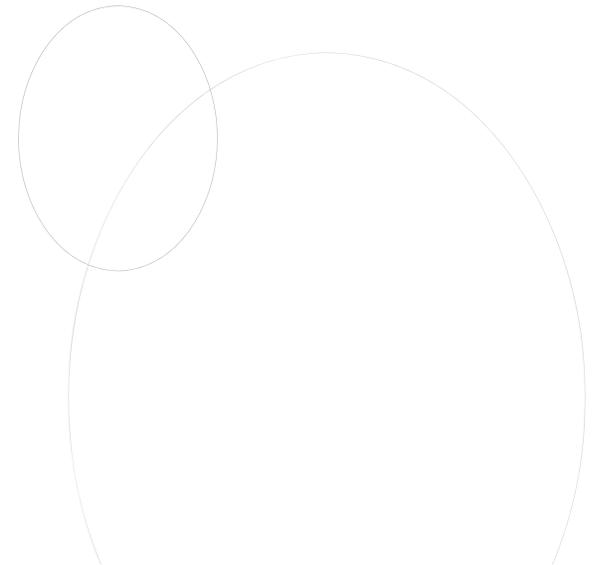
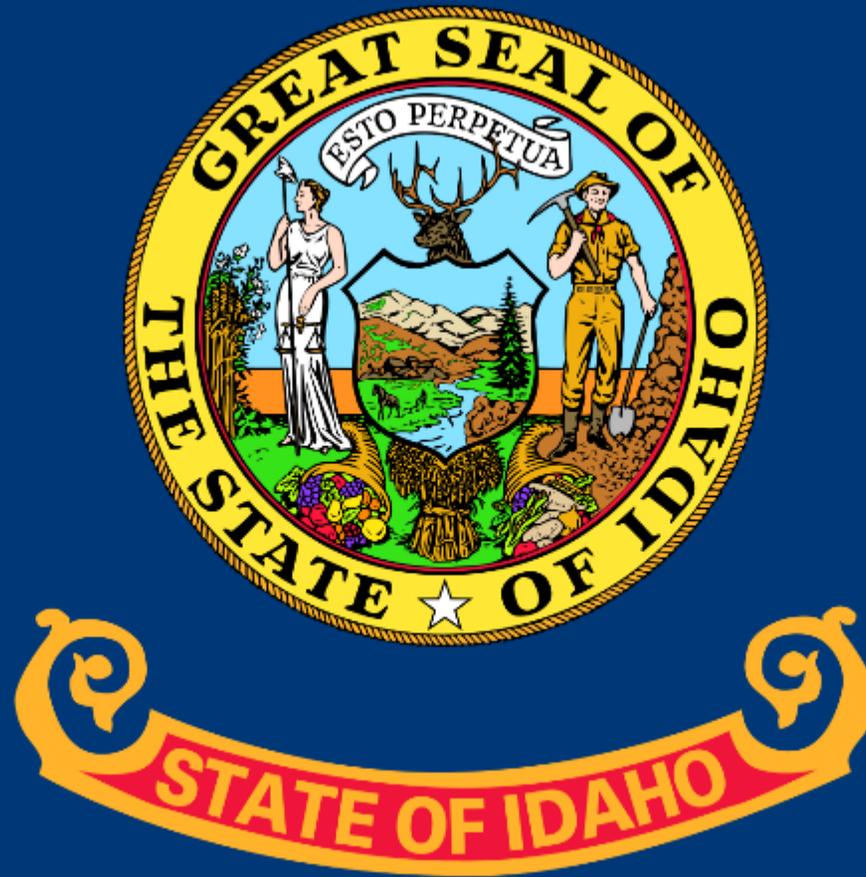




THE STATE OF MINING IN IDAHO

TODD DRAGE, IDAHO DEPARTMENT OF LANDS





Mining has played an important role in Idaho's history. The discovery of gold resulted in the establishment of the Idaho territory in 1863. Mining in Idaho provides jobs and materials that are important to the economy.



MINING IN THE STATE OF IDAHO

How Idaho's State Mining Regulation Are Organized

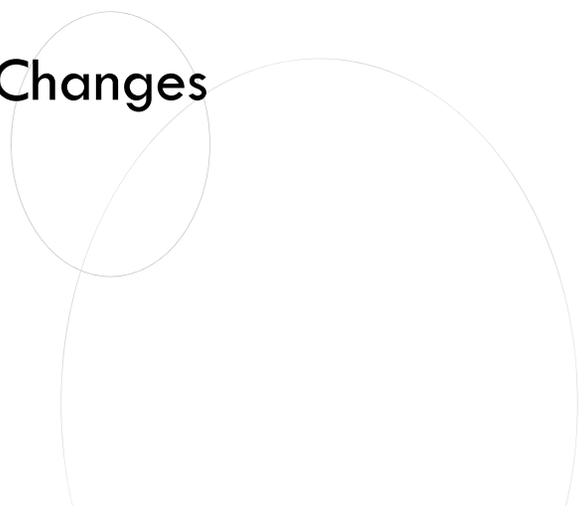
The Department of Lands Role

Idaho's Mining Specific Regulations

Mining Permitting by the Numbers

2019 Highlights

Recent Legislative Changes





MINING PERMITTING

STATE OF IDAHO

Idaho Department of Environmental Quality

Air Quality Construction Permit

Point of Compliance Permit (POC)

Cyanidation Permit

Drinking Water System License

Solid Waste Permit (Assumes Tier II or III)

Wastewater Treatment System Permit

Water Reuse Permit

Idaho Department of Water Resources (IDWR)

Consumptive & Non-Consumptive Water Rights

Mine Tailings Impoundment Structure Permit

Stream Alteration Permit

STATE OF IDAHO (continued)

State Historic Preservation Office (SHPO)

Section 106 Consultation

Department of Health and Welfare

Septic System Approval (O&M Permit thru EPA)

Food Establishment License

Idaho Department of Lands (IDL)

Permanent Closure Plan (Cyanidation)

Mine Reclamation and Closure Plan (RCP)

Idaho Transportation Department (ITD)

Special Use Permits

FEDERAL PERMITS

US Forest Service

Road Use Permit

Mineral Material Permit

Timber Sale Permit

US Environmental Protection Agency

NPDES (National Pollutant Discharge Elimination System)/IPDES

Construction General Permit (CGP)

Multi-Sector General Permit (MSGP)

Spill Prevention, Control, and Countermeasure (SPCC) Plan

EPA Generator ID Number

SARA Title III – EPCRA Reporting

TSCA – TRI

Federal Communications Commission (FCC)

Treasury Department (BATFE)

Mine Safety and Health Administration (MSHA)

COUNTY

Conditional Use Permits

Building Permits

Road Use Permits

STATE AGENCIES

*Dept. of Lands

*Dept. of Environmental
Quality

*Dept. of Water Resources

*Dept. of Fish and Game





IDAHO DEPT. OF ENVIRONMENTAL QUALITY

Air Quality Construction Permit

Idaho Pollution Discharge Elimination System (IPDES)

Groundwater Point of Compliance Permit

Cyanidation Permit

Drinking Water System License

Landfill Solid Waste Permit

Wastewater Treatment System Permit

Water Reuse Permit



IDAHO DEPARTMENT OF WATER QUALITY

Water Rights Permits

Mine Tailings Impoundment Structure Permit

Stream Alteration Permit

Well Permits

Recreation Mining Permit (for panning and small suction dredges)



IDAHO DEPARTMENT OF LANDS

Exploration Notification

Dredge and Placer Mining Permit

Mining Reclamation and Closure Plan

Permanent Closure Plan (for Cyanidation)

****Idaho Fish and Game is involved in reviewing and providing comments****

****Also administers the State's Abandoned Mine Lands program****



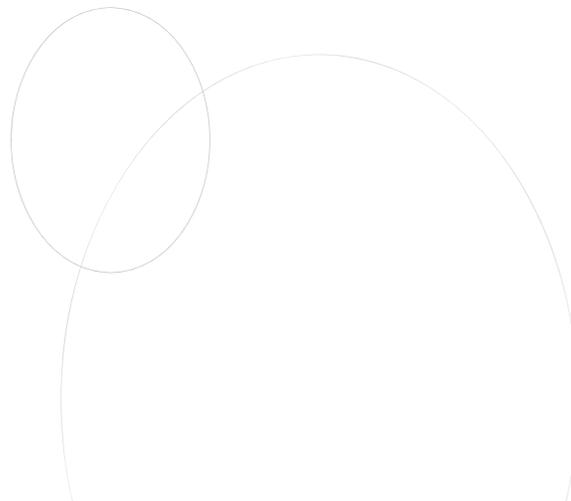
IDAHO DEPARTMENT OF LANDS

- Idaho's State Lands Agency
- IDL's primary responsibility is to state endowment trust lands under a constitutional mandate to maximize long term financial returns to a number of State institutions, mainly public schools.
- Overseen by State Land Board:
 - Governor,
 - Attorney General,
 - Secretary of State
 - State Controller
 - State Superintendent of Schools



IDAHO DEPARTMENT OF LANDS

- Also, IDL Regulates: Mining, Uses of Public Water Ways, and Logging Operations
- Why IDL?





