UPDATE ON NEVADA MINERAL PRODUCTION AND EXPLORATION



Alan R. Coyner Nevada Division of Minerals (minerals.state.nv.us)



With contributions by Jonathan G. Price Nevada Bureau of Mines and Geology (www.nbmg.unr.edu)

Photo credits to Mike Visher, Jeff Scovil, Jonathan Price, and others

THE MAIN POINT

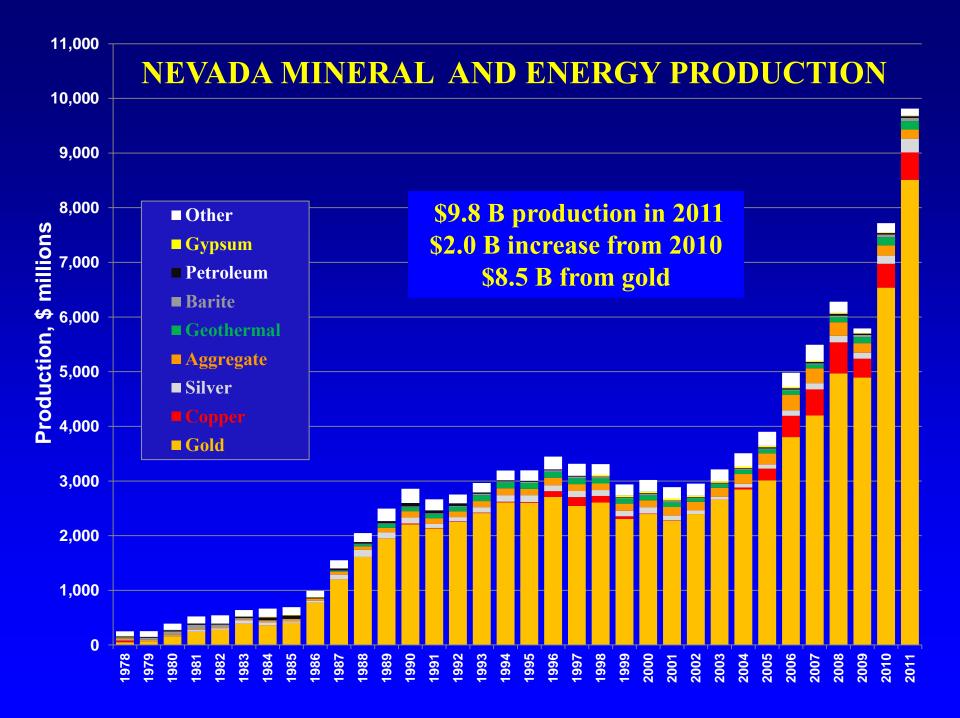


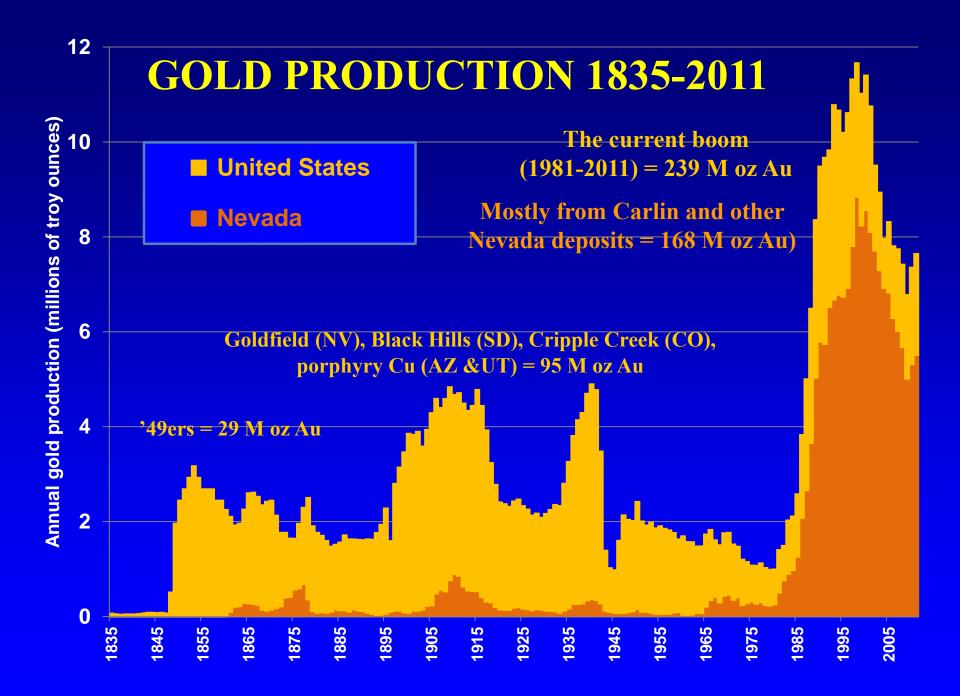
NEVADA MINING INFO

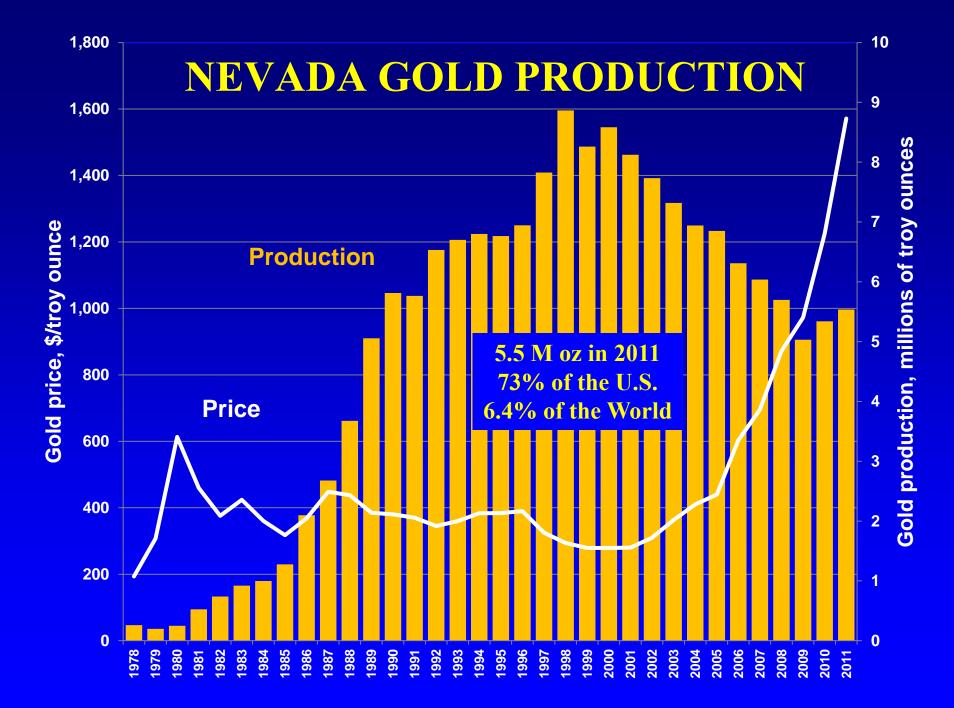
- Major Mines of Nevada

 NDOM (http://minerals.state.nv.us)
- Nevada Exploration Survey
 NDOM and NBMG
- The Nevada Mineral Industry

 NBMG (www.nbmg.unr.edu)
- Economic Overview of the Nevada Mining Industry
 - NvMA (www.nevadamining.org)







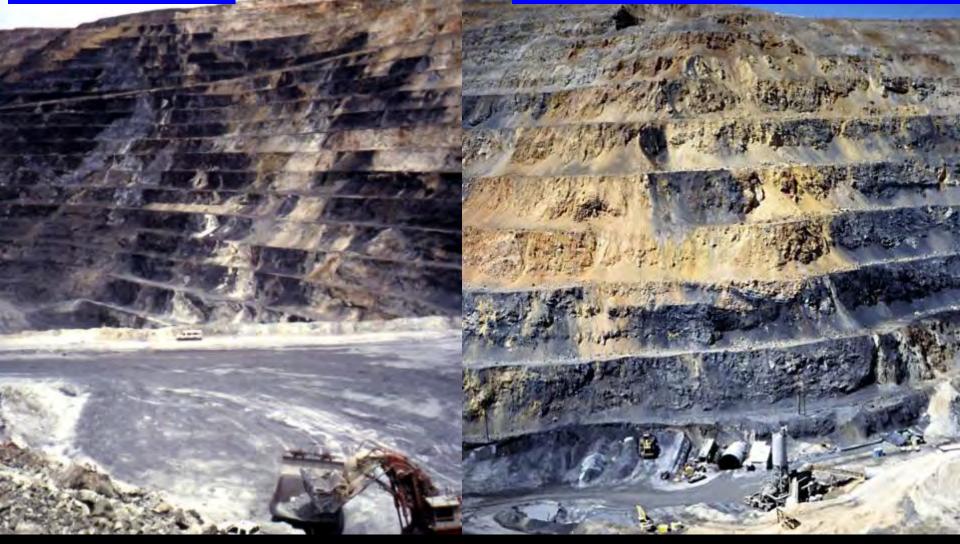
NEVADA VS. THE WORLD 2011

	Country	Gold Production (metric tons)
1	China	355
2	Australia	270
3	United States	237
4	Russia	200
5	South Africa	190
6	NEVADA	172
7	Peru	150
	WORLD	2,700

