Mining and Exploration in Idaho 2000
Virginia S. Gillerman
Idaho Geological Survey
Slides numbers in notes at the bottom of each slide correspond to descriptions in the following 12 pages of notes for 2000. Letter slides (MM, QQ, etc.) were in a second projector and are section headings. There were also a few extra slides at the end.
Idaho Non-fuel Mineral Production

Millions of Dollars


Total
Phosphate
Gold
S & G
Moly
Crescent Mine:

Removal Action, fillings and waste rock removal from Moon Creek, 2000
Main Areas of the Bunker Hill Superfund Site

Coeur d'Alene
Kellogg
Mullan
Cataldo
Pinehurst
Smelterville
Wallace
Boise
Montana
Idaho
Washington

Idaho

0 20 Miles
0 20 Kilometers
Idaho Phosphate Producers - 2000

- Astaris (FMC) - Pocatello – P4
- Monsanto - Soda Springs – P4
- Agrium - Conda – Phos. Acid
- J.R. Simplot - Pocatello – Phos. Acid
Enoch Valley Mine:
Footwall and Ore Cross-Section 11/1990
MONSANTO:
Transplanting trees from new mine areas to areas currently undergoing reclamation, Enoch Valley Mine, 2000
Stibnite:

Blowout Creek Fire, 2000
Black Pine, heap reshaping, 2000
Past and Present

Present Site Layout

Significant Dates - DeLamar District

1853  Gold discovered in the district.
1880-1914  Underground mining at DeLamar. Production — 6 million ounces silver, 400,000 ounces gold.
April, 1977  Open pit mining began by Earth Resources Co., (operation), Superior Oil Co., and Canadian Superior Mi (U.S.) Ltd., Joint Venture.
Sept., 1981  Earth Resources Co. merged into MAPCO Minerals.
Sept., 1984  MAPCO interest purchased by NERCO Minerals Company.
July, 1985  NERCO Minerals Company purchased Superior/Mobil Oil interest in DeLamar - controlling 100% of the DeLamar.
Aug., 1993  Kinross purchased DeLamar and now controls 100% of the DeLamar Mine.
Ag - 35.3 million oz.
Au - 663,200 oz.

Awards and Achievements

1996 Idaho Department of Lands
*Excellence in Reclamation Award*

1992 Idaho Department of Lands
*Exploration Project Reclamation Award*
*Special Project Award - 16 Level Adit*
Table Rock Sandstone: facing stone and landscaping rock
FOR IMMEDIATE RELEASE Newport Beach, CA October 12, 1999

INTERGOLD CORPORATION WHOLLY OWNED SUBSIDIARY FILES LAW SUIT AGAINST DAMES & MOORE, AURIC METALLURGICAL LABORATORIES, LLC., AND AHMET ALTINAY, AND RICHARD DANIELE

Summary: On behalf of the Board of Directors, Intergold Corporation, ("the Company") reports that another
Trail Creek Fire
Atlanta, Idaho
Talache Mine
High Priority Target Areas
- Formation Claim Boundary
- Cobalt in Soils Geochemical Anomaly (>100ppm)
- Copper in Soils Geochemical Anomaly (>300ppm)
- Drill Hole Pierce Point

Surface Mineralization
- Ore Pass / Vent Raise
- Ore grade cobalt

Longitudinal Section Line

Sunshine Lode Longitudinal Projection (Looking S70W)
Helmar-Bovill Clay District, Latah County, ID

Moose Creek Drilling Area, 2000

NW Kaolin Alchemy JV
W Kaolin/Alchemy JV Clay Project
Drilling, 2000
Collector's Choice

OWN A PIECE OF HISTORY WITH THE WORLD'S FIRST "COIN-TOSSED" ELECTION SILVER PROOF

ONLY $29.95
Coeur d’Alene District News

- 1999: 13 million oz. Ag
- Sunshine Bankruptcy
- Good Mining, Bad Prices
- SuperSuperfund?
PHOSPHATE 2000: New Developments

- New PPA plant under construction (Astaris/Agrium JV)
- Selenium research BMP’s
- Lease Sales – Simplot high bidder
- Mine extensions
Black Pine Gold
Pete Peterson (FS) &
[Further text not visible]
1998 Reclamation Awards

URS./Nelson Const.
Mobil Oil
Rob Cordtz
Emerald Creek GT.
Gibson Const.
J.R. Simplot Co.
IDOT District 3

Bradley Mills Tails
Bradley Mills Tails
Agency Coordinator
Placer Reclamation
Musgrove Reclamation
Smoky Can. Tails
Claytonia Pond

Crelin Scott
USFS Stewardship
Boise NSTA Minerals Education Booth
A variant of Proterozoic Iron Oxide (Cu-U-Au-REE) Deposits?

