



Permitting the Dry Ridge Phosphate Exploration Project in Southeast Idaho

Presented by:
Cascade Earth Sciences

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Presented to:
2016 Mine Design, Operations and Closure
Conference
Fairmont Hot Springs, MT

**DRY RIDGE PHOSPHATE EXPLORATION PROJECT
ENVIRONMENTAL ASSESSMENT
DOI-BLM-ID-1020-2014-0051-EA**



United States Department of the Interior
Bureau of Land Management
Idaho Falls District
1405 Hollipark Drive
Idaho Falls, Idaho 83403



and

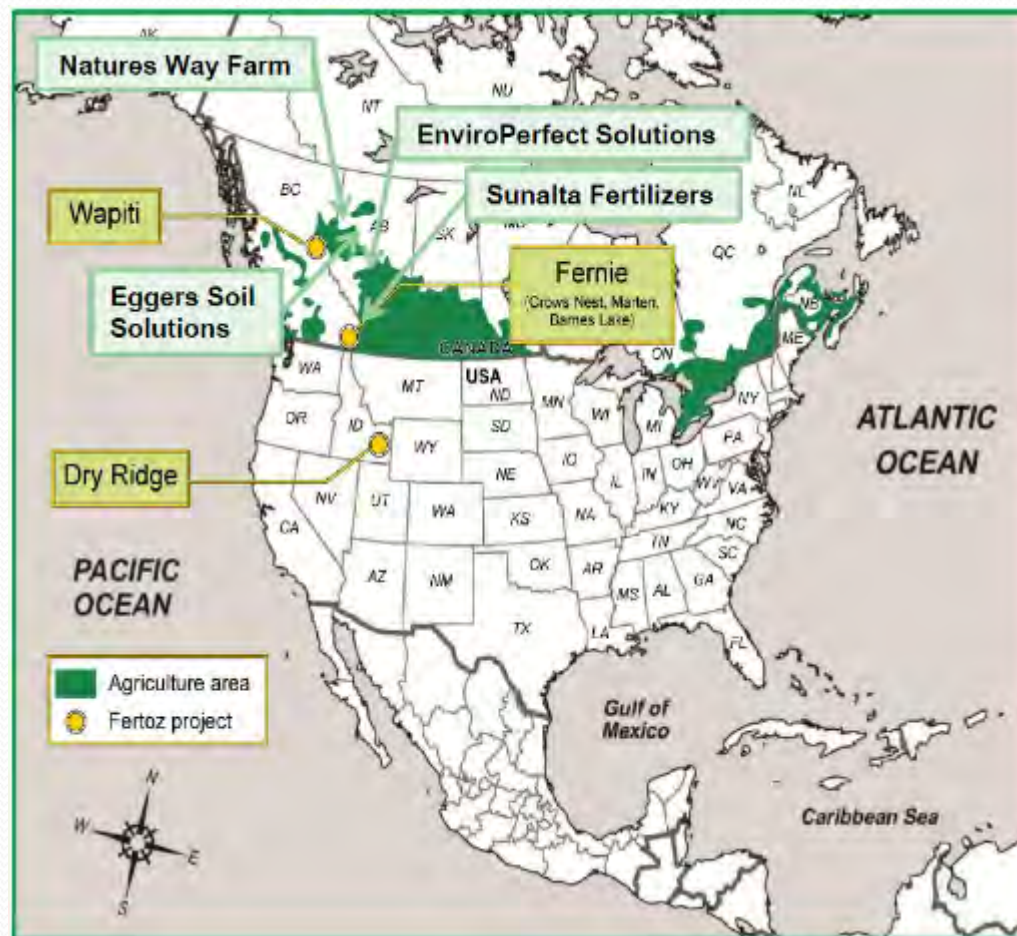
United States Department of Agriculture
United States Forest Service
Caribou-Targhee National Forest
1405 Hollipark Drive
Idaho Falls, Idaho 83403