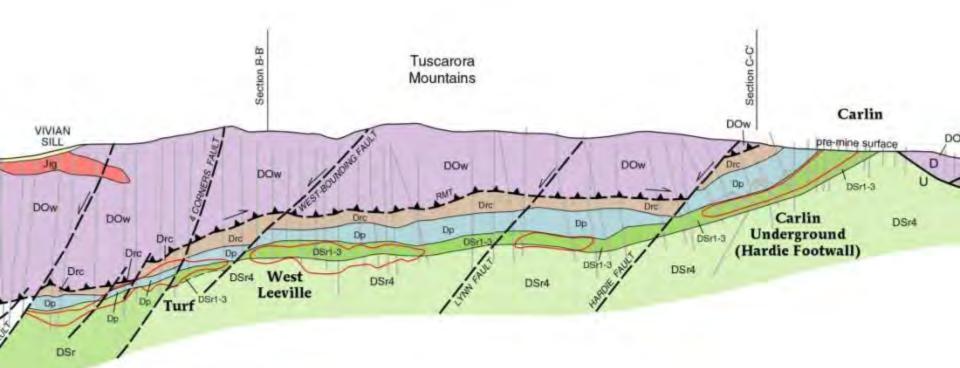
Data from USGS Mineral Commodity Summary 2012

Barrick's Betze pit

Newmont's Carlin East pit and portal



Global gold production in 2011 (2,700 metric tons) exceeded the cumulative production from the Carlin trend (2,436 tons). The world mines the equivalent of a Carlin trend every year.



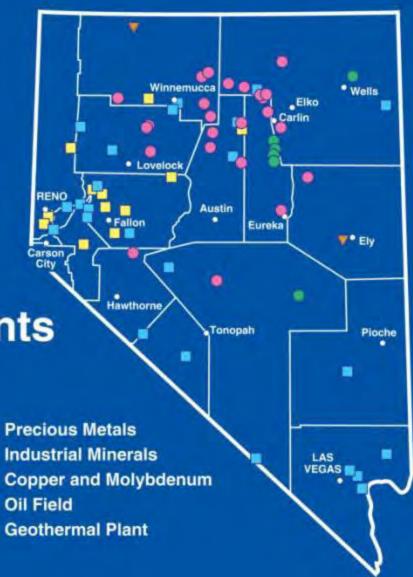
By the end of 2011, the Carlin trend had produced a total of 78.3 million ounces of gold (2,436 tonnes). If production levels hold, the trend will produce a cumulative amount of 100 million ounces by 2022.

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.nbmg.unr.edu)

23 major gold operations (9 not on the Carlin trend with production >100,000 ounces in 2011)

Major Mines, Oil Fields, and Geothermal Plants

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NEVADA'S TOP GOLD PRODUCERS 2011

OPERATION	PRODUCTION (oz)
Barrick Cortez	1,421,039
Barrick Goldstrike	1,000,883
Newmont Carlin Operations	917,973
Newmont Twin Creeks	484,449
Barrick/Kinross Round Mountain	360,020
Newmont Phoenix	205,658
Barrick/Newmont Turquoise Ridge	178,283

BARRICK CORTEZ

Cortez Hills OP

Barrick Cortez mined 1,421,039 oz Au in 2011 (1,119,910 OP and 301,129 UG) Cortez property reserve is 14.488 M oz at 0.047 oz/ton (proven and probable)



BARRICK GOLDSTRIKE



Gold	2011 Production	Cumulative Production	Reserve (P&P)	Reserve Grade
Betze-Post	721,534 oz	30.0 M oz	9,342,000 oz	0.096 oz/ton
Meikle	279,349 oz	8.5 M oz	3,035,000 oz	0.255 oz/ton
Total	1,000,883 oz	38.5 M oz	12,377,000 oz	0.113 oz/ton

NEWMONT CARLIN OPERATIONS



Gold	2011 Production	Cumulative Production	Reserve (P&P)	Reserve Grade
Open Pits	? oz	? M oz	12,620,000 oz	0.038 oz/ton
Underground	? oz	? M oz	5,090,000 oz	0.282 oz/ton
Total	917,973 oz	43,714,34 oz	17,710,000 oz	0.051 oz/ton

NEWMONT TWIN CREEKS



	2011	Cumulative		
Gold	Production	Production	(P&P)	Grade
Open Pit	484,449 oz	11,766,443 oz	3,780,000 oz	0.078 oz/ton

BARRICK/KINROSS ROUND MOUNTAIN 50% 50%



	2011	Cumulative	Reserve	Reserve
Gold	Production	Production	(P&P)	Grade
Open Pit	360,020 oz	13 M oz ?	2,822,000 oz	0.017 oz/ton

NEWMONT PHOENIX



Gold	2011 Production	Cumulative Production		Reserve Grade
Open Pit	205,658 oz	1,062,498 oz	7,250,000 oz	0.016 oz/ton

BARRICK/NEWMONT TURQUOISE RIDGE 75% 25%



	2011	Cumulative	Reserve	Reserve
Gold	Production	Production	(P&P)	Grade
Underground	178,283 oz	1,541,392 oz	7,059,000 oz	0.442 oz/ton

TOP UNDERGROUND GOLD PRODUCERS



Barrick's Cortez Hills Underground surpassed Barrick Goldstrike's Meikle as the top underground gold producer in 2011

> Cortez Hills 301,129 oz

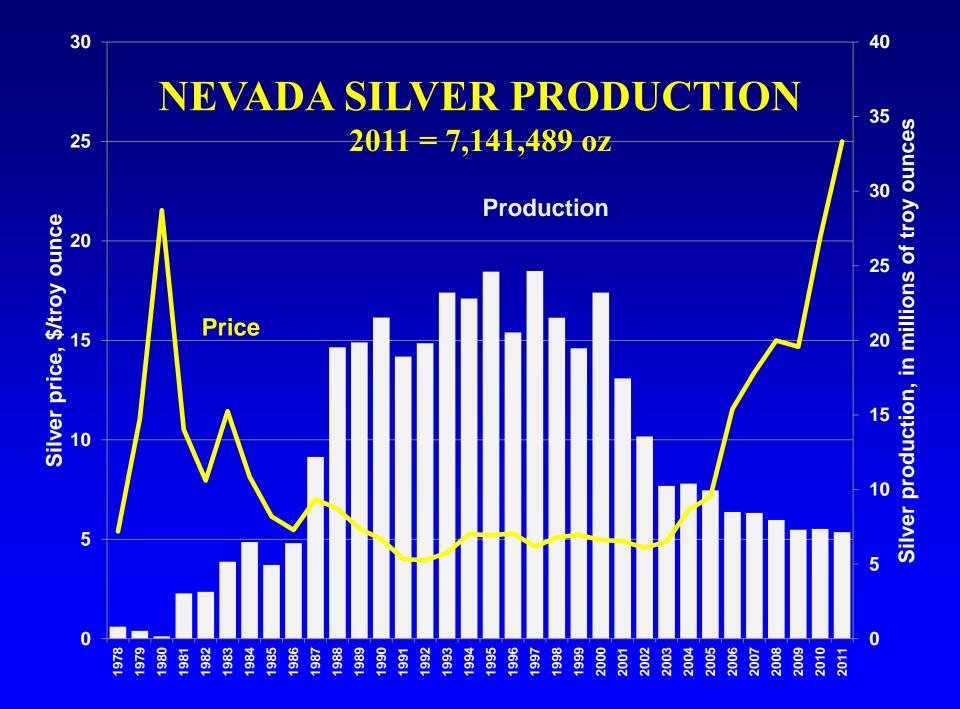
Meikle 279,349 oz

OTHER NEVADA GOLD PRODUCERS 2011

OPERATION	PRODUCTION (oz)
Goldcorp/Barrick Marigold	153,471
Barrick Homestake Ruby Hill	127,089
Newmont Midas	111,476
Allied Nevada Hycroft	104,002
Barrick Bald Mountain	92,818
Rodeo Creek Hollister	86,518
Barrick Goldstrike Storm	86,508
Jipangu Florida Canyon/Standard	41,161
KGHM International Robinson	31,969
Rawhide Mining Denton-Rawhide	24,828