The Lemhi Pass Thorium District is in the Beaverhead Mountains astride the Idaho-Montana state line, southeast of Salmon, Idaho. The Lewis and Clark Expedition crossed the Continental Divide at Lemhi Pass in August, 1805. Rocks are principally Proterozoic-age quartzites and slates, overlain by Tertiary-age Challis Volcanics. Copper-bearing veins were first mined in the 1860's, but thorium was reported in 1951 and a prospecting boom followed. Staat (1979, USGS PP-1045A) and previous workers mapped the district and recognized three vein types: quartz-hematite, copper, and thorium veins, all hosted in the Proterozoic sequence. Staat considered the thorium (found as thorite or allanite) to be related to Tertiary magmatism and faulting. Our recent reconnaissance suggests that the Lemhi Pass mineralization is better explained as a variant of the Olympic Dam-type Proterozoic Cu-U-Fe-REE association. Thorium at Lemhi Pass is not found in Tertiary rocks. It is localized in variably dipping high temperature shear zones with attendant deformation more characteristic of pre-Tertiary transpression. Thorium is associated with abundant spicular hematite, potassium feldspar, quartz, biotite, and local tourmaline. Copper (+ thorite) is present in veins associated with Proterozoic-age (?) mafic sills and dikes. Mineralization is not found in the Tertiary volcanics, and at least some of the faulting predates the volcanics, which may be filling in fault-related basins. Numerous regional occurrences in the Proterozoic section of speculate, thorium, and uranium veins, as well as copper, gold, and cobalt ores are compatible with this revised interpretation of the unique Lemhi Pass District.
Hot Issues on Federal Land?

- Roadless Policy
- Ecosystem Sustainability
- National Monuments
- Fires
- BLM 3809 regs
Tray 1 == Scenary and mine photo slides (audience right)
Tray 2 == LOCATION MAPS (audience left)

Slide No. | Description
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**AA.** MINING AND EXPLORATION IN IDAHO, 2000

1. Author. VSG, IGS. Good morning. Thanks to agency/company folks.

**BB.** 1997-1999 IDAHO NONFUEL MINERAL PRODUCTION (USGS)

For raw ore value only, preliminary USGS data for 1999 has Idaho mineral production value of $420 million, a 4% decrease. Does not include processing of phosphate ore, that would add another 3-400 million dollar value.

2. 1995-1998 Production Bar Graph with phosphate delineated. Graph on right shows importance of phosphate. In 1999, Idaho was 2nd in production of phosphate rock and garnets, and 3rd in Ag, Mo, and Pb in nation. Decreasing total value reflects decreased molybdenum, gold, and silver prices over last few years. Trend will continue in 2000, which will also show significant decrease in ounces of gold.

**CC.** CDA DISTRICT MAP (Hosted in Proterozoic Belt sediments, Silver Valley is most important historically, politically, economically and environmentally. Over 1 billion ounces silver and $5 billion value.)

3. Hecla Lucky Friday, tour group from National Minerals Education Conference.
   Hecla has 2 units: Lucky Friday mine and nearby Gold Hunter.

4. Hecla Map with faults and 2 mines. Gold Hunter deposit is connected with mile-long haulage tunnel on 4900 level. Had most of the production. Started in June, 1997. Mine had good year operationally. In 1999, Lucky Friday unit (both deposits) produced 4.4 million oz. Ag. More this year?

5. Hecla-Gold Hunter Stope. Gold Hunter vein is tetrahedrite in more argillaceous rocks. Mine with ramp system on both underhand and overhand mining plan. Due to low metal prices, even good deposits can’t generate much revenue. Hecla lost money and in November announced sale of K-T clay division for $68 million, which will be used to reduce debt load.
6. Hecla- Gold Hunter geologist on ATV. Geologists at Gold Hunter ride in style as they map and sample. Saves time and increases productivity.

7. Sunshine mine. There was not much sunshine for the famous Sunshine Mine - with production since 1884 of over 350 million oz. silver: one of world’s largest single silver mines.