EARLY MINING - PANNING





EARLY MINING - ROCKER





EARLY MINING - ROCKER



SIMPLE PANNING GAVE WAY TO INDUSTRIAL SCALE PLACER MINING



Hydraulic Giant, Rocky Bar



HYDRAULIC GIANT, PIONEERVILLE



MORE ADVANCED MINING TECHNIQUES



Bucket Line Dredge, Klondike, Canada, 1915

● ● ●

BUCKET LINE DREDGE, YANKEE FORK SALMON RIVER, 1950S





DREDGE TAILINGS, OROVILLE, CA





DREDGE TAILINGS, MIDDLE FORK BOISE



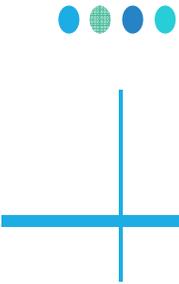


DREDGE TAILINGS, GRIMES CREEK



DREDGE TAILINGS, YANKEE FORK





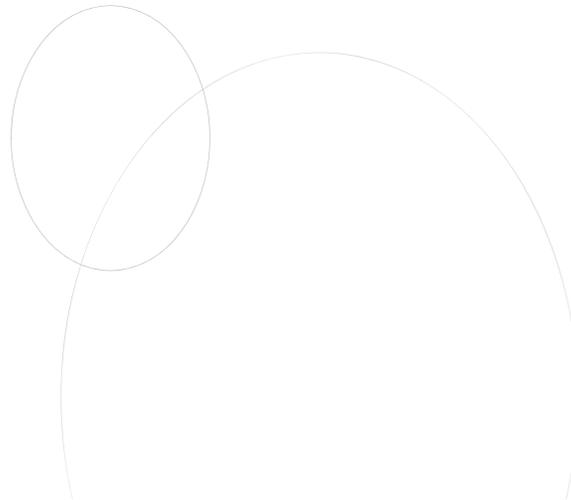
UNREGULATED ACTIVITY

- Sportsmen grew tired of sediment filled streams impacting fisheries
- Dredge and Placer Mining Act was passed by Voter Initiative in 1954
- This requires operation and reclamation plans, bonding, maintenance of water quality standards, and reclamation
- Very active program through the mid 1990s, but has tapered off
- The Act was passed prior to the creation of the state's environmental agency



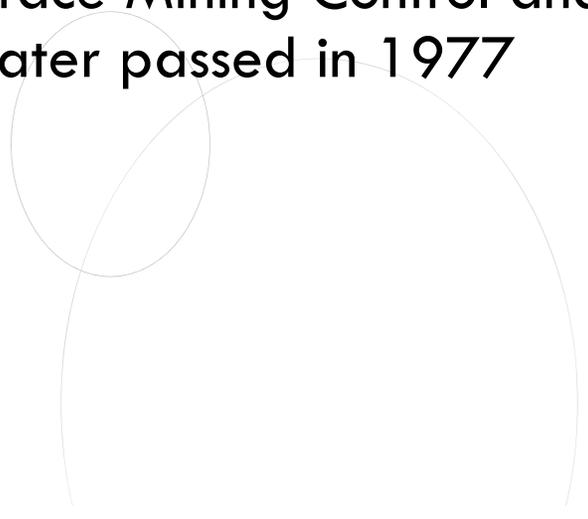
STATEMENT OF PURPOSE

“To protect the lands, streams and watercourses within the state, from destruction by dredge mining and by placer mining, and to preserve the same for the enjoyment, use and benefit of all of the people, and that clean water in the streams of Idaho is in the public interest”





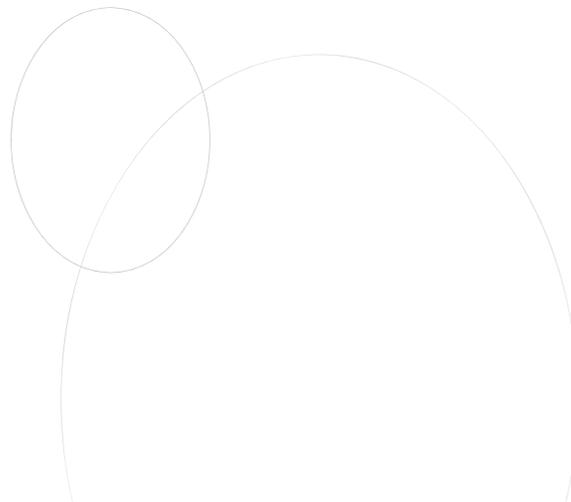
IDAHO'S SURFACE MINING ACT (SMA)

- Early 1970's was time of emerging resource protection and there was talk of surface mining regulation at the national level.
 - Idaho's industry wanted to have a hand in shaping the coming regulations
 - Surface Mining Act passed in 1972
 - Nationally the Surface Mining Control and Reclamation Act (SMCRA) was later passed in 1977
- 



STATEMENT OF PURPOSE

“provide for the protection of the public health, safety and welfare, through measures to reclaim the surface of all the lands within the state disturbed by exploration and surface mining operations and measures to assure the proper closure of cyanidation facilities and thereby conserve natural resources, aid in the protection of wildlife, domestic animals, aquatic resources, and reduce soil erosion.”





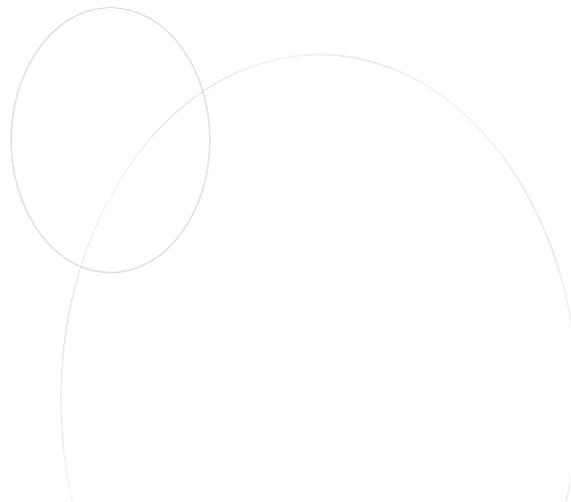
SMA REQUIREMENTS

- Submit a Reclamation Plan for Approval
- Perform Reclamation
 - Ridges of overburden shall be leveled in such manner as to have a minimum width of ten (10) feet at the top.
 - Peaks of overburden shall be leveled in such a manner as to have a minimum width of fifteen (15) feet at the top.
 - Overburden piles shall be reasonably prepared to control erosion.
 - Where water run-off from affected lands results in stream or lake siltation in excess of that which normally results from run-off, the operator shall prepare affected lands and adjacent premises under the control of the operator as necessary to meet the requirements authorized under [chapter 1, title 39](#), Idaho Code.
 - Roads which are abandoned shall be cross-ditched insofar as necessary to avoid erosion gullies.
 - Exploration drill holes shall be plugged or otherwise left so as to eliminate hazards to humans or animals.
 - Abandoned affected lands shall be topped to the extent that such overburden is reasonably available from the pit, with that type of overburden which is conducive to the control of erosion or the growth of the vegetation which the operator elects to plant thereon.
 - The operator shall conduct revegetation activities on the mined areas, overburden piles, and abandoned roads in accordance with the provisions of this act.
 - Tailings ponds shall be reasonably prepared in such a condition that they will not constitute a hazard to human or animal life.
- Provide Adequate “Bonding” for the Surface Reclamation required



SMA REQUIREMENTS TODAY

- Perform Reclamation - These standards have remained unchanged since 1972
- The SMA was revised in 1997 to show ARD on a map
- Revised again in 2005 for to add a new category for Cyanidation
- In 2019 to legislation was passed that “Updated this 50 year old legislation”