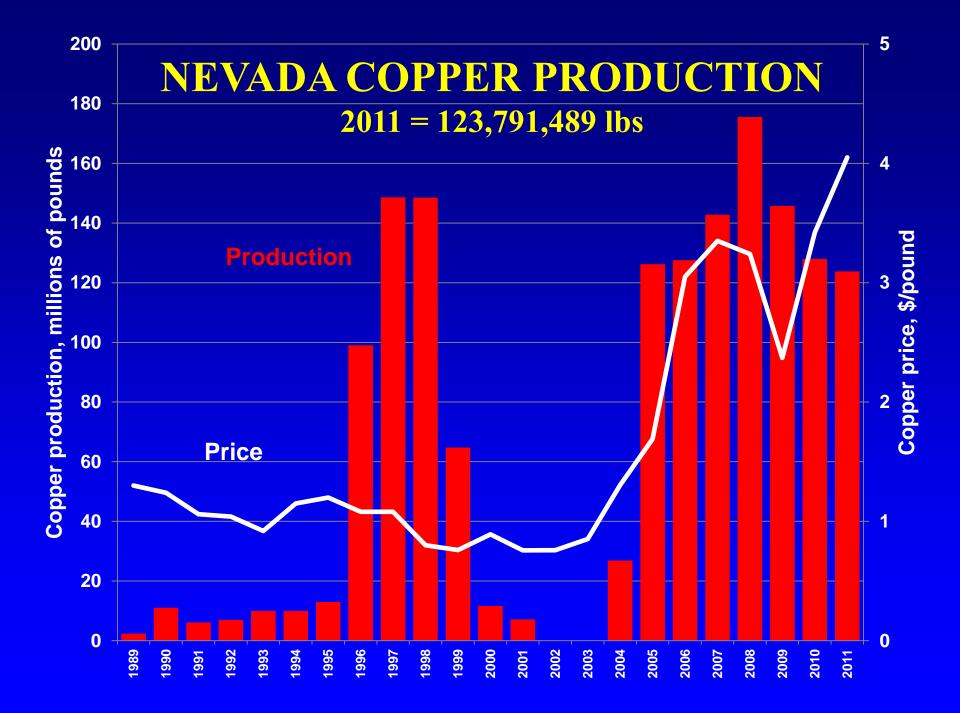
"Forget gold. Strategic metals are where it's at."



NEVADA'S TOP SILVER PRODUCERS 2011



Silver	2011 Production	Cumulative Production	Reserve (P&P)	Reserve Grade
Newmont Midas	1,512,287 oz	19,619,277 oz	5.3 M oz	7.201 oz/ton
Coeur Rochester	1,392,433 oz	133,795,827 oz	29.6 M oz	0.630 oz/ton
Newmont Phoenix	1,152,312 oz	5,036,330 oz	110.0 M oz	0.244 oz/ton



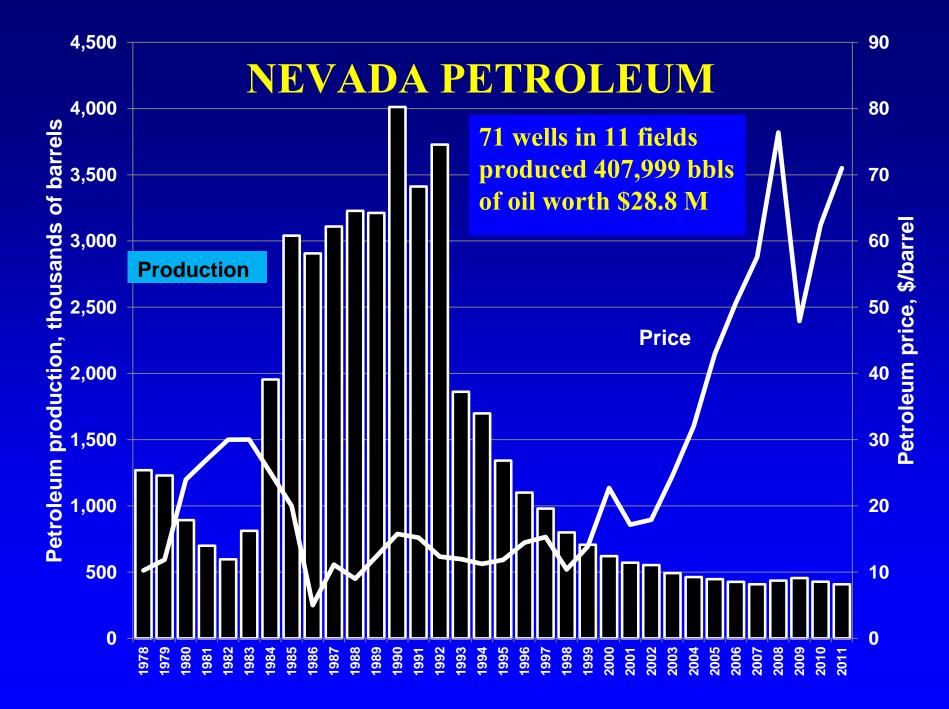
NEVADA'S COPPER PRODUCERS 2011

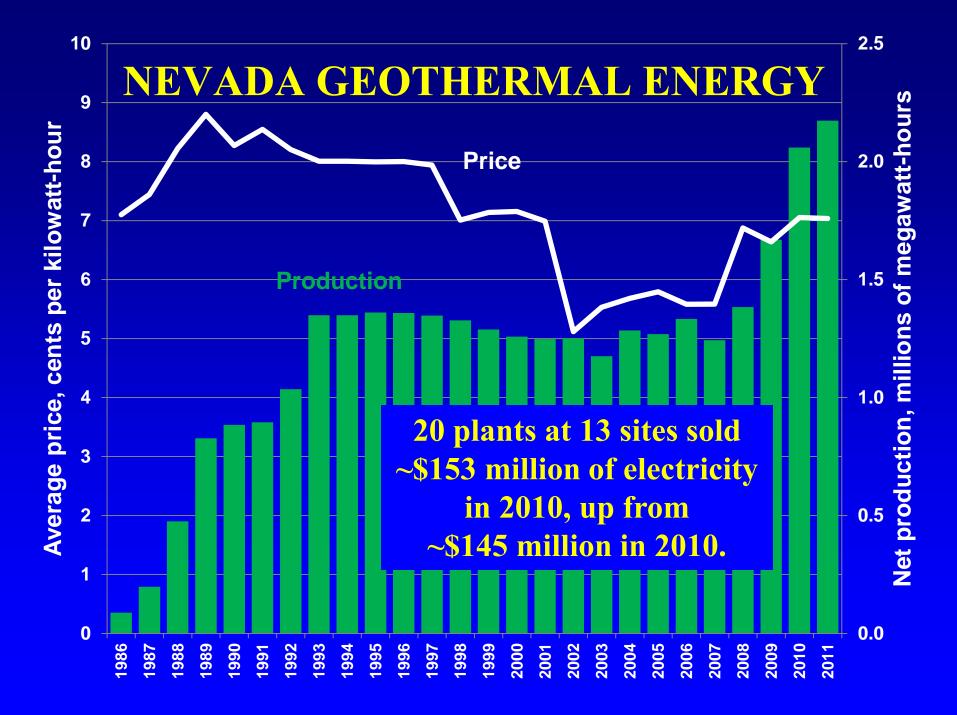


Copper	2011 Production	Cumulative Production	Reserve (P&P)	Reserve Grade
KGHM Robinson	99,893,372 lbs Cu	? M lbs	4.728 B lbs	N/A
Newmont Phoenix	23,897,865 lbs Cu	99,537,082 lbs	1.640 B lbs	0.18%

OTHER NEVADA MINERAL PRODUCTION

- Nevada led the nation in nonfuel mineral commodites by value followed by AZ, MN, UT, AK, FL, CA, and TX
- Only producer in the U.S. of magnesite, lithium, and specialty clays sepiolite and saponite
- Led the U.S. in production of gold and barite
- Other commodities include: aggregate, lime, cement, silica sand, diatomite, gypsum, clays, molybdenum, perlite, iron ore, dimension stone, salt, semiprecious gemstones (turquoise and opal), and mercury
- Total value of the non-metallic minerals was \$188 M in 2011(excluding aggregates)