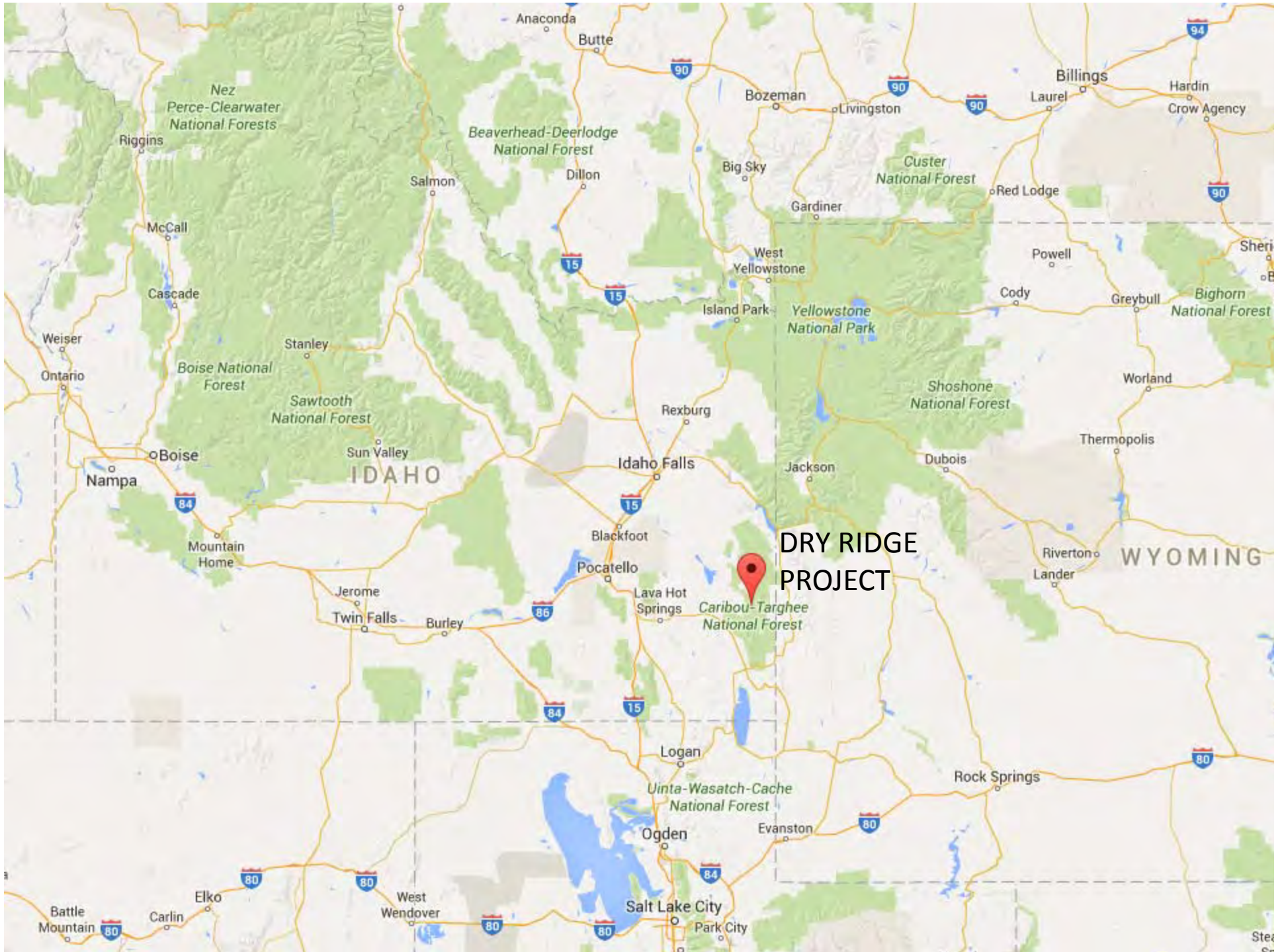


MAY 2015

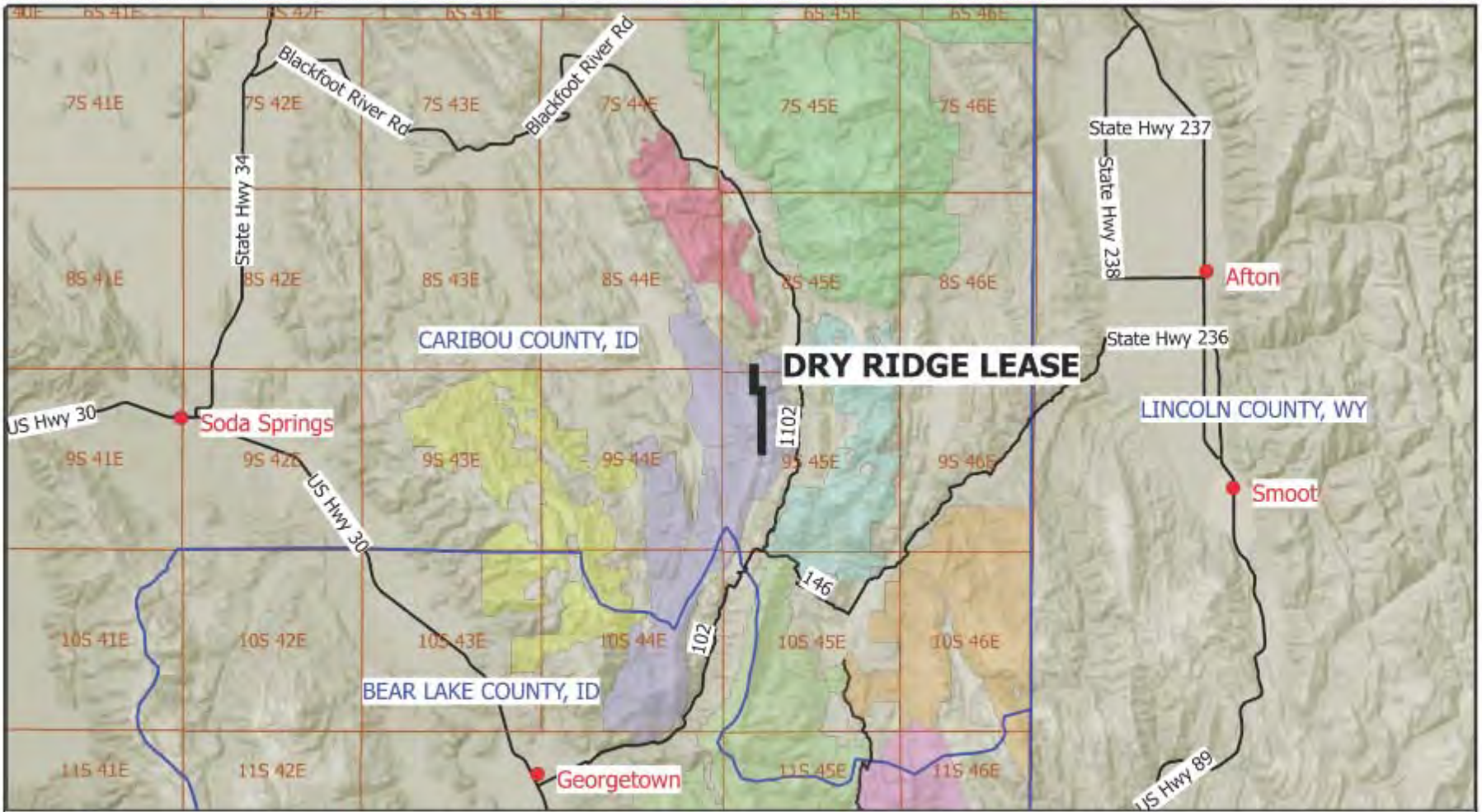
Fertoz Limited (ASX: FTZ)

- Australian company
- IPO Sep 2013
- Mining/selling high-grade phosphate deposits for organic farmers
- First sale Jan 2016
- FertAg JV in AUS for Asian-sourced phosphate





**DRY RIDGE
PROJECT**



0 10 20 miles

Figure 1-1 Project Location

Idaho Roadless Areas

- Dry Ridge
- Gannett-Spring Creek
- Huckleberry Basin
- Meade Peak
- Red Mountain
- Sage Creek
- Schmid Peak
- Stump Creek

Coordinates: NAD83

Sources: Google 2014 base map, US Census Bureau 2011 TIGER/line shp, USFS 2000 mineral leases

PROJECT NUMBER:	2014220003
DATE:	11/7/2014
FILE:	Dry Ridge Phosphate.ags
PREP BY:	DJB
REVIEWED BY:	RKB
REVISIONS:	

