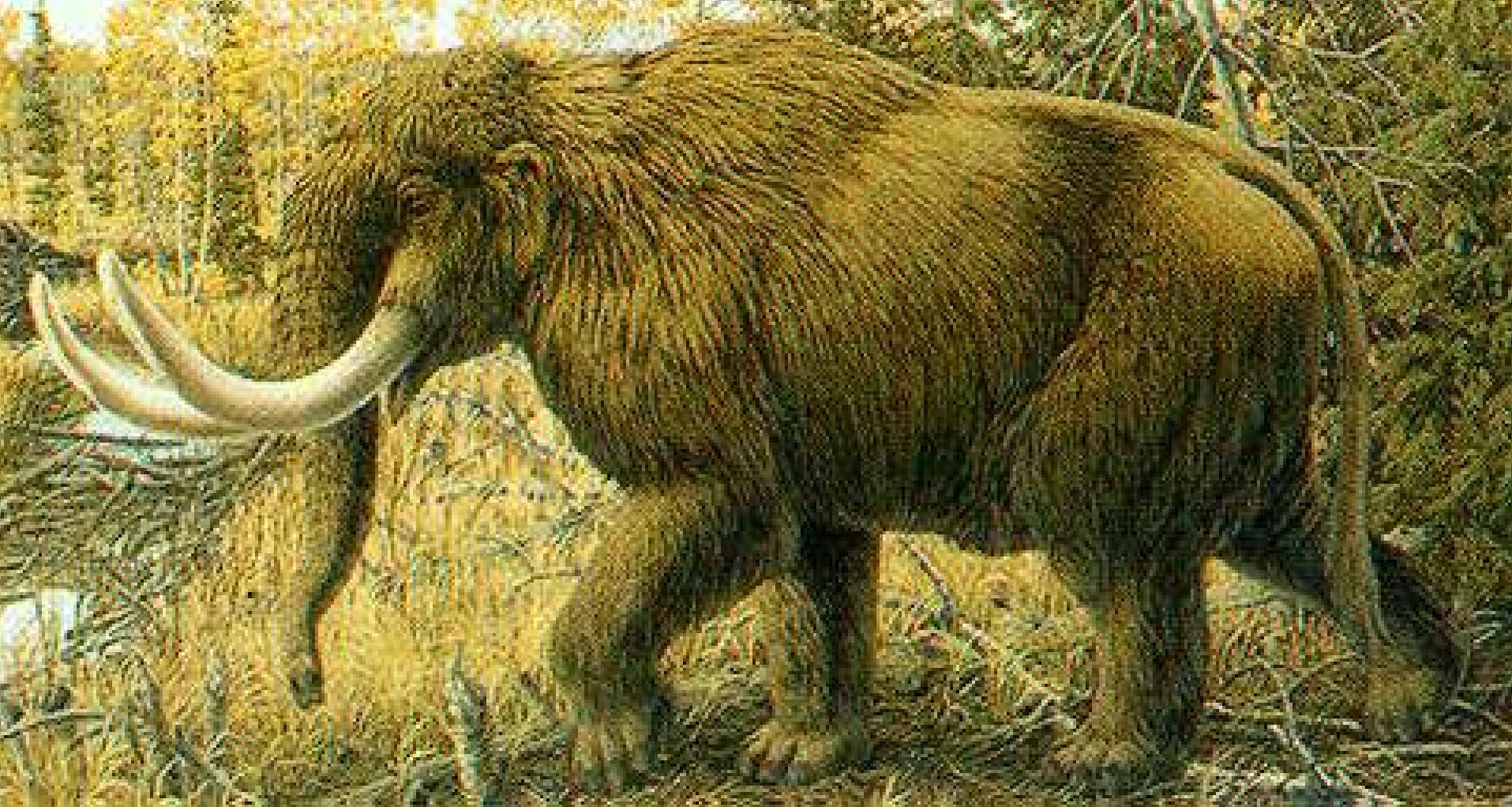


SUMMARY

- **Higher spending and employment and more new claims filed in 2002 than in 2001**
- **Nevada exploration expenditures projected to increase 7% from \$64.6 M to \$69.4 M**
- **Worldwide exploration to increase 5% from \$397.0 M to \$417.3 M**
- **Exploration geologists employed in Nevada to rise from 128 to 140**