NEVADA MINING FINANCIAL ASSURANCE (in millions)

	2003	2005	2007	2008	2009	2010	2011	2012
Bonds	\$272	\$248	\$210.6	\$214.0	\$328.2	\$393.0	\$998.9	\$1,165.6
Letters of Credit		\$254	\$412.7	\$618.1	\$654.5	\$629.9	\$413.4	\$489.8
CD / Cash		\$4	\$4.7	\$9.3	\$3.9	\$6.1	\$7.0	\$11.7
Corp Guarantee	\$271	\$204	\$187.3	\$182.0	\$179.7	\$183.7	\$183.0	\$180.5
USFS	\$14	\$10	\$12.3	\$12.5	\$13.5	\$13.3	\$13.3	\$16.0
Bond Pool	\$1	\$1	\$2.3	\$2.7	\$2.2	\$2.2	\$2.2	\$2.2
Total	\$558	\$721	\$829.9	\$1,038.6	\$1,182.0	\$1,228.2	\$1,617.8	\$1,865.8

NOTE: Data from the Nevada Division of Environmental Protection

Nevada Bureau of Mines and Geology CMR/NDOM-Funded Exploration Survey

John Muntean and Larry Garside Nevada Bureau of Mines and Geology University of Nevada Reno Commission on Mineral Resources Meeting November 9th, 2012





University of Nevada, Reno

Nevada Bureau of Mines and Geology CMR/NDOM-Funded Exploration Survey 2011 Expenditures

- Total: \$674,691,094
- Expenditures reported for 169 companies
- 32% of the total is by 2 metal companies
- Mean: \$3.9M, Median: \$0.5M
- By Sector:
 - Metals: \$609,274,814 (138 companies)
 - 90% of the total exploration
 - Industrial Minerals: \$9,129,971 (18 companies)
 - Geothermal: \$54,346,308 (9 companies)
 - Oil and Gas: \$1,850,000 (4 companies)





Nevada Bureau of Mines and Geology CMR/NDOM-Funded Exploration Survey Projected 2012 Expenditures

- <u>Total: \$504,577,302</u>
- Expenditures for 95 companies who responded to survey
- No internet research was done to estimate projected 2012 expenditures, so this is a minimum
- 57% of the total is by 2 metal companies
- Mean: \$5.3M, Median: \$1.2M
- By Sector:
 - Metals: \$483,727,302 (81 companies)
 - 96% of the total exploration
 - Industrial Minerals: \$7,700,000 (6 companies)
 - Geothermal: \$5,450.000 (3 companies)
 - Oil and Gas: \$7,700,00 (5 companies)





University of Nevada, Reno

Nevada Bureau of Mines and Geology CMR/NDOM-Funded Exploration Survey Preliminary Takeaway Messages

- 1. \$675M spent on exploration in 2011.
- 2. 1040 people employed in exploration in 2011.
- 3. Projections for 2012 are similar to the 2011 numbers.
- 4. Gold exploration accounts for >80-90% of the numbers.
- 5. Two large gold companies account for ~25-30% of the numbers.
- 6. Over 50% of the expenditures and employees can be accounted for by companies that spent <\$20M and had <20 employees involved in Nevada exploration.





University of Nevada, Reno

ACTIVE CLAIMS & GOLD PRICES 1982-2011



NOTE: Claim data from the BLM Public Land Statistics

CLAIM FILINGS & GOLD PRICES 1982-2012 \$1,667.78

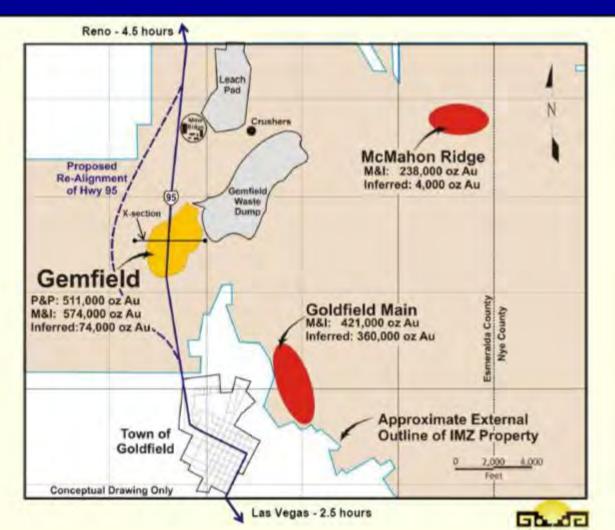


NOTE: Claim Filings in Fiscal Year from NDOM Financial Statements

NEVADA'S TOP TEN EXPLORATION PROJECTS 2013



GEMFIELD - Esmeralda Co. *International Minerals* www.intlminerals.com

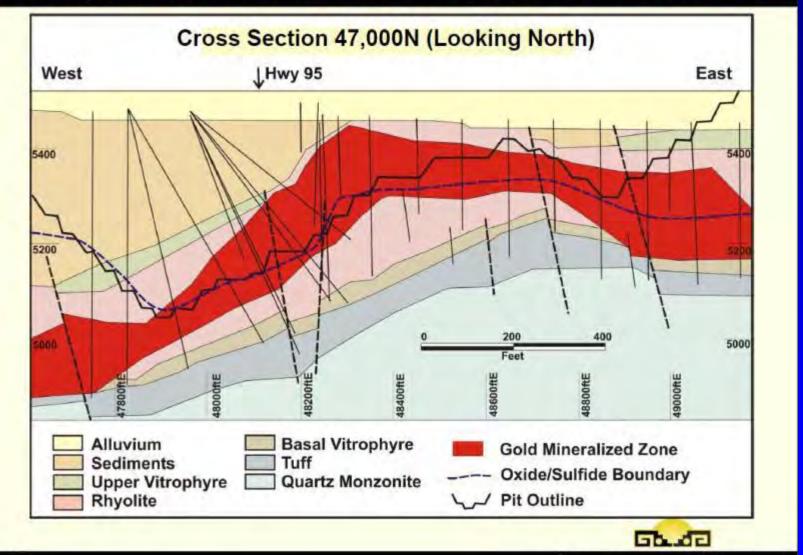


A structurally controlled, volcanichosted, epithermal Au deposit of the quartzalunite type



GEMFIELD - International Minerals

Goldfield, Nevada - Gemfield Deposit - Cross Section



INTERNATIONAL MINERALS

GEMFIELD - International Minerals

Goldfield, Nevada – Principal Target Areas



INTERNATIONAL MINERALS

GEMFIELD - International Minerals

IMZ - Goldfield, Nevada - IMZ 100% - Development Stage

* Historical Mining District in Southern Nevada

- Approx 4M oz gold production from 1903-1940's at ~18 g/t
- Three Gold Deposits (Gemfield, McMahon Ridge, Goldfield Main)
 - P+P Reserves*: 0.51M oz Au (14.3Mt at 1.1 g/t Au)
 - M+I Resources: 1.23M oz Au (31.1Mt at 1.2 g/t Au)
 - Inferred Resources: 0.44M oz Au (10.9Mt at 1.3 g/t Au)

Heap Leach Feasibility Study at Gemfield: July 2012

Basic engineering begins Q4 2012 – ends Q2 2013

Targeting Production in Mid 2015 (Gemfield only)

- 66,000 Au ozs/year, 6,000 tpd open-pit heap leach operation
- New met tests suggest a 7,500 tpd operation with 14% lower processing costs and G & A is feasible. A new mine plan is scheduled for Q2 2013.
- Capex estimate: \$133M (Plant/Infrastructure \$93M, Mine \$20M, Road \$20M)
- Total cash cost (with Ag by-product credit): \$611/oz Au
- Future Milling Scenario
 - Under evaluation

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Testing new drill targets outside of existing mineralized areas

* P+P Reserves included in M+I Resources.