8. Sunshine mine, West Chance vein. Mining continued on West Chance vein, but reserves are dwindling fast. Sunshine Mining Company lost $10.8 million in 1999, and faced with major debt payments, the company filed for Ch. 11 bankruptcy reorganization late in the summer. Anxious 260 employees at mine and office. Exploration efforts, some minor drilling off the Consil mine, were minimal due to lack of funds. Reserves only till next spring. Sunshine has very promising Ag-Sn deposit (Pirquitas mine) in Argentina.

9. Sunshine - The Silver Source. One of few “single mine” companies, Sunshine Mine is legendary. In 1999, produced 5.2 million oz. Ag, plus Cu, Pb, Sb from tetrahedrite and galena veins.

History: Two Maine farm boys, Dennis and True Blake discovered the tetrahedrite-quartz blowout outcrop in 1884, near ridgeline in Big Creek drainage. Staked the Yankee Lode and settled on homestead in the canyon. Worked claim by hand and eventually sold first shipment of ore in 1887 for $40,000. Ore hauled by packstring and narrow gauge RR to East Helena. Claims patented in 1909. Had 10 tunnels and shaft, all hand dug. Widow started leasing claims about 1914. 1918 - E.C. Tousley incorporated Sunshine Mining Company and in 1920 took over the Yankee claims. Mine struggled, but in 1931, under mine manager C.C. Samuels they hit a bonanza deposit on the 1700 level. Lots more history from there. GET FREE HANDOUTS AT UI-IGS BOOTH.

10. Galena Mine. Coeur, The Precious Metals Company, also lost money last year but fared better in the Silver Valley this year. Coeur bought our Asarco’s half share of Silver Valley Resources last year and now controls 100% of the Coeur and Galena mines and surrounding property. Exploration at the Galena mine (shown here) had considerable success. Galena produced 3.4 million ounces Ag in 1999. Production this fall was up after shaft repairs. High grade ore tallying 20-60 opt Ag was being mined from 117 vein. Company also excited about 72 vein and some larger stepout intercepts on Polaris Fault. Using geologic models to target exploration. Also reducing mining costs.

Coeur especially pleased that on August 25, its employees at the Galena mine and mill completed an entire year and 430,000 person-hours of safe work without a single lost-time accident.

DD. CDA NEWS.

11. Bunker Hill Superfund Site Map. Coeur d’Alene District also known as location of infamous 21 sq. mile Bunker Hill Superfund site box. Work there is nearly complete.
Accomplished much—razed the Zn plant and Pb smelter, remediated hundreds of residential yards, and significantly reduced blood lead levels in children. Newest controversy and dilemma is need for 330,000 cubic yards of topsoil to cap the Central Impoundment Area (CIA).

12. Silver Crescent 1. There have been many other cleanup efforts in the basin, including those of the U.S. Forest Service which was working on the old Silver Crescent mine, pulling tailings and waste dump rock out of the creek.

13. Silver Crescent 2. This is what it looked like after reclamation.

EF. SILVER VALLEY - THEN AND NOW.

14. Bunker Hill Regional Map. As you can see, the Valley really does look better now. Biggest Controversy is proposal to expand the Superfund site to the entire CDA River basin, a huge area. Has set up a battle between Idaho, the EPA, local citizens (who do not want additional designations), the mining companies, the tribes, and the state of Washington. The 9th Circuit Court of Appeals upheld the CDA tribe’s claim to part of Lake Coeur d’Alene, and the tribes have a billion dollar lawsuit against the mining companies (who barely have the $250 million they offered over 30 years for a state-led cleanup plan). The lawsuit is up for trial in January in Boise. Over 100 years of history in the CDA District continues.

FF. PHOSPHATE DISTRICT MAP

Phosphate from the Permian-age Phosphoria Formation is the largest value commodity produced in Idaho. Over 6 million short tons mined annually. Used in fertilizer, food additives, chemicals, herbicides and many other items.


16. Astaris (FMC) Dry Valley mine blast. Astaris mines 1.5 million tons a year from the Dry Valley mine. Received permit to expand for C and D pit areas after revising their EIS to incorporate more BMP’s to control Se release from waste rock.

17. Astaris (FMC) Elemental Phos Plant, Pocatello. In March, company announced additional $68 million in environmental controls to improve air quality in Pocatello valley. Reduce dust and carbon monoxide emissions. Shut down 2 electric furnaces for a short time and are converting to lower dust systems and new slag handling methods. Have 500 employees, markets good.
18. Simplot’s Phosphoric Acid Fertilizer Plant. Simplot produces phosphoric acid fertilizer at plant across the street. Consumes most of its fertilizer in Rocky Mtn. Region. Prices for fertilizer down this year as farmers hurting big time.