ABANDONED MINE LANDS ACT

- Idaho passed the Abandoned Mine Reclamation Act in 1994
- In 1999 One-third of the Idaho Mine License Tax was diverted into a fund for reclaiming abandoned mines
- The Act is written such that it is a voluntary program for reclaiming abandoned mines
- The Act is written to prioritize safety hazards first followed by environmental effects





TYPES OF MINES IN IDAHO

- Underground Mining – Not regulated for reclamation (yet...)
- Dredge and Placer Mines
- Exploration Operations
- Surface Mines – 3 types defined by Idaho Rule
 - Sand, gravel, and decorative stone
 - Hardrock, phosphate, and heavy industrial
 - Mines using cyanide



EXPLORATION NOTIFICATION

- Within seven (7) days after beginning exploration operations. The notice shall include the following:
 - The name and address of the operator;
 - The location of the operation and the starting date and estimated completion date;
 - The anticipated size of the operation, and the general method of operation.
- For Reclamation, lands must be reclaimed within a year in accordance with the minimal requirements of the Surface Mining Act



SAND, GRAVEL, AND DECORATIVE STONE

- Required to submit a Reclamation Plan that:
 - site-specific nonpoint sources of water quality impacts upon adjacent surface waters and the BMPs the operator will use to control such impacts
 - Scaled cross-sections by length and height, showing planned surface profiles and slopes after reclamation
 - Roads to be reclaimed
 - A revegetation plan
 - The planned reclamation of wash plant or sediment ponds;
- Also required to provide “Bonding” to cover the cost of reclamation



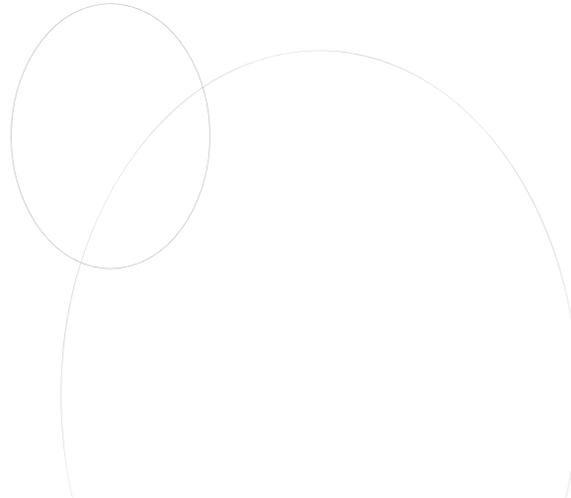
HARDROCK, PHOSPHATE, HEAVY INDUSTRIAL

- Required to submit a Reclamation Plan that:
 - All of the requirement of a Sand and Gravel
 - An Operations Plan
 - Baseline information for groundwater and surface water
 - Geotechnical certification of certain mine facilities from a Licensed Engineer
- Also required to provide “Bonding” to cover the cost of reclamation



MINES USING CYANIDE

- All the requirements of a Hardrock mine
- The schedule to complete permanent closure activities, including neutralization of process waters and material stabilization
- Provide a water management plan
- Water treatment details





MINES USING CYANIDE (CONTINUED)

- Engineered caps and covers designs to minimize the interaction of meteoric waters, surface waters, and groundwaters with wastes containing pollutants that are likely to be mobilized and discharged to waters of the state.
- Monitoring plans for surface and ground water during closure and post-closure periods
- Also required to provide “Bonding” to cover the cost of reclamation

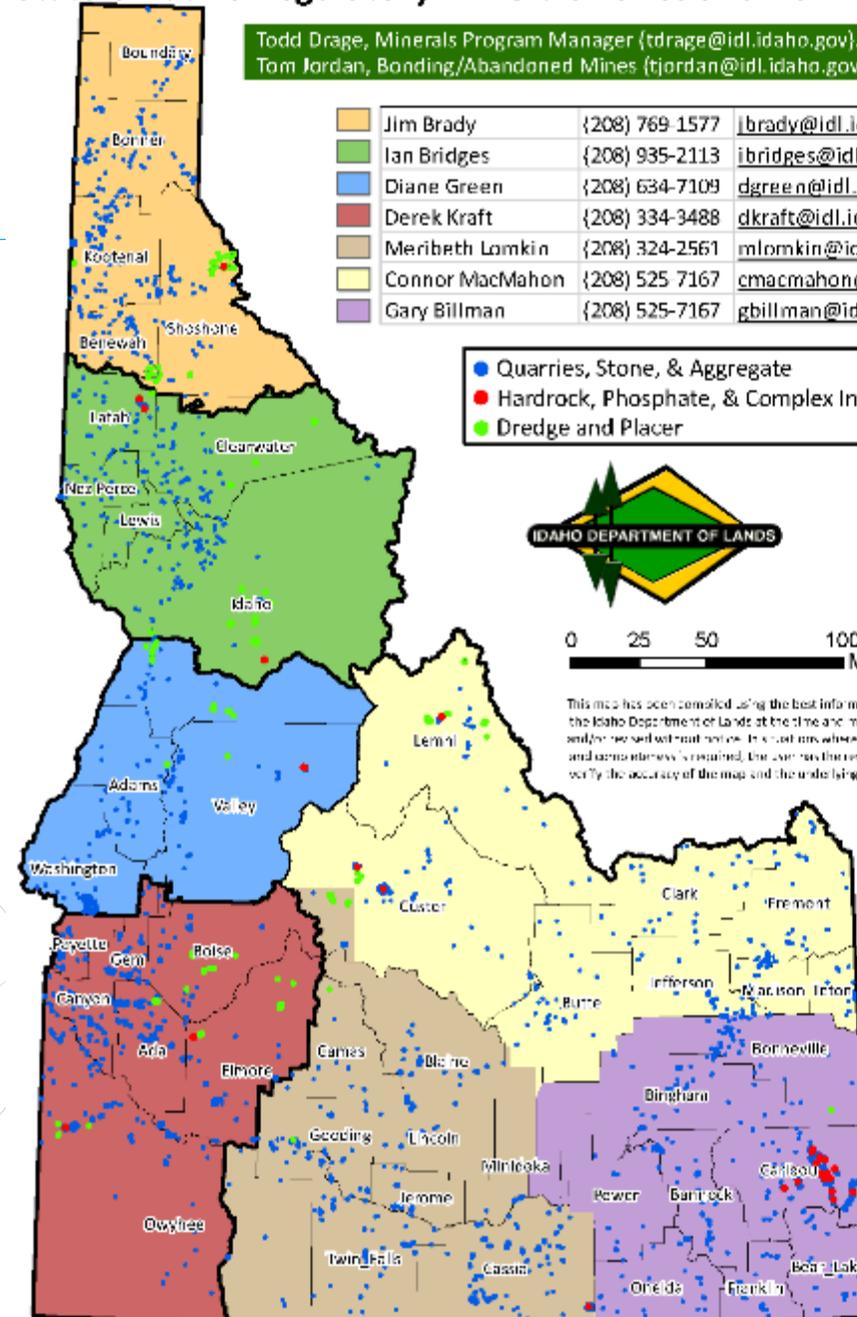
State of Idaho Regulatory Minerals Zones and Permitting Leads

Todd Drage, Minerals Program Manager (tdrage@idl.idaho.gov)...(208) 334-0247
 Tom Jordan, Bonding/Abandoned Mines (tjordan@idl.idaho.gov)...(208) 334-0294

PERMIT NUMBERS

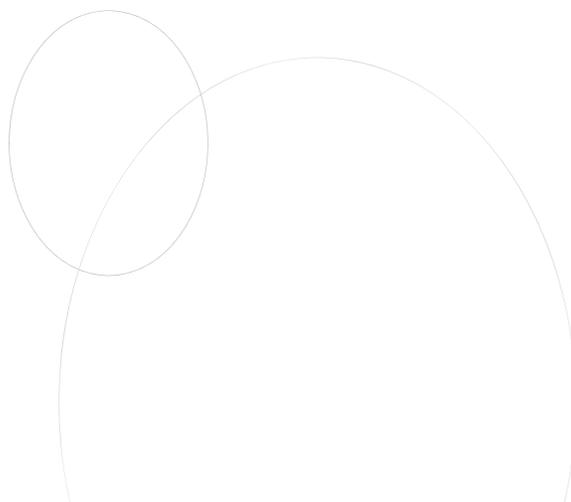
Mine Type	Permits
Dredge and Placer Permits	26
Sand and Gravel	1,526
Hardrock, Phosphate & Complex Industrial	28
Cyanidation Mines	0