INTERNATIONAL MINERALS

GIBELLINI HILL - Eureka Co. *American Vanadium Corporation* www.americanvanadium.com

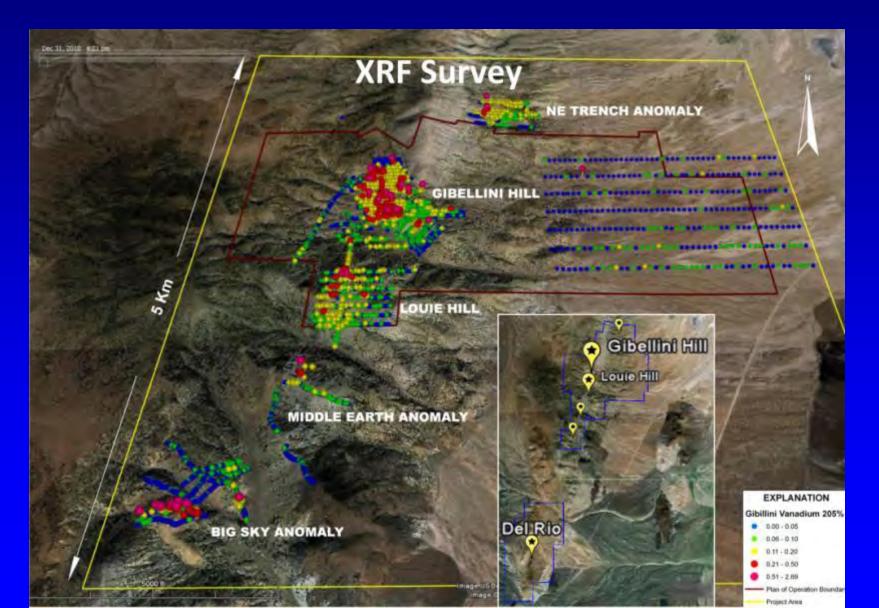
A variety of vanadium minerals hosted in an organic-rich siliceous black shale with an oxidation zone of up to 100 feet

PROPOSED OPEN PIT OUTL





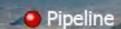
GIBELLINI HILL - American Vanadium



GIBELLINI HILL - American Vanadium

- Potentially lowest cost primary vanadium producer in the world and could supply 5% of world's current demand for vanadium
- NI 43-101 compliant "positive feasibility study" in 2011 added 41 M pounds (inferred) at Louie Hill to resource of 18 M tons @ 0.339% V₂O₅ = 122 M pounds of V₂O₅ (indicated) at Gibellini Hill
- Permitting and engineering for open pit/heap leach at projected 11.4 M lbs/yr V₂O₅

GOLDRUSH – Eureka Co. *Barrick Gold Corporation* – www.barrick.com



Goldrush (Cortez)

Horse Canyon

Cortez Hills

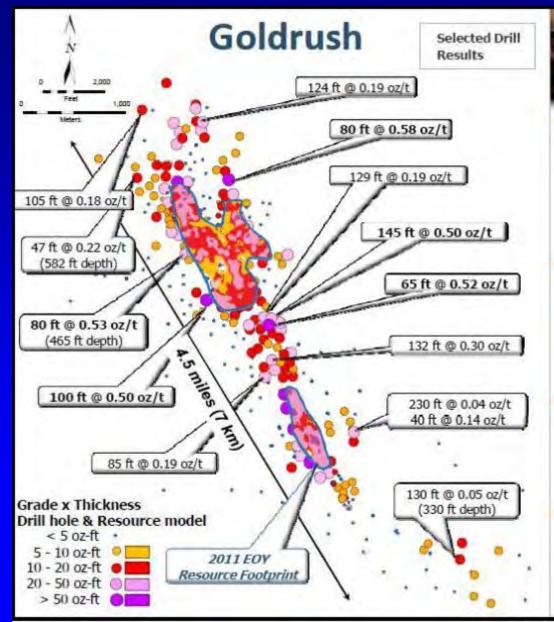
Goldrush

BARRICK

Initial 3.5 Moz resource doubled to: 1.3 Moz measured & indicated⁽¹⁾ 5.7 Moz inferred⁽¹⁾

Oblique aerial photo looking to the northwest. (1) See final slide #5

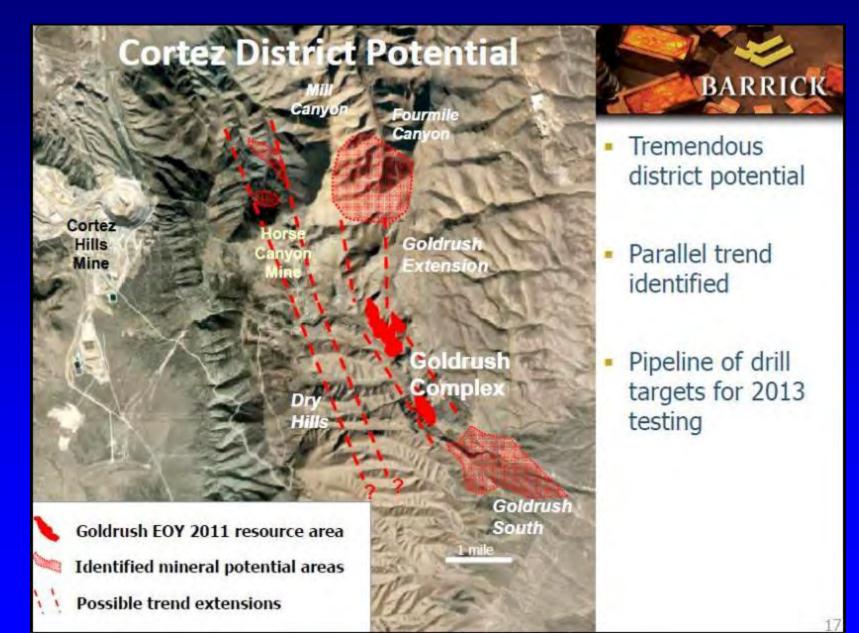
GOLDRUSH - Barrick Gold Corporation





- Footprint of system almost doubled to
 7 km strike
- High grade zones expanded between 2011 resource areas
- Shallow high grade west of Red Hill
- Expansion of underground-type grades to the north

GOLDRUSH - Barrick Gold Corporation



GOLDRUSH - Barrick Gold Corporation

Goldrush / Red Hill Drill Core

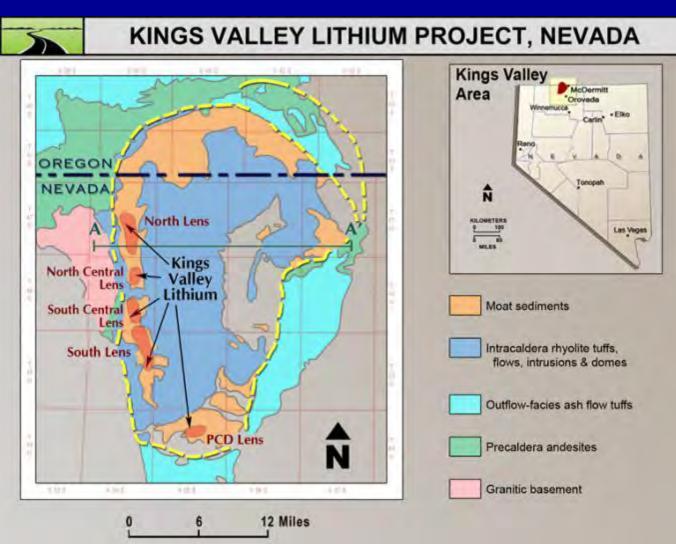


 Example of replacementstyle mineralization at Goldrush

BARRICK

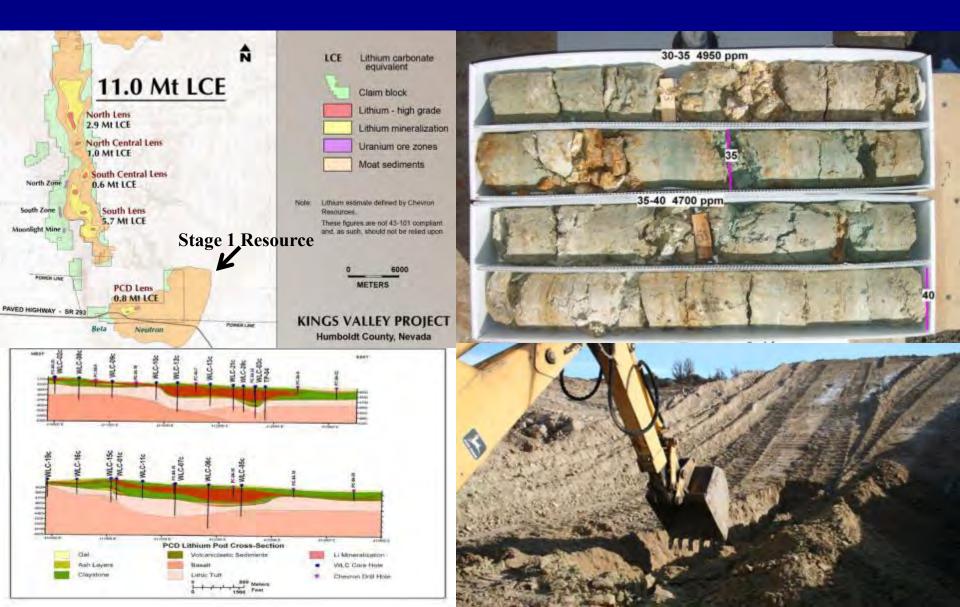
- Discovery drill hole
 HCD09-01 intersected
 67.2 ft grading 0.89 opt
- High grade gold from KB zone at Red Hill
- Drill hole RHD08-06 intersected 194 ft grading 0.90 opt Au