19. Smoky Canyon mine, Mining E pit. Simplot was mining in the upper E pit at the south end of their Smoky Canyon mine. Production was going well and they expect to ship 3 million short tons of phosphate rock this year. Encountered unexpected flat faults in the pit. Company bought 4 new CAT 785 haul trucks and a Hitachi excavator to replace older equipment.

20. Smoky Canyon mine, reclaiming D pit. Reclamation and backfilling of D pit was ongoing. Company was still working on Supplemental EIS for B and C panels on the north end of property; main task was addressing Se issue. Hoping to complete that by end of 2001. Simplot also was high bidder on leases for Manning Creek and Dairy Syncline tracts, substantial future resources. Bids were record highs. Also did exploratory drilling at Sulphur Canyon.

21. Agrium Rasmussen Ridge mine. Agrium and contractor Washington Group will ship about 1.5 million tons of phosphate from the central Rasmussen mine. Did delineation drilling on North Rasmussen tract and just turned in the mine plan to the agencies. Hope to start EIS on it next year. North Rasmussen was designed with no external waste dumps in order to avoid problems from Se in waste shale unit.

22. Agrium Plant (use new photo). Agrium’s ore goes to phosphoric acid plant at Conda. Minor problem with old digestor that needed repairs. Major project was construction of $100 + Purified Phosphoric Acid (PPA) plant - a joint venture between Astaris and Agrium. Will use solvent extraction technology. Existing plant is being expanded as well. Expect start up in summer, 2001.

23. Monsanto - Enoch Valley mine, aerial. This 1998 air view shows Monsanto’s Enoch Valley mine. Will ship 1.2 million short tons of phosphate this year.

24. Monsanto - Enoch Valley Footwall Section. A buff-colored limestone is footwall to the ore. Chert overlies the two ore beds. Monsanto started pre-stripping of chert on their South Rasmussen Ridge deposit. They have the necessary mine permits but are still awaiting a special use permit for an access road across FS land. Required enhancing the EA for road.

25. Monsanto Plant, night. Monsanto runs this elemental phosphorus plant at Soda Springs. It was in full production, especially with sales of Roundup herbicide booming. Company was building a new facility to ship special tanks of elemental phosphorus to a new RoundUp plant in Brazil. The new marketing joint venture of Monsanto and Astaris seemed to be working well.
GG. NEW DEVELOPMENTS - PHOSPHATE DISTRICT

26. Monsanto, tree planting. Reclamation and enhanced Best Management Practices (BMP’s) to address the Se problem were still a major issue this year. They influenced new mine plans and EIS documents, leading to longer permit times. A common theme was the use of backfilling to reduce the need for waste dumps where Se could be leached. In addition, the waste shales are no longer used as a capping growth medium, but are themselves capped with low selenium material.

HH. ACTIVE MINES, inc. CLOSED MINES IN PLANNED RECLAMATION.

(Several good case histories of environmentally successful mine closure.)
Still relatively few mines active this year, due in part to sagging metal prices.

27. Thompson Creek mine, aerial. Thompson Creek, the large open pit Molybdenum mine near Challis continued to operate, though Mo price in tank. Announced 25 more layoffs and cut backs this fall.

28. Thompson Creek Pit, SE pit bottom. Company did do some delineation drilling in back of the high wall, and continued mining in the huge pit.

29. Thompson Creek Tailings Pond with Elk. Mine provides excellent protected elk habitat. They did receive a Record of Decision on SEIS, allowing them to operate the pyrite separation plant to reduce threat of acid generation in tailing impoundment. In September, Secretary of Interior approved mineral patents for 2500 acres at the mine. This puts the State of Idaho in an oversight position on permits and reclamation.

30. Beartrack mine, aerial of South Pit. Idaho’s largest gold producer for the last several years has been Meridian Gold’s Beartrack mine, west of Salmon. They finished mining in March. 1999 production was over 137,000 ounces of gold; the estimate for 2000 is about 70,000 ounces.