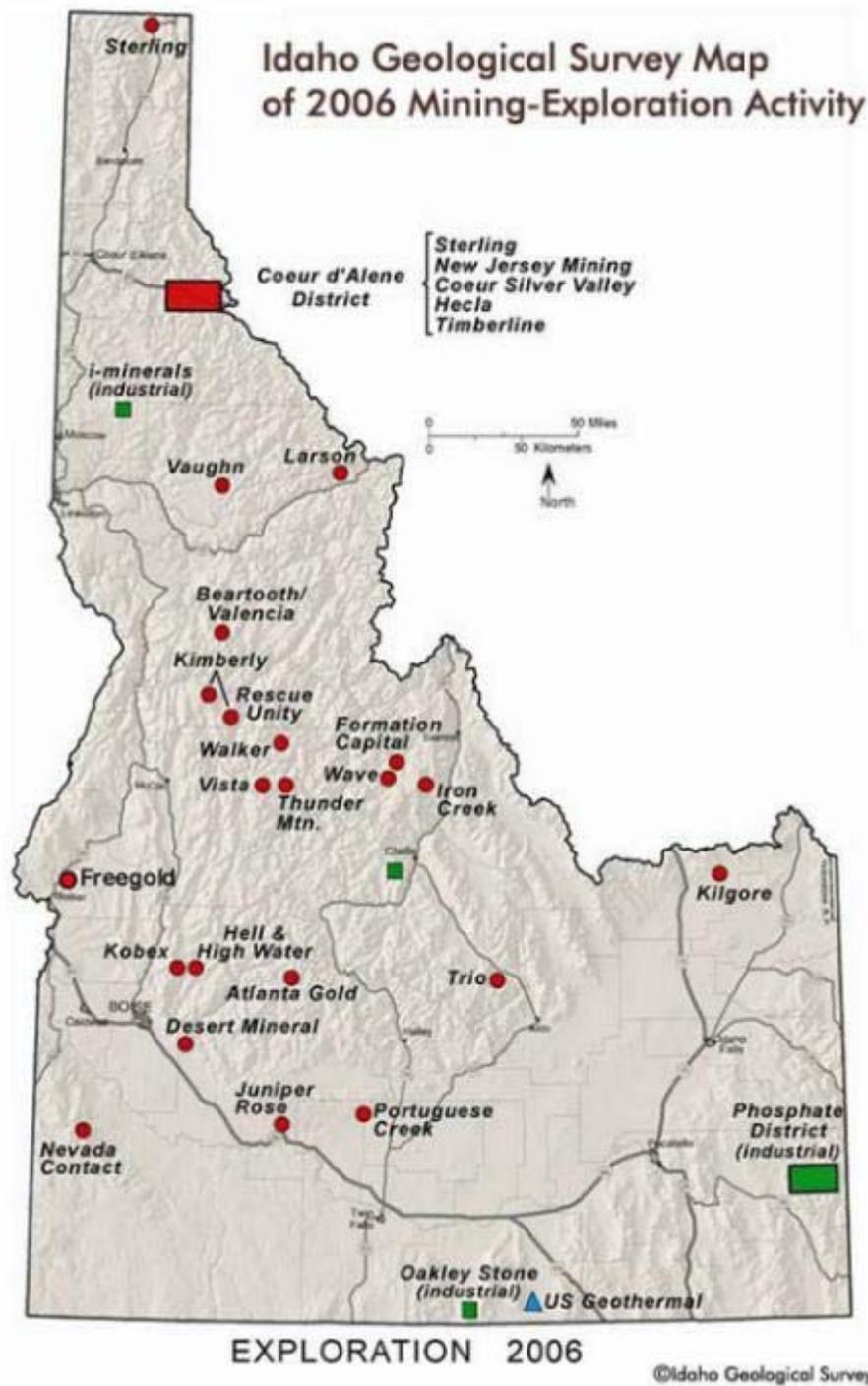
Jim Brady	(208) 769-1577	jbrady@idl.idaho.gov
Ian Bridges	(208) 935-2113	ibridges@idl.idaho.gov
Diane Green	(208) 634-7109	dgreen@idl.idaho.gov
Derek Kraft	(208) 334-3488	dkraft@idl.idaho.gov
Meribeth Lamkin	(208) 324-2561	mlomkin@idl.idaho.gov
Connor MacMahon	(208) 525-7167	cmacmahon@idl.idaho.gov
Gary Billman	(208) 525-7167	gbillman@idl.idaho.gov





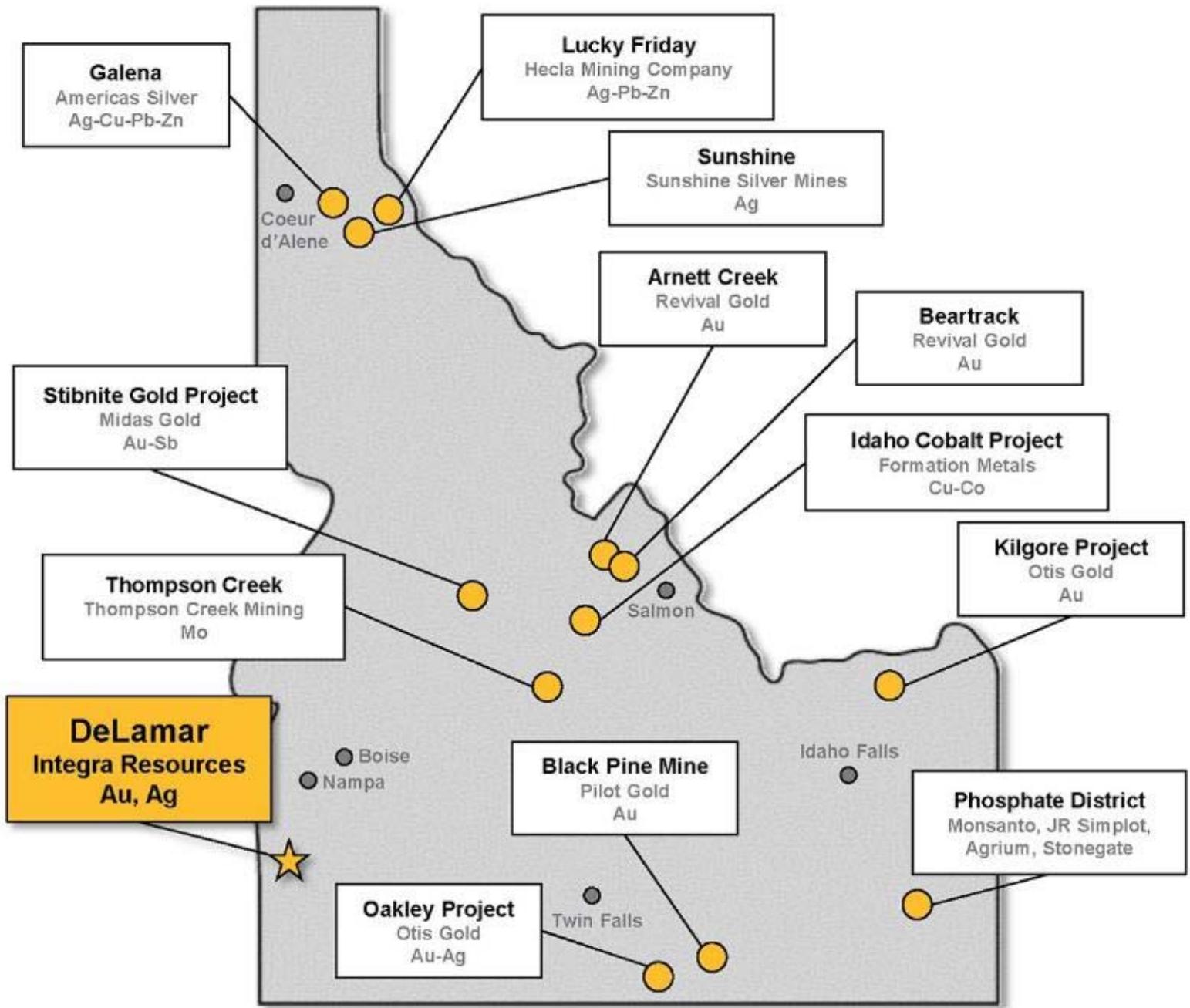
2019 MINING HIGHLIGHTS





EXPLORATION 2006

©Idaho Geological Survey





BEARTRACK MINE

- Located in Lemhi County, Id near the town of Salmon
- Former open pit, cyanide heap leach gold mine
- Modern era operations between 1994 and 2000
- All mine operations and gold production ceased in 2000 and has been in reclamation and closure since
- Currently in active exploration