KINGS VALLEY – Humboldt Co. Western Lithium Corporation www.westernlithium.com



Lithiumenriched hectorite clay in altered volcaniclastic moat sediments of the Miocene McDermitt Caldera

KINGS VALLEY - Western Lithium



KINGS VALLEY - Western Lithium

- One of the world's largest known lithium deposits
- Ore Reserves proven and probable (Dec, 2011):
 27.1 million tonnes grading 0.395% lithium
 Also recoverable potassium and sodium
- Capital Costs = \$427 million, 20 yr mine life
- Permitting a hectorite clay operation to supply deep drilling additives for oil and gas industry
- Approvals expected in early 2014

LONG CANYON – Elko Co. Newmont Mining Corporation



Near surface oxidized sediment-hosted Carlin-type gold deposit associated with solution breccias and stratabound horizons

Newmont Mining Corporation | Dahlman Rose Global Metals, Mining and Materials Conference | www.newmont.com 22 November 17, 2011

100 Kilometers

Gold Trends
Sleeping Giant Deposits

Newmont Operations Fronteer development projects

LONG CANYON - Newmont Mining

North America

Long Canyon's Significant Potential Continues to be Discovered



- Recent drill intercept results⁵:
 - 23m @ 9.0 g/t
 - 57m @ 8.4 g/t 34m @ 1.4 g/t
 - 23m @ 10.5 g/t _ 55m @ 11.2 g/t
- Expect 75,000m drilled in 2012
- Expect infill drilling to convert NRM to reserve; condemnation and geotechnical drilling in 2013
- Feasibility study expected to be complete December 2013

Trend Potential of >3-4X Fronteer's Stated Resource Estimate⁶

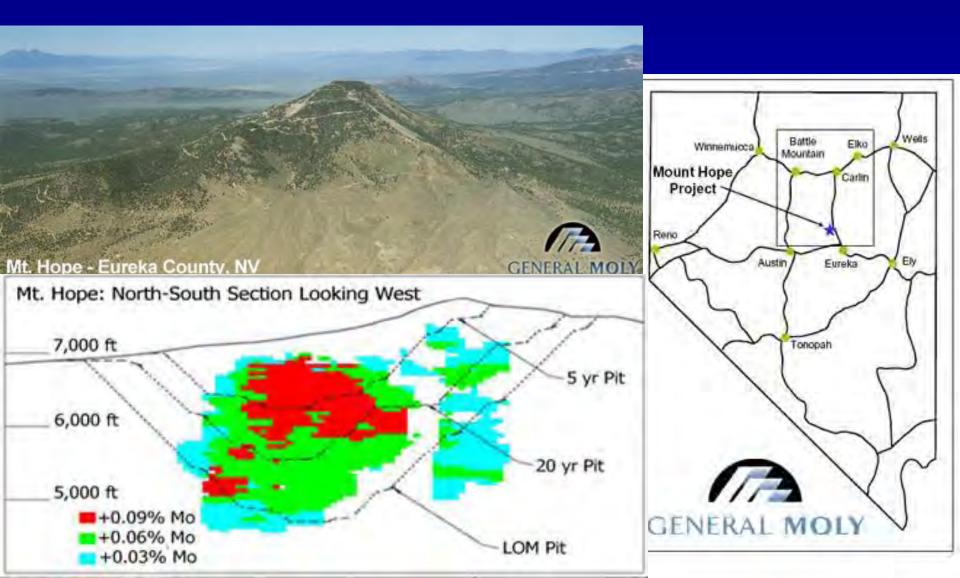
(1.4Moz M&I + 0.8Moz Inferred; No ounces currently in reserves or NRM; Expected to declare first NRM in early 2013)



LONG CANYON - Newmont Mining

- Predicts gold resources will triple to quadruple from Fronteer estimate of 1.4 M oz Au M&I
- Deposit is open to north and south
- Filed a plan of operations in April, 2012
- Prefeasiblility study by end of 2012
- Open pit mine with a mill and heap leach facility
- Full production in 2017
- Permanent work force of 400 employees

MT. HOPE - Eureka Co. General Moly - www.generalmoly.com



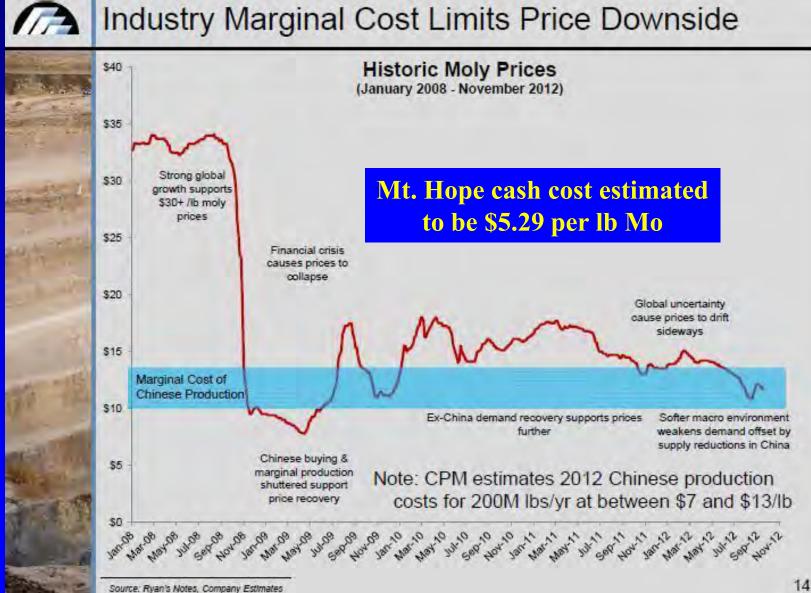


High-Grade Overlap Zone located high (near top) in ore body

MT. HOPE -General Moly

Classic molybdenum porphyry with two dome shaped shells of quartz porphyry weakly to densely veined by quartz stockworks containing molybdenite

MT. HOPE - General Moly



MT. HOPE - General Moly

- ROD for EIS received, POO approved 11/12
- Reserves of 1.3 B lbs Mo (proven and probable)
- 40 M lbs Mo/yr @ 0.103% Mo (first 5 yrs)
- Net Present Value of \$1.2 B at \$15/lb Mo
- Capital cost estimate \$1.284 B, 44 yr mine life
- Off-take and financing agreements with partners: Hanlong (China), APERAM formerly ArcelorMittal (India), POSCO (S. Korea), SeAH Besteel (S. Korea), and Sojitz (Japan)

PAN – White Pine Co. Midway Gold - www.midwaygold.com

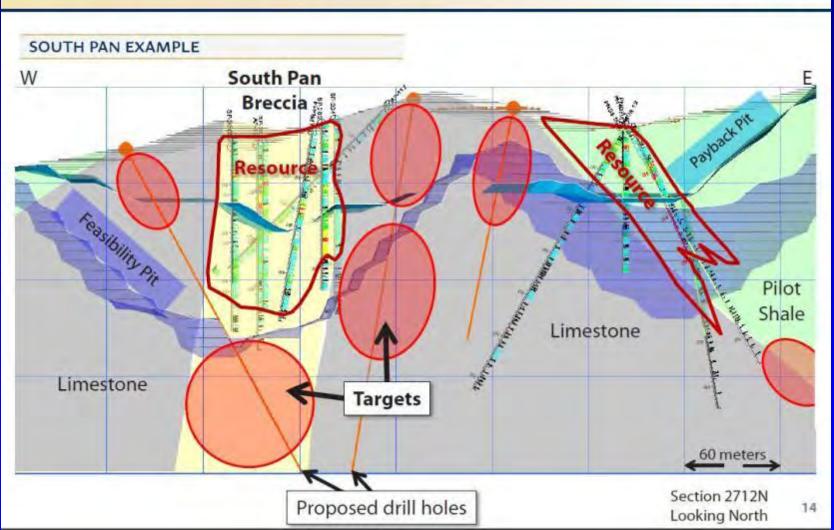
Oxidized PAN - RESOURCE EXPANSION POTENTIAL sediment MIDWAY GOLD hosted Carlin-GEOLOGY OVERVIEW OVERVIEW OF PAN RESOURCE GROWTH style gold Sediment hosted Carlin-style gold system 2010 43-101 Resource 1978-2010 drilling system Gold hosted in solution breccia 879 holes 73,623m Large scale: 3,700m long x 300m wide 2011 43-101 Resource 2011 drilling 33 holes North Pan NUMEROUS UNTESTED TARGETS 8,456m Open to North 2011 43-10 Favorable host rocks & structure Resource Spring Valley Open to South East **Central Pan** Reng - 2011 drilling confirmed Wendy zone Pan extension **Gold Rock** - Barite zone untested by drilling Open to depth - 20% of historic drilling ended in 2010 43-101 mineralization South Pan Resource Shallow Central Pan untested Untested cross structures Potential to connect North & South Pan