31. Beartrack mine. Meridian employed 120 persons during the mine’s operation; only 17 are left. The mine, a mainstay of the Lemhi County economy opened in 1994 with a 6-7 year mine life anticipated. Continued leaching and reclamation was underway. The North Pit was backfilled with additional lime added and then capped. The Mason-Dixon Pit was being reclaimed and the waste rock piles resloped.

32. Beartrack mine, aerial looking north. This air view, looking north, shows the alignment of pits along the Panther Creek Fault. The mine area served as an excellent fire break to help contain the mammoth Clear Creek Fire last summer — thus proving that “Open pit
33. Rescue Mine portal. Over in central Idaho at Warren, the underground Rescue mine exploits a high grade gold-quartz vein.

34. Rescue Mine face with Jim Striker. Jim Striker, miner and longtime NWMA member retired and sold CSC Mining and his interest in the Rescue Mine to a Canadian junior company, Barramundi Gold. Jim, Jr., remained as a site manager at Warren. Barramundi has been sampling and exploring the vein structures. Systematically spaced ore shoots average about 0.65 oz./ton and are open to depth. The company also holds other veins in the district and has been restructuring the Rescue’s gravity mill. The company is seeking additional funding for the promising small mine.

35. Hecla’s Grouse Creek mine. Hecla’s short-lived Grouse Creek mine on Jordan Creek in central Idaho has been closed for a couple of years. A major issue has been the large tailings impoundment filled with water in the high snowfall region.

36. Hecla employee water sampling. Low-level cyanide leaks have also been a problem for the company’s image. In October, Hecla signed a voluntary agreement with the Forest Service and EPA to dewater and detoxify the tailings pond. Treated water will be released into the creek.

37. Yellowjacket mine. U.S. Antimony’s reclamation of its operation at the Yellowjacket gold mine in Lemhi County has been going very well. The company is backfilling the pit with the tailings and dismantling the mill building and equipment. It is noteworthy that USAC is now looking for zeolites in southeastern Idaho; the switch to industrial minerals may be a sign of the times.

38. Stibnite Haul Road Reclamation. Reclamation of bankrupt Dakota Mines’ haul roads and facilities at Stibnite continued under the supervision of the Forest Service and State Dept. of Lands. Symptomatic of the year, the biggest news was in the courtroom. Mobil Oil has spent some $ 5 million in cleanup costs for remediation of the historic Bradley mill tailings over last few years. Mobil’s attorneys convinced the federal government to admit the vital role of the U.S. government in discovering and mining the tungsten from Stibnite during WWII. In an out-of-court settlement, the Feds agreed to pay Mobil $ 1.55 million as partial reimbursement and will waive some further claims against Mobil. The oil company inherited Stibnite by purchasing Canadian Superior who started an open pit, heap leach gold mine at Stibnite in the 1980’s.

II. STIBNITE FIRES (composite haul road reclamation -IDL)

39. Blowout Creek Fire. The Stibnite area really heated up this summer with major fire
activity. Fires torched many spots at the camp and mine areas like Garnet Creek, taking out prior reclamation work. Fire swept over Monumental Summit towards the wilderness area as well.

**JJ. BLACK PINE: FS SUPERVISOR PETERSON AND CRELLIN SCOTT**

40. Black Pine Mine, heap reshaping. At the Black Pine mine in Cassia County, the efforts of Pegasus Gold and their environmental manager, Crellin Scott (on right), have resulted in a good partnership with the Forest Service, represented here by Sawtooth Forest Supervisor Peterson (on left). In spite of their bankruptcy problems, Pegasus committed to proper reclamation at Black Pine, after the planned closure a couple of years ago. The final gold pour was a year ago. Reclamation activities included reshaping roads and neutralizing and rinsing the heap.

41. DeLamar mine site overview. Kinross’s DeLamar gold-silver mine in Owyhee County closed at the end of 1998, and the property is now on care and maintenance status. The district has long been a trademark of Idaho mining history. From the early discovery in 1863 through 1914, the old underground mines produced approximately 400,000 ounces of gold and 6 million ounces of silver. Its modern history began in 1977 when Earth Resources opened an open pit precious metals mine. Subsequent owners of the property included MAPCO, then NERCO, and finally Kinross Gold.