BEARTRACK MINE OPEN PIT





BEARTRACK MINE HEAP LEACH CAP









DELAMAR MINE

- Located in Owyhee County, Id near the town of Silver City
- Former open pit, silver and gold mine
- Modern era operations between 1977 and 1998
- All mine operations and gold production ceased in 1998 and has been in reclamation and closure since
- Currently in active exploration



DELAMAR MAIN OPEN PITS





DELAMAR TAILINGS STORAGE FACILITY





DELAMAR RECLAMATION



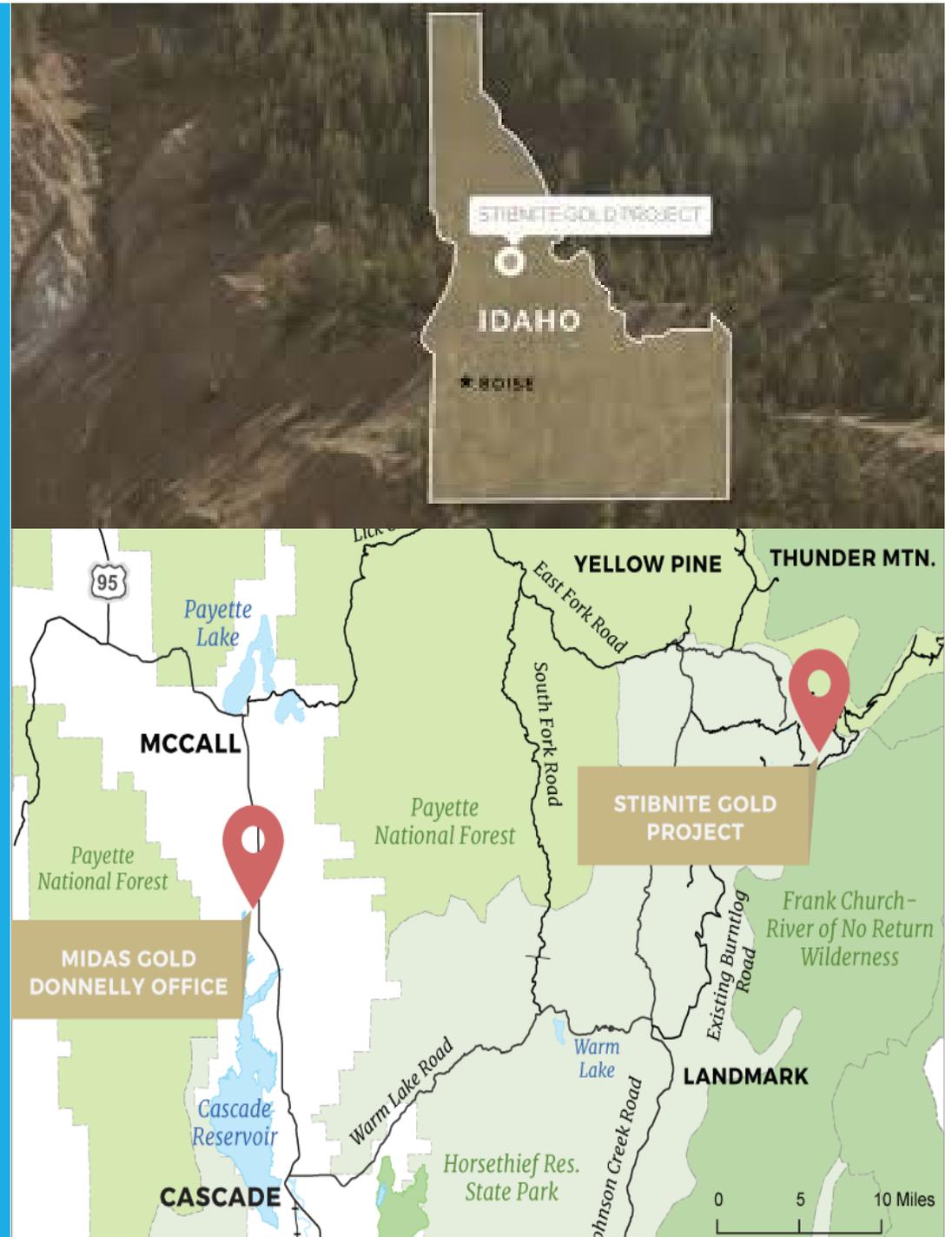


DELAMAR RECLAMATION



STIBNITE GOLD PROJECT - PERMITTING

Midas Gold's Stibnite Gold Project is located at Stibnite in Valley County Id, approximately 92 miles by air and 144 miles by road northeast of Boise, Idaho, 44 air miles northeast of Cascade, Idaho, and 10 air miles east of Yellow Pine, Idaho.





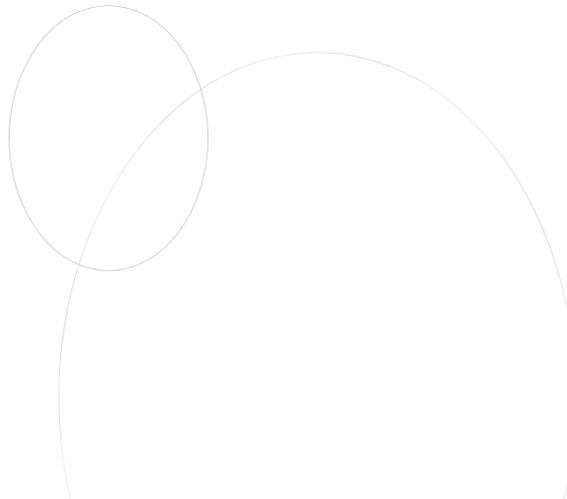
AREA OF HISTORIC MINING DISTURBANCE





THE PROJECT

- 12 year mine life
- \$337,000 oz/year Au
- 8th largest Gold Reserve in the US
- At 1.67 g/t – 4th highest grade open pit in the US
- Additional Antimony and Silver byproduct credits





CURRENTLY IN NEPA PROCESS

- Submitted a Plan of Restoration and Operations (The PRO) to the USFS in
- Forest Service accepted as completed in December 2016
- Draft Environmental Impact Statement (“Draft EIS”) for public comment in late Q4 2019
- Seven federal, state and local agencies involved in permitting the Project signed the Stibnite Joint Review Process Memorandum of Understanding (“MOU”) in 2017



IDAHO'S PHOSPHATE MINING



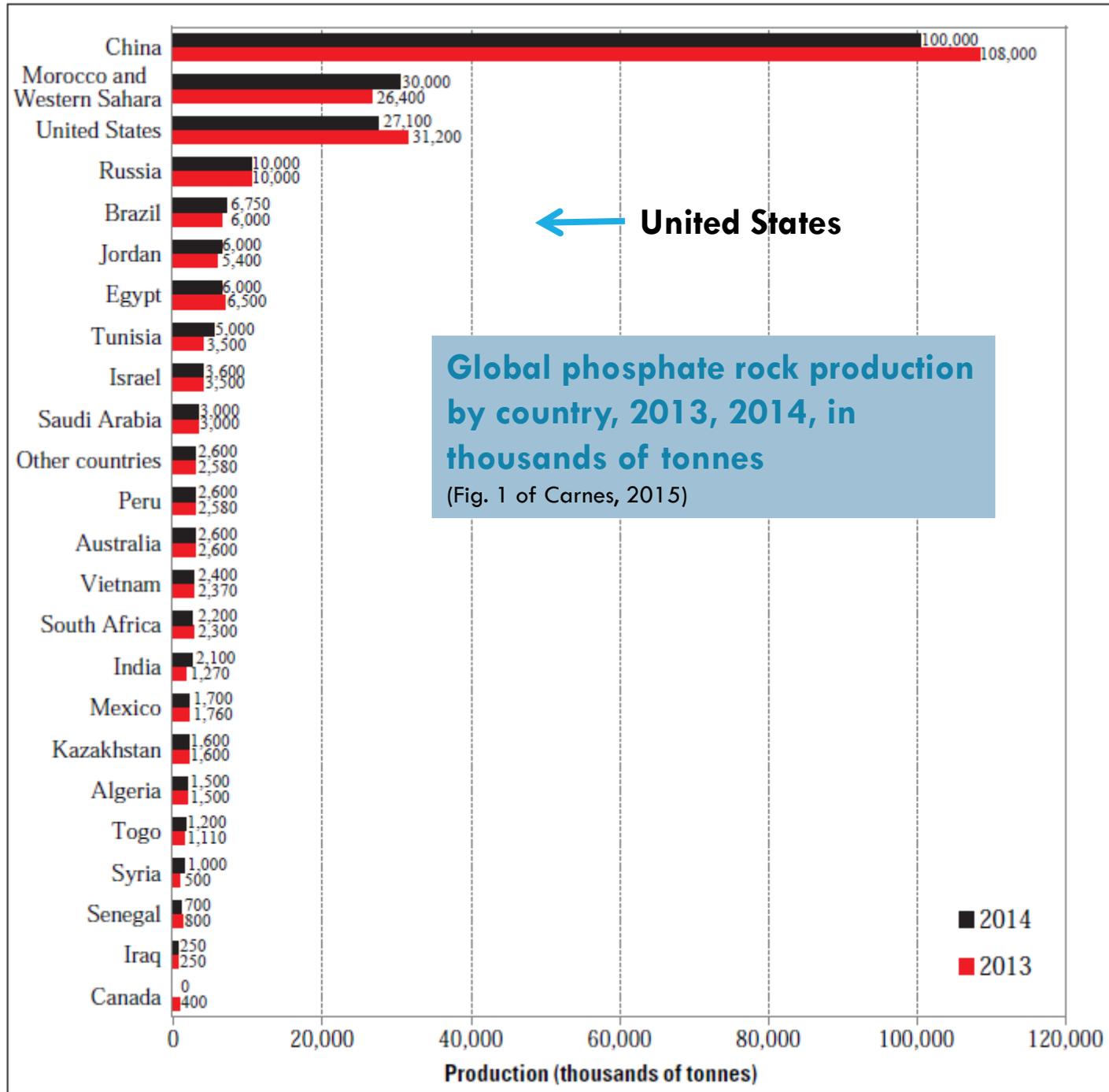
Phosphate is a generic “fertilizer” term
Phosphorus (P) is an unstable chemical element essential to all living things