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PAN - Midway Gold

PAN - EXPANSION POTENTIAL

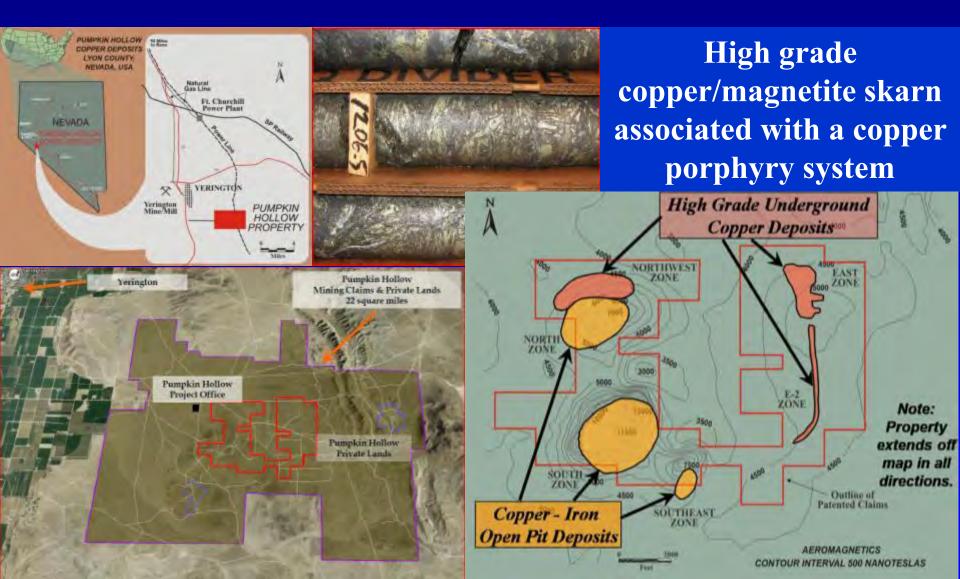


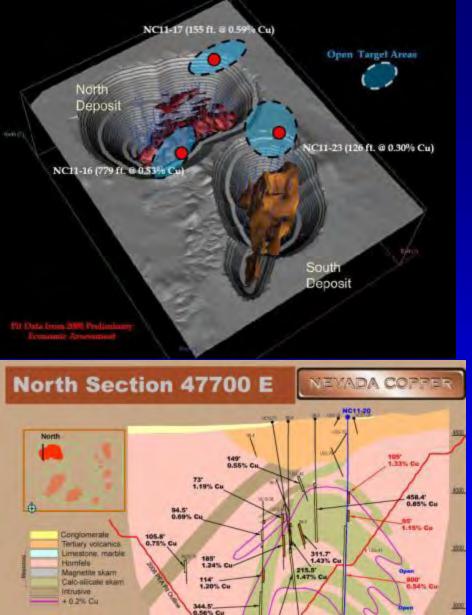


PAN - Midway Gold

- **P&P** reserve of 864,000 oz Au at 0.56 g/t
- Simple low cost project with capex of \$99M
- Open pit/heap leach with low strip ratio (1.8:1)
- Mine life of 9 years, annual production 81,000 oz
- Draft EIS to be submitted in late 2012/early 2013
- Production expected in 2014
- Numerous untested targets on property

PUMPKIN HOLLOW - Lyon Co. *Nevada Copper -* www.nevadacopper.com





PUMPKIN HOLLOW *Nevada Copper*

Proven and probable mineral reserves: 4.29 billion lbs of Cu 952,000 oz of Au 27.3 million oz of Ag

Measured and indicated iron mineral resource: 128.9 million tons Fe

Trace of drill hole

Intersected length of mineralization in feet. %Cu

Note: Assays <0.2 % not plotted

0.7% Cr

350' 0.35% Cu

500 FEET

1,000 ft. of 0.68% Cu

PUMPKIN HOLLOW - Nevada Copper

- OP and UG operation capital cost of \$1.04 B
- 60,000 tpd open pit and 7,500 tpd underground feeding a single 67,500 tpd concentrator
- Mine life of 18 years with Cu of 226 M lbs per year
- Positive feasibility study for Stage 1 underground East Deposit and 6,500 tpd processing facility
- Production targeted for mid-2015 pending Federal land transfer to the City of Yerington
- 2,200 ft. mine shaft under construction

SPRING VALLEY - Pershing Co. Midway Gold (JV with Barrick) www.midwaygold.com www.barrick.com

Porphyry/diatreme hosted gold system with significant amounts of coarse native gold



SV05-88 24 1mm gold grains in pan concentrate from a 5 foot run of RC drilling: Minimum grade = 3.4 g/t

Spring Valley Coarse Gold



3 - Gold Mtn

Other Spring Valley Targets:

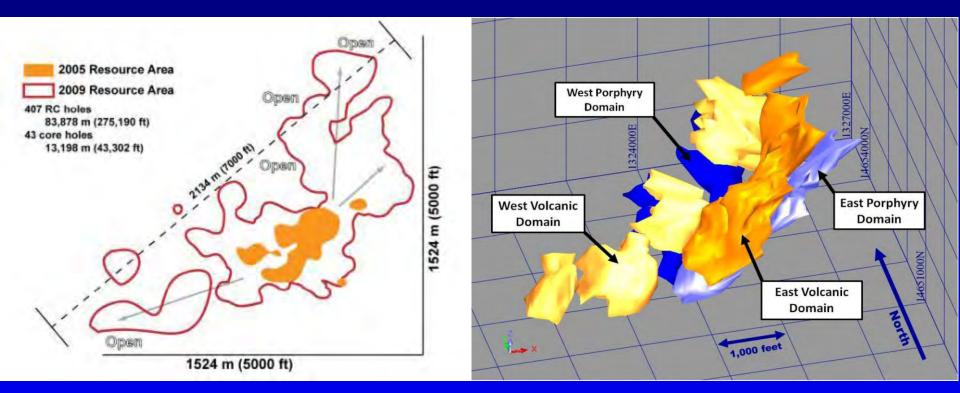
6 - Dry Gulch

9 - North Ridge

12 - Spring Valley West

SV05-68c Gold in 15 cm wide quartz vein

SPRING VALLEY - Midway Gold / Barrick

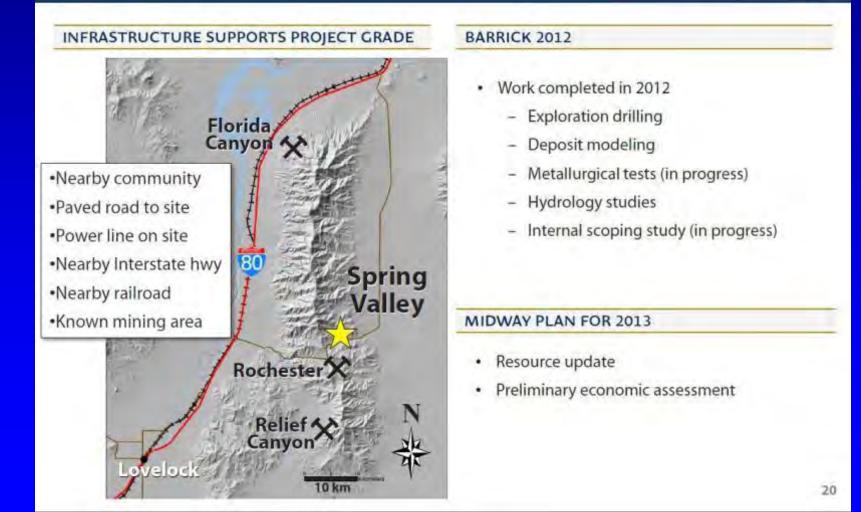


- May, 2011 resource estimate: 2.16 million oz gold measured and indicated and additional 1.97 million oz gold inferred
- Barrick continues earn in (\$17.7 M 2009 to 2011, \$11.5 M budgeted 2012, must spend \$30M by 2013 for 60% interest