42. DeLamar mine production/reclamation. There are two modern mines: the DeLamar mine, which consists of several pits, and the Stone Cabin Mine which opened in 1995. From 1977 through 1997, the property produced about 35 million ounces of silver and 663,200 ounces of gold from epithermal veins and stockworks in the Tertiary rhyolites. This year, reclamation was ongoing at the DeLamar pits and Jacobs Gulch waste dump. The Stone Cabin mine was shut down in 1998 to preserve the unmined resource. The vat leach mill and cyanide destruction AVR plant has been mothballed. A major task is evaporating and land applying water so as to empty the tailings pond. The company is also proud of its wetland restoration results along Jordan Creek, which was impacted by the historic mining.

**KK. INDUSTRIALS MAP, 2000**

(Idaho has many industrial mineral operations, small but stable part of rural economy. Healthy year.)

43. Emerald Creek Garnet. Emerald Creek Garnet is one of nation’s leading suppliers of industrial garnets, used for abrasives, water jets, and on oil field drill pipes. Had excellent year with markets booming. Operate 5 washing plants and 2 concentrating facilities. Expect to ship 35,000 tons in 2000 vs. Only 24,000 last year. Received Reclamation award in 1999. Working on permits for new lease in St. Maries River.
floodplain.

44. Hess Pumice. Hess Pumice produces ultrapure, ultrafine grinding powder from pumice deposits in Malad County. Powder is shipped to Pacific Rim countries from use in polishing television screens. Also use pumice in lightweight aggregate. Pumice business was steady. Hess also bought Idaho Minerals, a perlite producer last year. Operated the expander plant and sold it to horticulture and insulation markets.

45. Fairfield gold pumice pit. Mountain West Colorado Aggregate changed its name back to Mountain West Products (MWP) under a new owner, a Missoula construction company. The Rexburg-based firm supplies a wide variety of landscaping material, including gold, black, and red pumice and scoria from three pits in Idaho. Business was steady.

46. Unimin pit. Unimin operates a silica sand pit near Emmett. The sand is used in glass-making and water filtration, as well as for golf course bunkers. Business was steady. The Emmett plant employees were nationally recognized at the Wildlife Habitat Council’s 12th Symposium for developing a special management plant for the endangered Aase’s onion plant and building bird nesting platforms. The Unimin facility was one of 106 sites recognized nationally.

47. Three Rivers Stone Quarry, aerial. L and W Stone, a California company, operates the Three Rivers Quarry near Clayton. Although the building stone market was booming, the quarry was shut down for two months due to MSHA violations.

48. Table Rock Sandstone on chimney. The Table Rock Sandstone quarry at Boise continued to supply building and landscaping rock.

49. Oakley Stone Tile in entry way. A classic Idaho dimension stone is Oakley stone, a micaceous quartzite. It is unique in splitting in thin sheets and can be cut into tiles. These tiles are from Northern Stone Supply.

50. Northern Stone Silver Peak quarry. Like other producers, Northern Stone quarries its Oakley stone from quarries on Middle Mountain, south of Oakley in Cassia county. With demand high, there was lots of new interest. Three established producers, inc. Northern Stone, Oakley Valley, and Rodriguez and two new quarries opened. A local resident started Diamondfield Quartzite, which reactivated an old quarry at Warm Springs to supply Interstate Rock Products of WA.

51. Workers, Fish Creek Quarry. These workers are at the Fish Creek quarry which is owned by American Stone, a Utah company. Other producers in adjacent areas of Utah.

52. Sand and Gravel map. Sand and gravel for booming construction market was still in high demand in many parts of the state. These maps are from a new IGS Technical Report
showing gravel resources and land use in the Eagle quad near Boise.

LI. RECLAMATION AWARDS LIST (Work done 1998)
(Awarded late 1999)

53. Emerald Creek Garnet Reclamation. Emerald Creek Garnet won the State Land Board award for reclamation of a placer property. Mobil Oil, Consultant URS (Woodward Clyde), and Boise-based Nelson Construction all won awards for the reclamation of the Meadow Creek tails at Stibnite. Gibson Construction won the exploration reclamation award for work at Musgrove. J.R. Simplot won an award for work on the tailings pond at Smoky Canyon. ID DOT won for sand and gravel reclamation, and Rob Cordtz of the Payette Forest won as top agency reclamationist. In addition, Crellin Scott, of Black Pine Mining, was honored with special Forest Service award for partnership at Pegasus' Black Pine mine.

54. BLM Champagne Creek AML remediation. There were inventories and several remediation projects underway on inactive or abandoned mines in Idaho. One was this BLM biosystem treatment of acidic drainage at an old adit on Champagne Creek near Arco. They constructed this biosystem to use sulfate-reducing bacteria plus limestone in a passive wetlands treatment system. Luckily, acid conditions are rare at Idaho mines.