Forms the sugar-phosphate backbone of DNA & RNA
Helps with energy transfer in cells as part of ATP



PHOSPHATE IS USED IN MANY PRODUCTS, INCLUDING:

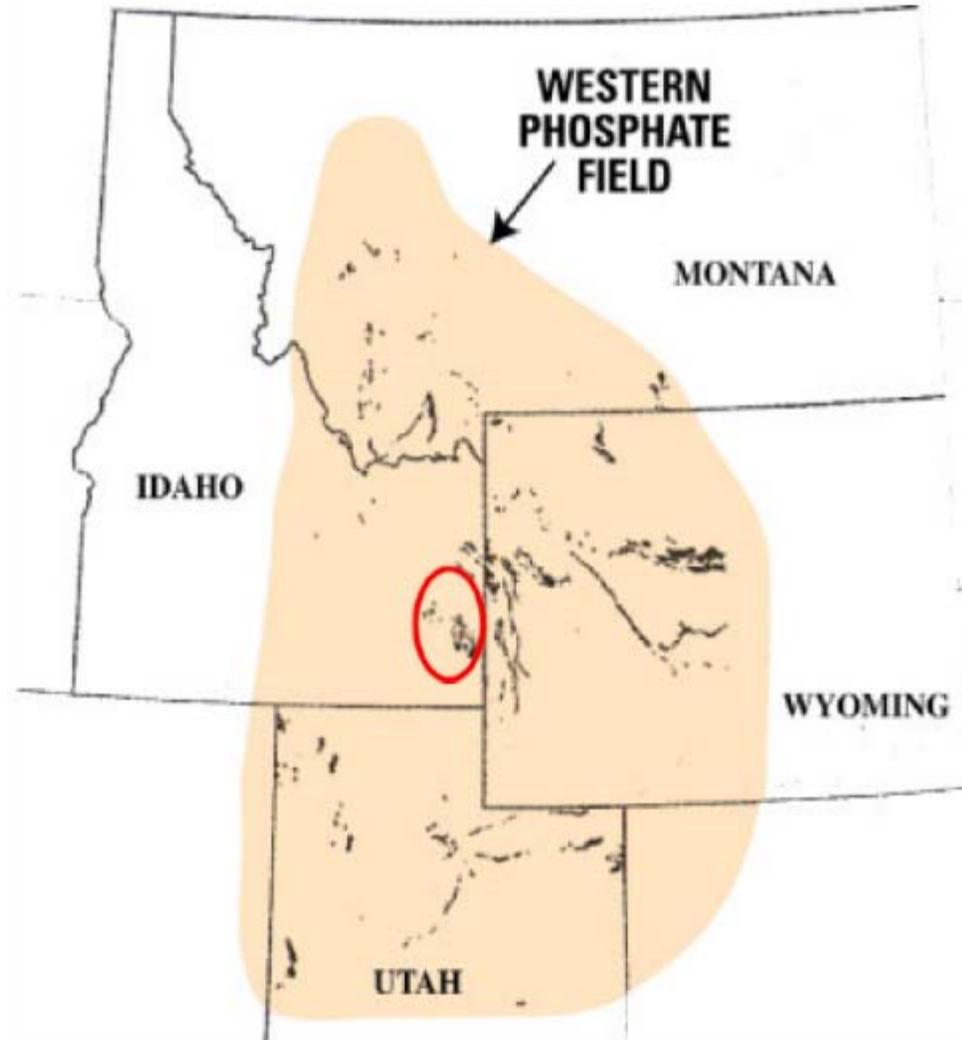
- Herbicide (Roundup)
- Fertilizer
- Animal Feed
- Metal Finishing
- Flame Retardant
- Toothpaste
- Carbonated Beverages (tangy zing that dissolves enamel)





PHOSPHATE IN SOUTHEAST IDAHO

- Some of the richest deposits in the U.S.
- Idaho's leading mineral commodity by value
- **\$500 Million** in value-added products to U.S.
- **15%** of the nation's phosphate per year
- **4%** of the world's phosphate per year
- **4** active open-pit mines
- **6** additional mines or expansions in the permitting stage
- **9** inactive mines
- **1,800** direct employees in SE Idaho



From U.S. Geological Survey Fact Sheet 100-02

Map of the Western Phosphate Field, and approximate outcrops of Permian Phosphoria Formation and related rocks. Modified from Hein, et al, 2004.

PERMIAN PHOSPHORIA FORMATION

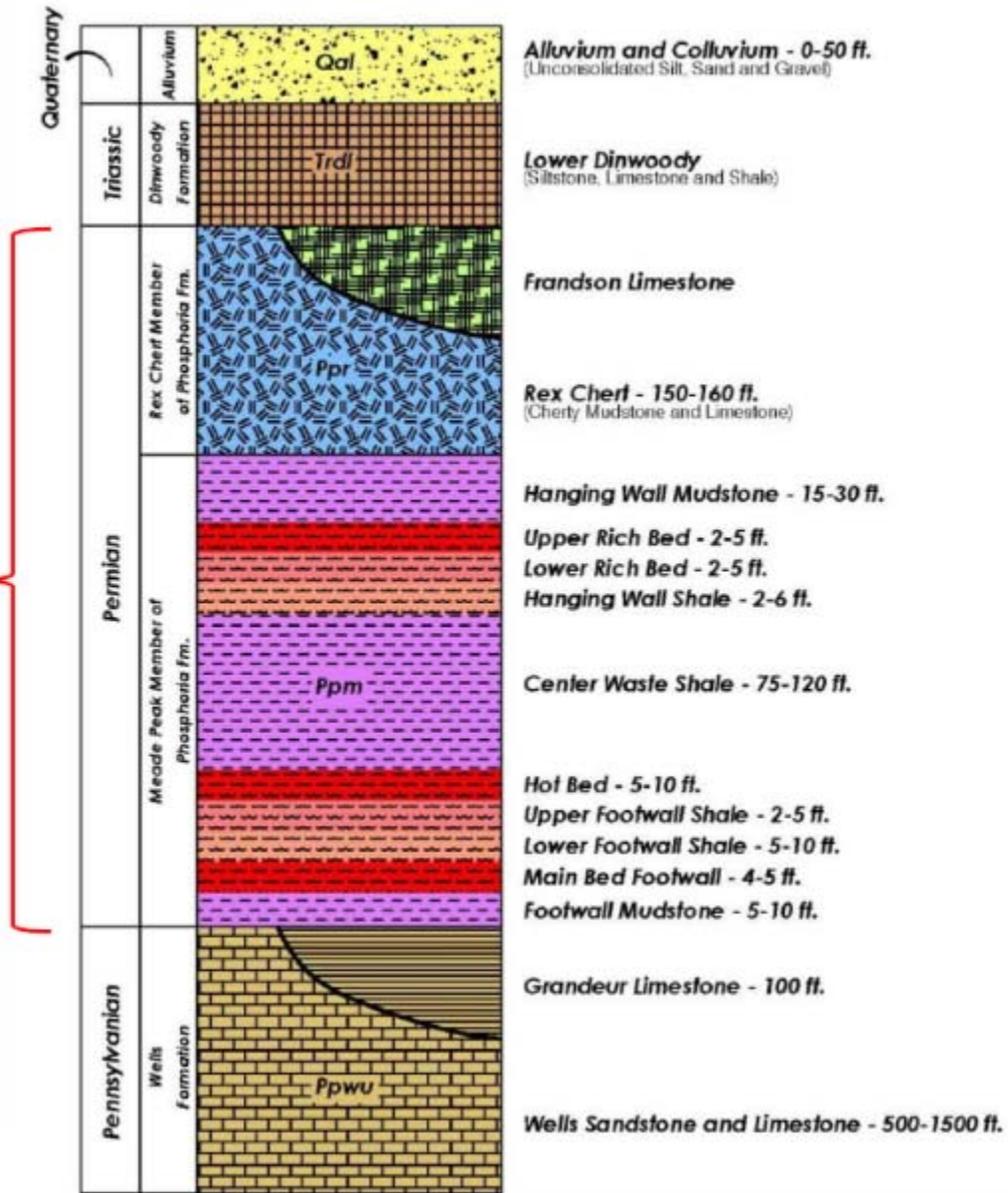
- Deposited in a restricted, shallow, warm sea
- Represents about 15 million years of deposition
- Deposited about 250 million years ago
- Phosphate was from organic matter
- Meade Peak Member is the ore-bearing unit
- Movable units avg. about 30% P_2O_5 (phosphorous pentoxide)