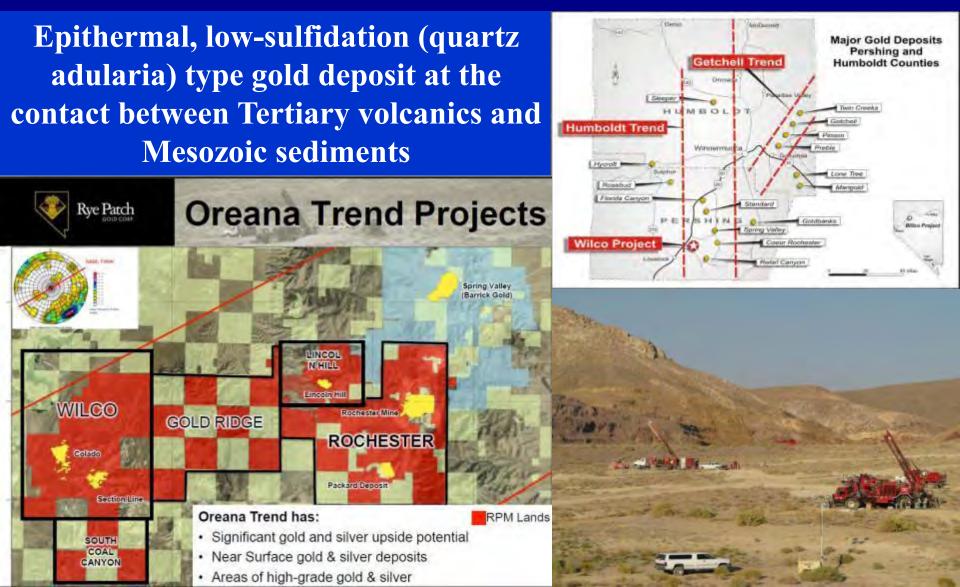
SPRING VALLEY - Midway Gold / Barrick

SPRING VALLEY - WHY IT WILL WORK



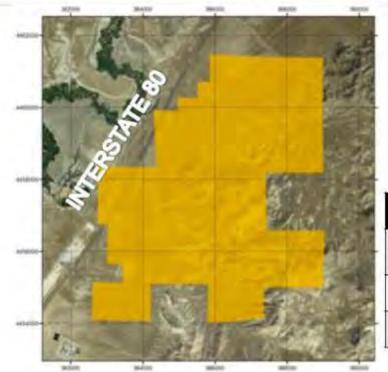


WILCO – Pershing Co. *Rye Patch Gold* – www.ryepatchgold.com



WILCO - Rye Patch Gold

Wilco Project



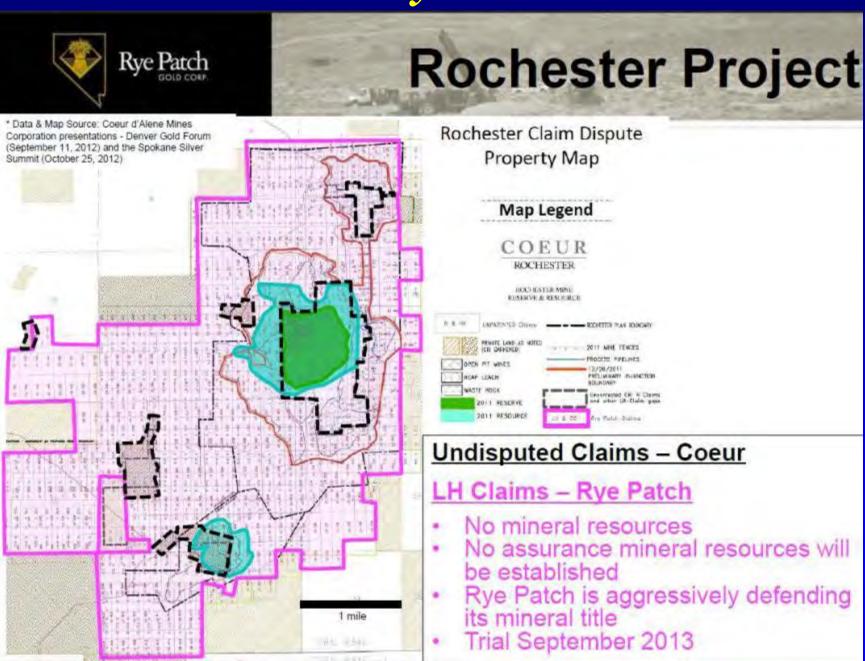
Rye Patch

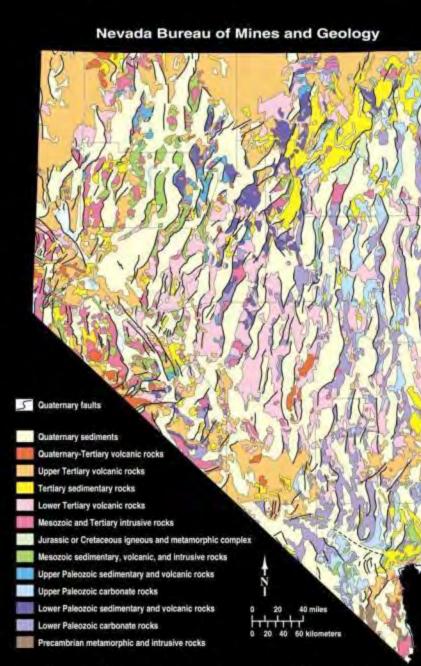
- 100% controlled, Newmont farm out
- 100 miles (160 km) NE of Reno, NV
- Adjacent to Interstate 80 on flank of West Humboldt Range

Wilco NI 43-101 In-Pit Resource (June 2012)			
Category	Gold Ounces	Silver Ounces	Aueq Ounces
M & I	1,278,000	10,304,000	1,484,000
Inferred	541,000	6,100,000	663,000

- Within Oreana Au-Ag trend near Florida Canyon (3Moz Au) and 8 miles west of Rochester silver mine (125Moz Ag)
- 8,500 acres (14 square miles) consisting of public and privates lands
 10

WILCO - Rye Patch Gold





Generalized Geologic Map of Nevada

Ten Top Reasons to Explore in Nevada

1. Great geology and mineral potential

2. Many large producing mines, including highgrade, underground mines

3. Mines operated by leading international companies



4. Regulatory system with recent examples of rapid permitting

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

6. Large areas of public land open to exploration

7. Dry climate and year round access



8. Network of knowledgeable exploration geologists, organizations, and agencies (Geological Society of Nevada, Nevada Mining Association, Nevada Mineral Exploration Coalition, Nevada Division of Minerals, Nevada Bureau of Mines & Geology, Ralph Roberts Center for Research in Economic Geology, and other units of the Mackay School of Earth Sciences and Engineering) 9. Recent discoveries and new mines

Ten Top Reasons to Explore in Nevada (continued)

10. No malaria, black flies, moose, polar bears, desert death adders, or crocodiles; just elephants!

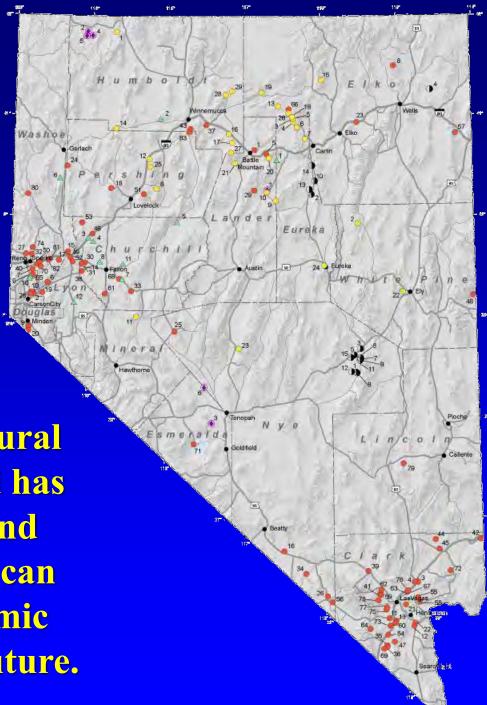


THE MAIN POINT





Nevada is a major natural resource producer and has significant mineral and energy resources that can provide strong economic development into the future.



THANK

No.



Round Mountain 55 pounds (802 troy oz) @\$1,710/oz = \$1.37 million



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Opal, Virgin Valley



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