SUMMARY

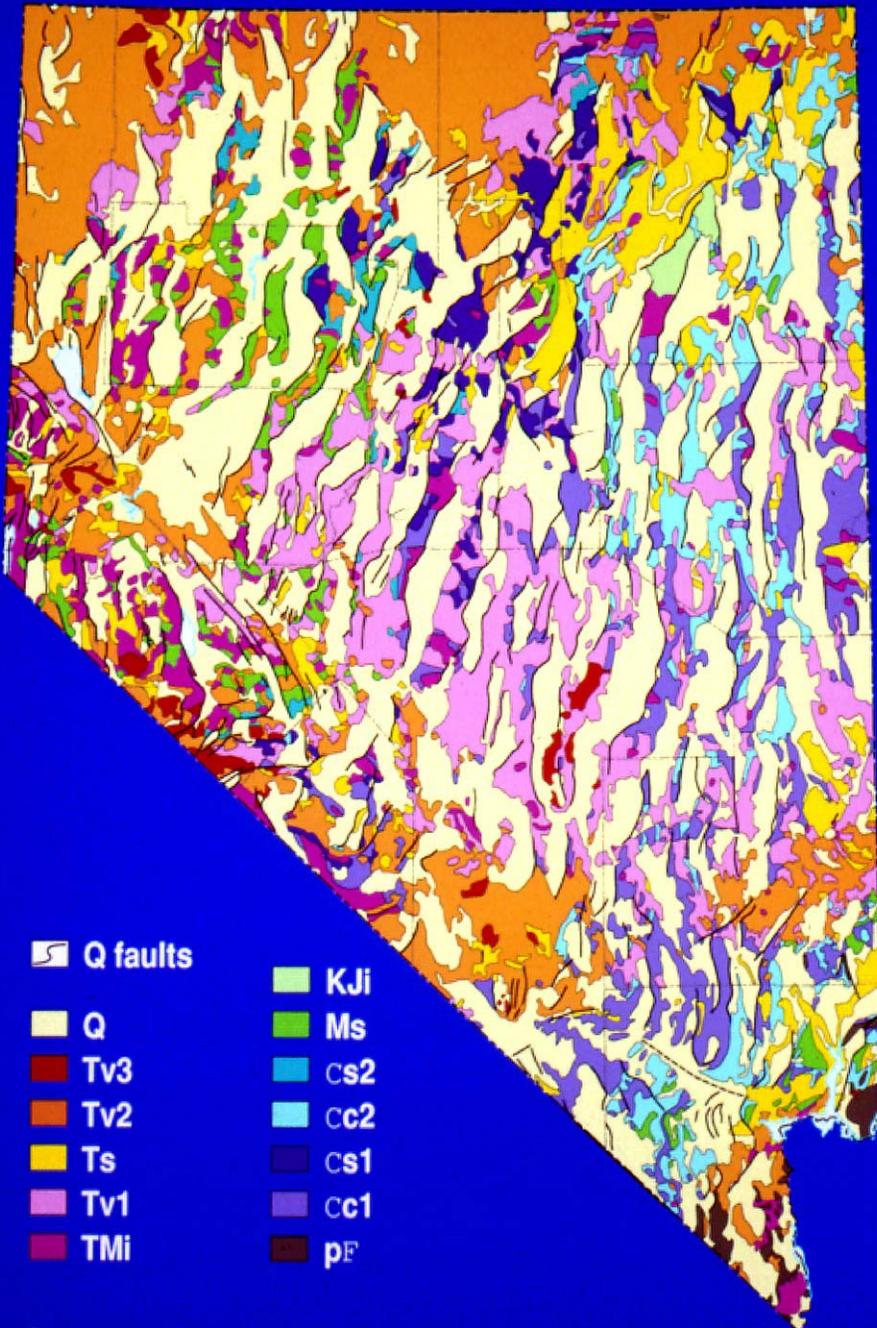
- **74% of budgets spent on direct exploration expenditures**
- **Number of claims held in Nevada has stabilized at 89,000**
- **Most important factors influencing activity continue to be favorable geology and commodity prices**
- **Domestic exploration - 65% optimistic, 19% neutral, and 16% pessimistic**