MM. EXPLORATION MAP, 2000
(Lack of projects this year was due to low metal prices and perceived regulatory and federal land use difficulties in U.S., as many companies are cutting back on grass roots exploration overall and especially in the U.S.)

55. Intergold Internet News. Hopefully this is the last time for this slide. Intergold Corp. finally admitted, early in the year, that their gold assays on the Blackhawk property can not be substantiated. You may recall that many of us were highly skeptical of the project from the beginning. Lawsuits against the consultants and labs continue. The only exploration was of the far crevices of legality.

56. Atlanta Trail Creek Fire Photo Montage. Twin Gold became Twin Mining. The company still holds the 1.3 million ounce gold resource near the town of Atlanta. Things were pretty hot there this year.

57. Trail Creek Fire #1. Project manager Doug Glaspey took these photos when he was up there doing baseline monitoring. They are from Flint Creek Saddle just south of the old Talache mine area.
58. Trail Creek Fire #3. The fire was moving rapidly towards the mine area.

59. Trail Creek Fire #5. At this point, Doug and the firefighters decided to retreat. The Trail Creek Fire burned the old Talache mill, the Monarch headframe and many historic buildings at the site, including the core storage shed. The company lost all the core drilled in 1994. Luckily the town of Atlanta was spared.

60. Dewey Dome. Thunder Mountain Gold’s property at the old Dewey mine east of Stibnite was spared from the flames. The company reactivated the permitting effort, but may have more news soon. Other dormant properties with drilled out gold resources include Kilgore in eastern Idaho and Buffalo Gulch near Elk City.

61. Daddy Del Placer. Lois Van Hoover and partners conducted this backhoe sampling of gold-bearing gravel along the South Fork of the Salmon in 1998. The Forest Service also conducted a validity exam. This year the explorers were waiting on scoping and permits. They plan to do more work next year on the 3.5 miles of placer claims. Some of the gold is probably eroded from the Stibnite area.

62. Empire Mine. Sultana Resources, a local Idaho group, has taken over the claims at the historic Empire mine near Mackay and announced plans to start a copper leaching project.

63. Honolulu Open Pit, Empire mine. The ore at Mackay is in a copper skarn which has been explored by several companies, most recently Cambior. Their drilled out Cu-Zn resource is part of Sultana’s target. Much feasibility and design work remains to be done. The group was drafting plans for a solvent extraction plant and 10-year mine life.

64. Sunshine Property, Targets. Formation Capital Corporation continued with their Sunshine project in the Blackbird Mining District of Lemhi County. The ores are Co-Cu-Au horizons in Proterozoic-age metasediments. The company has done extensive grass roots and drilling over the last few years at the project near Cobalt southwest of Salmon.

65. Drill Road, RAM area. The main target this year was the RAM discovery where Formation drilled 8 metallurgical test holes. The large diameter core was used for a bulk concentrate of the ore zone. Results are being still being evaluated, and overall, the project was moving forward this year.

66. Clear Creek Fire. It was hot this summer in the Salmon-Challis National Forest. Over a million acres burned in Idaho, and the nation’s largest fire was the Clear Creek Fire, shown here from the Deep Creek road. The Formation crew and others had to evacuate at Blackbird, and the RAM zone was torched. Miners at the Beartrack and Yellowjacket mines were also forced to evacuate. “Open Pit mining prevents forest fires.”

67. Map of Helmar-Bovill clay area. A new exploration project this year was in the Helmar-
Bovill clay district of Latah County in north Idaho. Alchemy Ventures was the operator of their project with Northwest Kaolin. Some 10 square miles are underlain with clay from lake beds in the Columbia River Basalts and from residual weathering of granitic rocks. Alchemy was looking at possible markets in the filler and expander applications.

68. Clay pit and sampling. Clay at Bovill consists of kaolinite and halloysite, a hydrated form of kaolinite. The area has had production since 1910 for bricks and refractory liners by numerous companies, including Anaconda, Simplot and A.P. Green.

69. Target Drilling with clay core. Alchemy did extensive marketing studies and drilled 13 holes this year. Target Drilling had to switch from good shiny metamorphics over on Formation’s Sunshine project to drilling 110-foot holes in this really soft stuff. It may be limp but it pays the bills. Alchemy is planning a second phase of more drilling next year on the state lease.