Pics by Nobu Tamura
<https://commons.wikimedia.org>



Phosphoria Formation

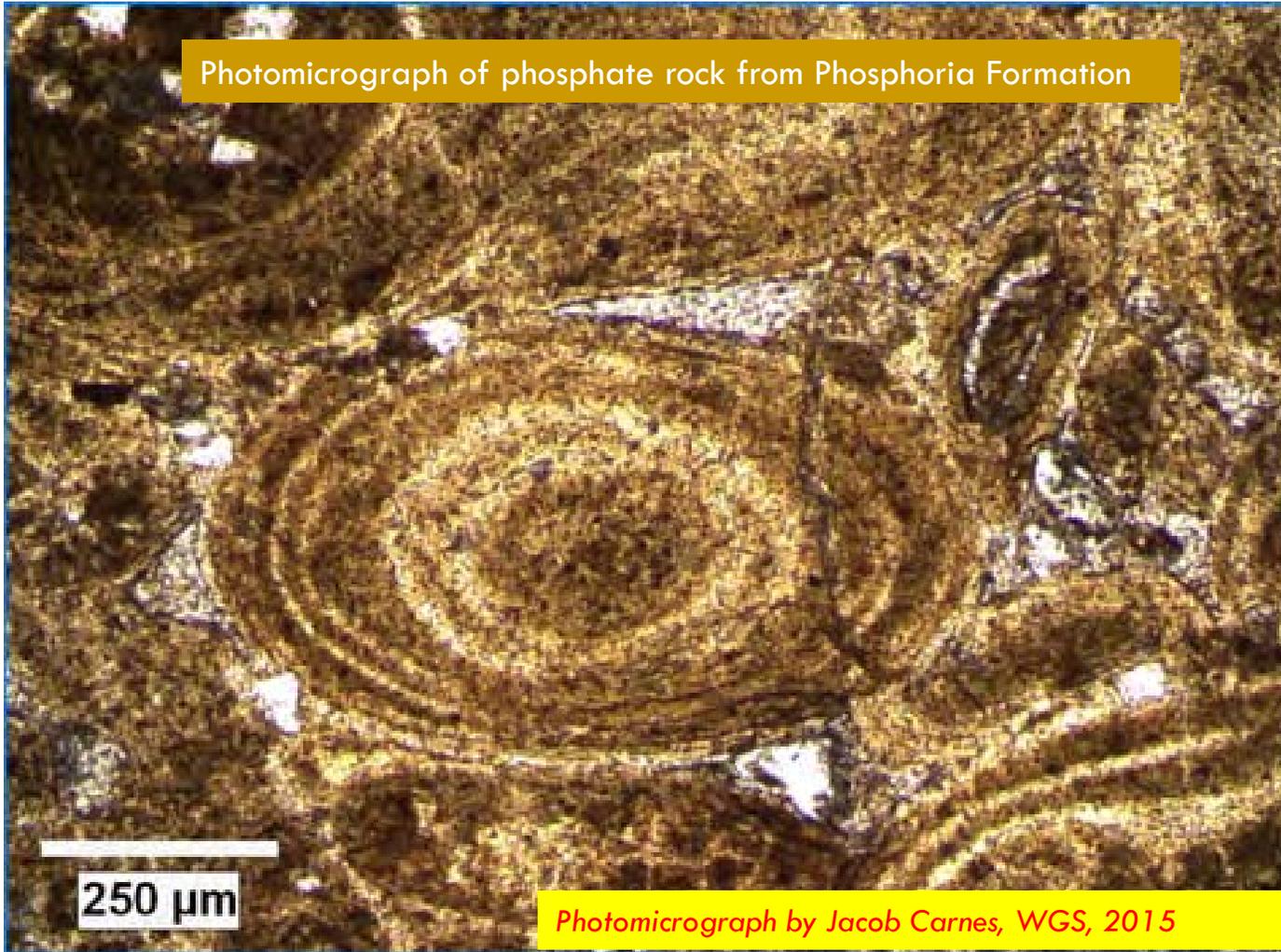




Phosphoria Formation (black rocks are the Meade Peak member) south of Jackson, Wyo.
Courtesy Eric Hiatt, U. Wisconsin



Outcrop of the Meade Peak Member of the Permian Phosphoria Formation
U.S. Hwy 26, approx. 3 miles SW of Hoback Junction, Teton County, Wyo.
Photo by Jacob Carnes, WGS, 2015





CHERTY SHALE AND
REX CHERT MEMBERS

MEADE PEAKE MEMBER
MEADE PEAKE MEMBER

WELLS FM

DINWOODY FM
(OFF PHOTO)

UPPER
ORE

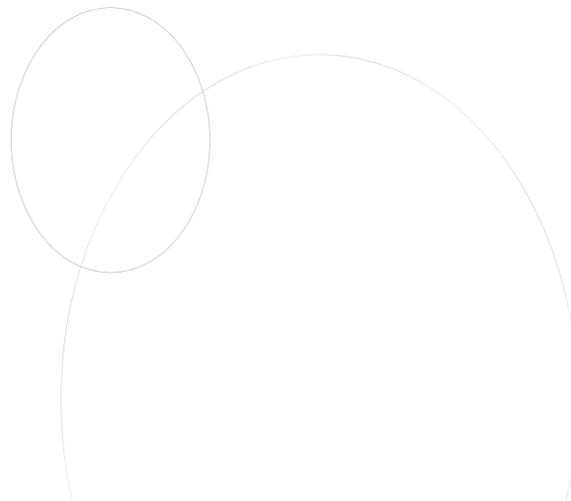
CENTER
WASTE
SHALES

LOWER
ORE



FEDERAL PHOSPHATE VALUE TO IDAHO

- **\$14.5 Million** from Mineral Leases in FY2015
- **\$7.2 Million** Returned to the State of Idaho
- **\$10.8 Million** from Mineral Leases in FY2016
- **\$5.4 Million** Returned to the State of Idaho
- **\$5.2 Million** from Phosphate
- **\$54,000** from Oil & Gas





FEDERAL PHOSPHATE STAFF (BLM AND FOREST SERVICE TEAM)

- **12.5 FTE's (11.5 professionals) dedicated to Phosphate in SE ID**
- **3.5 FTE's Forest Service + 9 FTE's BLM**
- **Each active mine has at least ONE dedicated FTE plus backup**
 - = that's all they worry about**
- **Additional professional staff in Boise to assist**
- **Most complicated leasing /royalty / mining program within the BLM nationally¹**
 - **1) Source – Dave Schwarz IDL Staffer Opinion**