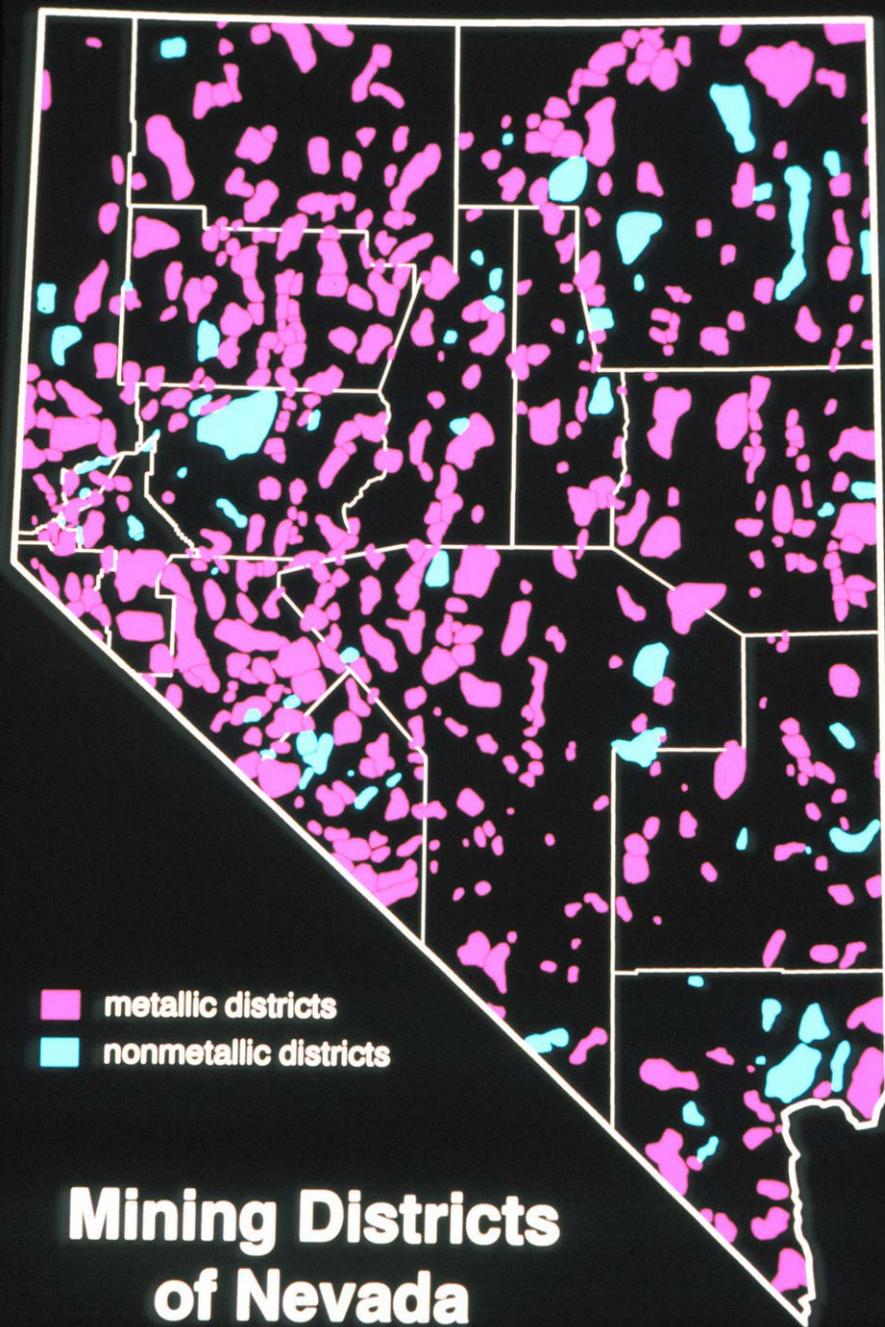
**Nevada is a great place in which to explore
for and mine gold, silver, and other
mineral commodities**

Ten Top Reasons to Explore in Nevada

1. Great geology and potential
2. Many large producing mines, including high-grade, underground mines
3. Mines operated by the leading international companies



Generalized Geologic Map of Nevada



4. Regulatory system with recent examples of rapid permitting and recent changes that favor mining

5. Excellent infrastructure (roads, drillers, supplies, assayers, hotels, etc.)

6. Large areas open to exploration on BLM lands



7. Dry climate and year-round access in many areas
8. Network of knowledgeable exploration geologists, organizations, and agencies (Geological Society of Nevada, Nevada Mining Association, Nevada Division of Minerals, Nevada Bureau of Mines & Geology, Ralph J. Roberts Center for Research in Economic Geology and other units of the Mackay School of Earth Sciences and Engineering, **building on the tradition of the Mackay School of Mines**)
9. Recent discoveries and new mines

Ten Top Reasons to Explore in Nevada (continued)

10. No malaria, black flies, moose, polar bears, or crocodiles (just elephants).