How many of you are looking for industrial minerals?

NN. **BOISE NSTA EXHIBIT - MINERALS EDUCATION**

70. Boise NSTA Display - IGS display on Idaho Mining. In early October, Boise hosted the regional meeting of the National Science Teachers Association. It was the first time NSTA had held a convention in Idaho. SME and the Boise Section of SME sponsored and organized a Minerals Education exhibit for the meeting. The many partners included the Idaho Geological Survey, Idaho Mining Association and many mining companies. The exhibit was a big success. We handed out 700 rock boxes with supporting literature and ushered the teachers through a series of mini-lectures and poster displays. Thanks to all those miners and friends who supported this important effort.

OO. **GSA POSTER - LEMHI PASS**

71. Black Breccia close-up with geiger counter, Lucky Horseshoe mine. Fieldwork this past summer found some very interesting rocks and at the thorium pits near Lemhi Pass in Lemhi County. Thorium and rare earth elements are associated with this specularite-rich, radioactive shear zone and breccia. At the GSA meeting in Reno last month, we suggested that Lemhi Pass may be a variant on the Proterozoic Iron Oxide-Cu-U-REE-Au association (also known as Olympic Dam type deposits) Thorium and uranium (as well as copper and gold elsewhere in the Salmon region) is hosted in the various Proterozoic quartzites and siltites. We hope to do more work in the future, but explorationists may want to consider such a model in the region.

PP. **HOT ISSUES ON FEDERAL LANDS**
(Roadless policy, ecosystem sustainability, national monuments, fires, 3809 regs)
Election Uncertainty. Washington Mint issued this coin toss for those of you who don’t like the current election uncertainty.

Montana Elk in firestorm. Many of you miners probably feel a lot like these elk caught in a firestorm last summer. The fires were only one of several hot issues that impacted federal lands this last year. Will have to wait what the future holds.

**I**  SUNSHINE MINE, # 22 (MINING THE YANKEE LODE)  
(Courtesy of Sunshine Mining Company, a reflective look back at the way it used to be.)

Sunshine mine, # 21. Adit

**R**  SUNSHINE MINE, # 14 (aerial view of mine)

Sunshine mine, # 24 Hoist.

**S**  SUNSHINE MINE, # 20 (surface view)

Sunshine mine, # 25 Surface w/ construction?

**T**  SUNSHINE MINE, # Miners with single jack

Sunshine mine, # 28, group of miners with picks and drill underground.

THANK YOU!
Mining and Exploration in Idaho 2000

Virginia S. Gillerman
Idaho Geological Survey

Slides numbers in notes at the bottom of each slide correspond to descriptions in the following 12 pages of notes for 2000. Letter slides (MM, QQ, etc.) were in a second projector and are section headings. There were also a few extra slides at the end.
Idaho Phosphate Producers - 2000

- Astaris (FMC) Pocatello – P4
- Monsanto Soda Springs – P4
- Agrum Conda – Phos. Acid
- J.R. Simplot Pocatello – Phos. Acid
Slide 1

Coeur d'Alene District News

- 1999: 13 million oz. Ag
- Sunshine Bankruptcy
- Good Mining, Bad Prices
- SuperSulfurfund?

Slide #DD

Slide 2

The Silver Valley river.

Slide #EE

Slide 3

PHOSPHATE 2000:
New Developments

- New PPA plant under construction (Astaris/Agrium JV)
- Selenium research BMP's
- Lease Sales – Simplot high bidder
- Mine extensions

Slide #GG
Slide 7

1996 Reclamation Awards

URS/Nelson Const.
Mobil Oil
Rob Cordtz
Emerald Creek GT.
Gibson Const.
J.R. Simplot Co.
IDOT District 3
Crelia Scott

Bradley Mills Tails
Bradley Mills Tails
Agency Coordinator
Placer Reclamation
Musgrove Reclamation
Smoky Can. Tails
Claytonia Pond

USFS Stewardship

Slide #LL

Slide 8

Bose NS1A Minerals
Education Room

Slide #NN

Slide 9

A picture of a presentation board with text and images.

Slide #OO
Slide 10

Hot Issues on Federal Land?
- Roadless Policy
- Ecosystem Sustainability
- National Monuments
- Fires
- BLM 3609 regs

Slide #PP

Slide 11

Slide #Active Mines, 2000

Slide 12

Slide #Exploration 2000
Slide #Monsanto elemental phos plant, Soda Springs