4 ACTIVE OPEN - PIT MINES EACH WITH

Blackfoot Bridge

Lanes Creek

Rasmussen Valley

Smoky Canyon





6 ADDITIONAL MINES OR EXPANSIONS IN THE PERMITTING STAGE

Dairy Syncline

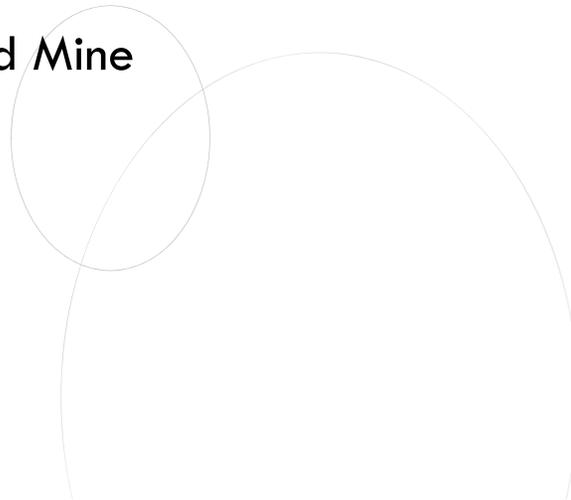
Husky/North Dry Ridge

East Smoky Panel Mine

Caldwell Canyon

Trail Creek

Paris Hills Underground Mine





9 INACTIVE MINES

Enoch Valley

Dry Valley

Champ

Wooley Valley

Conda

North Maybe

South Maybe

Ballard

Gay





BAYER (FORMERLY MONSANTO)

- P4 Production (subsidiary) owns mining and processing facilities
- Elemental phosphorus is used to make Roundup herbicide, plus used in other industries to make fire retardants, leavening agents, aviation fluids, and carbonated beverages.
- P4 employs 375 people directly, and an additional 395 contractors
- Blackfoot Bridge Mine – permits approved 2011; mining started 2013; reserves through 2022;
- Caldwell Canyon + historic Ballard Mine – Permitting Caldwell Canyon; Ballard mine operated in 1950's – 1960's; All BLM mineral estate;



BLACKFOOT BRIDGE MIDDLE PIT





BLACKFOOT BRIDGE OVERVIEW





BLACKFOOT BRIDGE WASTE STORAGE





ITAFOSS

- Over 900 jobs in Caribou County alone, directly & via multiplier
- \$120 Million per year in wages and benefits
- \$4 Million in total royalty payments
- \$24 Million in State taxes
- Mining at Rasmussen Valley and Lanes Creek Mines
- Lanes Creek will be mined out by 2020. Private mineral estate.
- Rasmussen Valley Mine EIS was approved in 2017; projected to produce until January 2023.
- Husky 1 – North Dry Ridge . Permitting just re-started



RASMUSSEN RIDGE — IN RECLAMATION





LANES CREEK MINE – IN OPERATION





LANES CREEK OVERVIEW





RASMUSSEN VALLEY — RECENTLY PERMITTED





SIMPLOT

- Smoky Canyon Mine: open-pit, milling ore into fine powder, mixing powdered ore with water to create a slurry. 87-mile underground pipeline to Don plant in Pocatello
- Don Plant produces dry and liquid phosphate, nitrogen fertilizers, feed phosphates, and purified phosphoric acid
- Smoky Canyon Mine:
 - 2 million tons ore annually
 - \$40 million per year spent locally plus
 - \$20 million in local wages and benefits
- Simplot Dairy Syncline EIS. mine life of 30 years.



MINING PHOSPHATE

ANFO (or /FO)

- ammonium nitrate/fuel oil is a widely used bulk industrial explosive
- 94% porous prilled ammonium nitrate (NH_4NO_3) (the “ ”) = oxidizing agent and absorbent for the fuel, and
- 6% # 2 fuel oil (the “FO”)



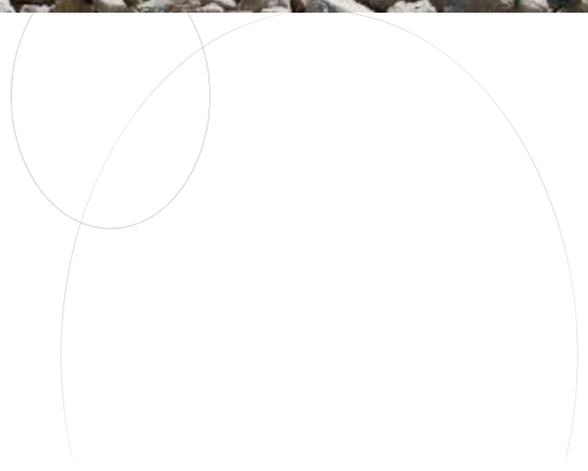


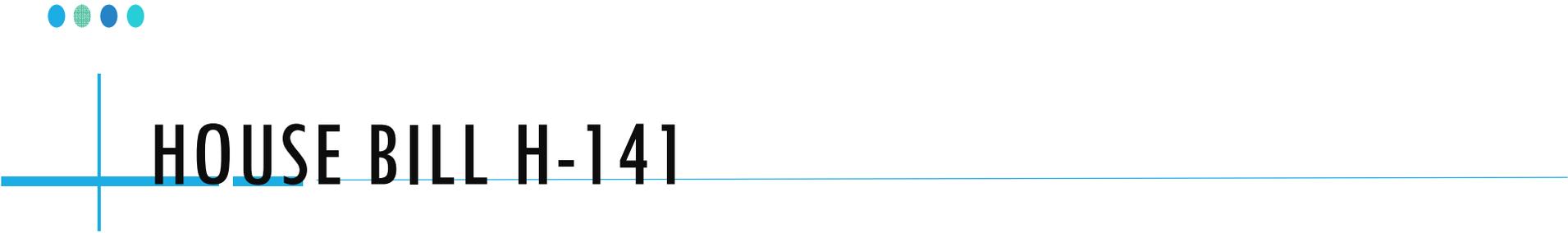
150-ton end dump truck

26-cubic-yard front shovel



SMOKEY CANYON – WRSF RECLAIM





HOUSE BILL H-141

- The passage of House Bill 141 during the 2019 legislative session significantly amended Idaho's Surface Mining Act.
- As read in both the House and Senate committees and floor, H-141 updates regulations that have remained relatively unchanged for approximately 50 years
- The purpose was simple:
 - To accurately reflect current industry and regulatory practices
 - To protect the lands and taxpayers of Idaho
- During testimony Representative Jim Addis the bill's sponsor stated that "Today, mining is prepared to lead Idaho in the future"



HOUSE BILL H-141 (CONTINUED)

- Regulating surface impacts of underground mines
- Allowing cost recovery
- Incorporating water treatment and post-closure activities in reclamation plans, as needed
- Requiring that all reclamation tasks in a plan be completed and covered by financial assurance
- Estimating actual cost of reclamation and post-closure activities;
- Allowing additional types of financial assurance, such as corporate guarantees and trusts
- Reviewing every plan at least once every five years
- Implementing a temporary rule by August 1, 2019.



Notice Of Upcoming Negotiated Rulemakings for Idaho’s Mining Regulations

Visit www.idl.idaho.gov/rulemaking/index.html for meeting times, locations, and additional information, including drafts and research materials.

KEY DATES:

May 1 – 20.03.02 Draft rule text posted to IDL’s website

Meeting schedule:

May 9 – Boise (20.03.02 only)

May 15 – Boise (20.03.02 only)

May 22 – Boise (20.03.02 only)

May 29 – Boise (20.03.02 only)

June 5 – 20.03.03 Draft rule text posted to IDL’s website

Meeting schedule:

June 12 – Pocatello (20.03.02 and 20.03.03)

June 13 – Challis (20.03.02 and 20.03.03)

June 18 – Coeur d’Alene (20.03.02 and 20.03.03)

June 19 – McCall (20.03.02 and 20.03.03)

June 20 – Boise (20.03.02 and 20.03.03)

June 27 – Boise (20.03.02 only)

July 11 – Boise (20.03.02 only)

July 15 – Last day to submit comments for negotiated rulemaking

Please submit written comments by email to rulemaking@idl.idaho.gov or by mail.



Idaho Department of Lands
PO Box 83720
Boise ID 83720-0050

20.03.02 Primary Contact

Eric Wilson

Phone: 208-334-0261

Email: rulemaking@idl.idaho.gov

20.03.03 Primary Contact

Todd Drage

Phone: 208-334-0247

Email: rulemaking@idl.idaho.gov

PLEASE
PLACE
STAMP
HERE

«Entity Name»
«First Name»«Last Name»
«Additional Address
Information»
«City» «State» «ZIP
Code»«ZIP Code2»

“Trusted Stewards From Main Street to Mountaintop”



THANK YOU



tdrage@idl.idaho.gov



www.idl.idaho.gov