**Dry Ridge Phosphate Exploration EA
Caribou-Targhee National Forest**

**Fertoz USA LLC
Brisbane, Queensland, AUS**



CASCADE EARTH SCIENCES
A Valmont Industries Company

Stratigraphy

- Target: Permian Meade Peak Phosphatic Shale Member of Phosphoria Formation
- Below Rex Chert of Phosphoria
- Above Wells Formation

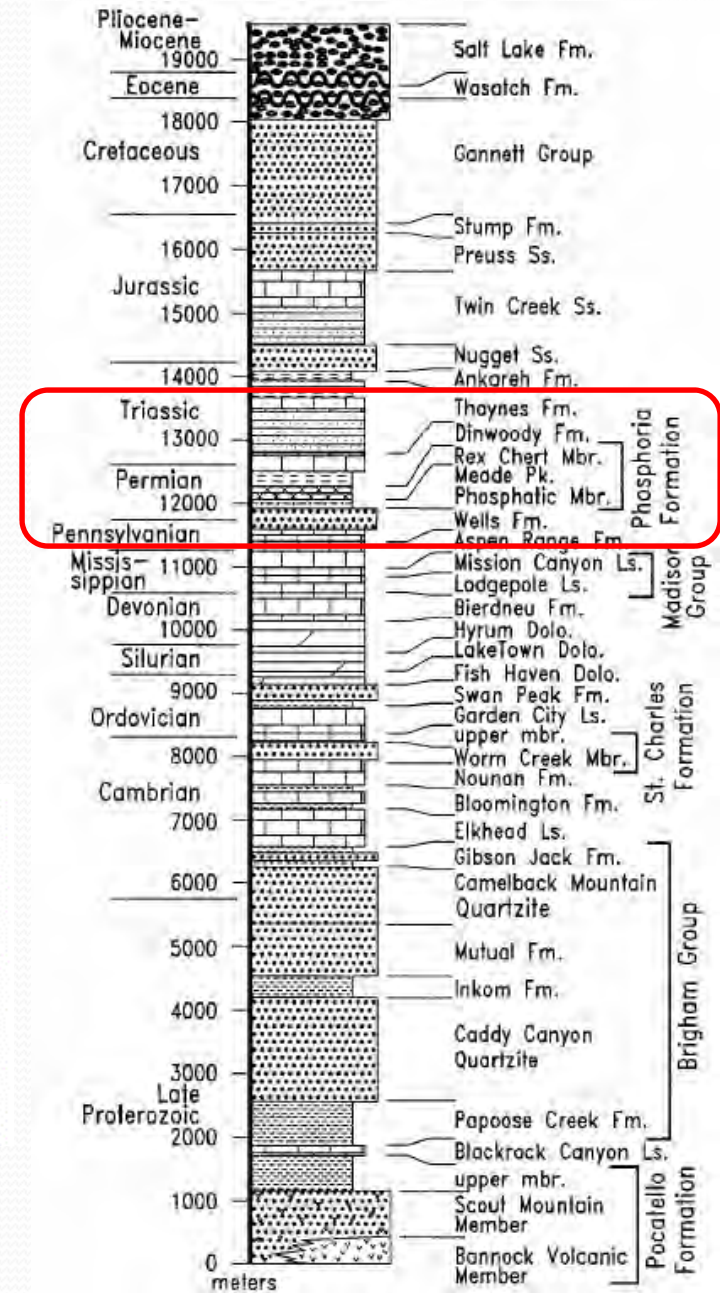
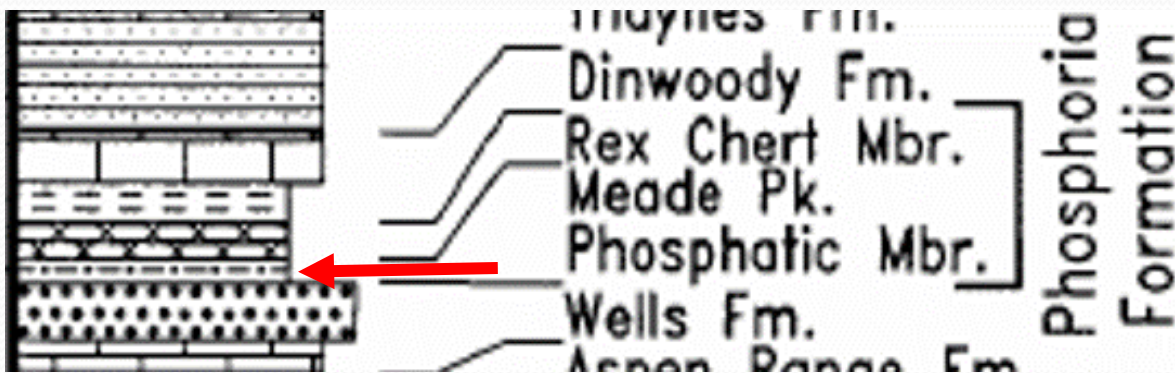
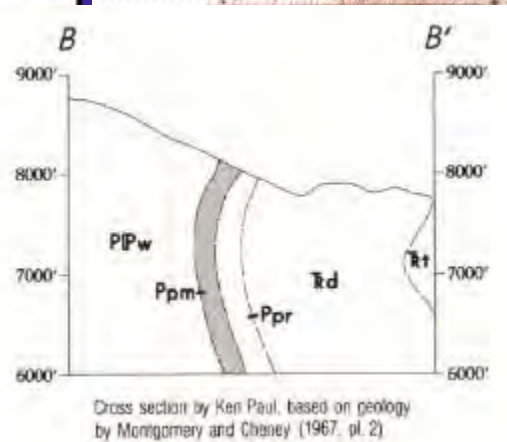
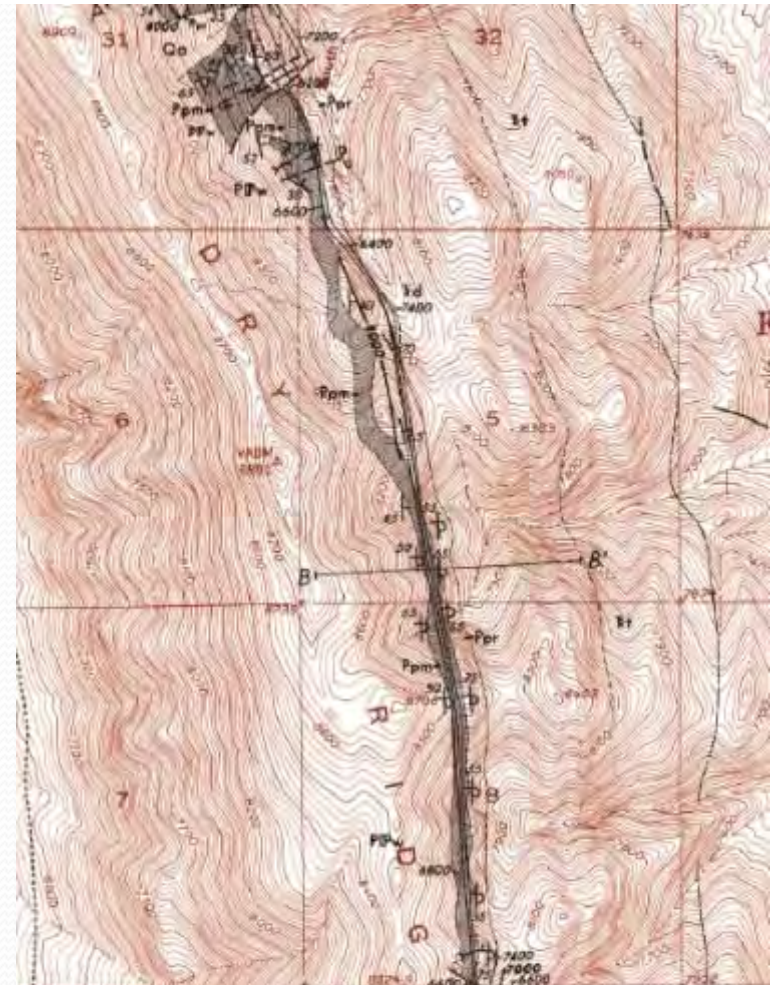
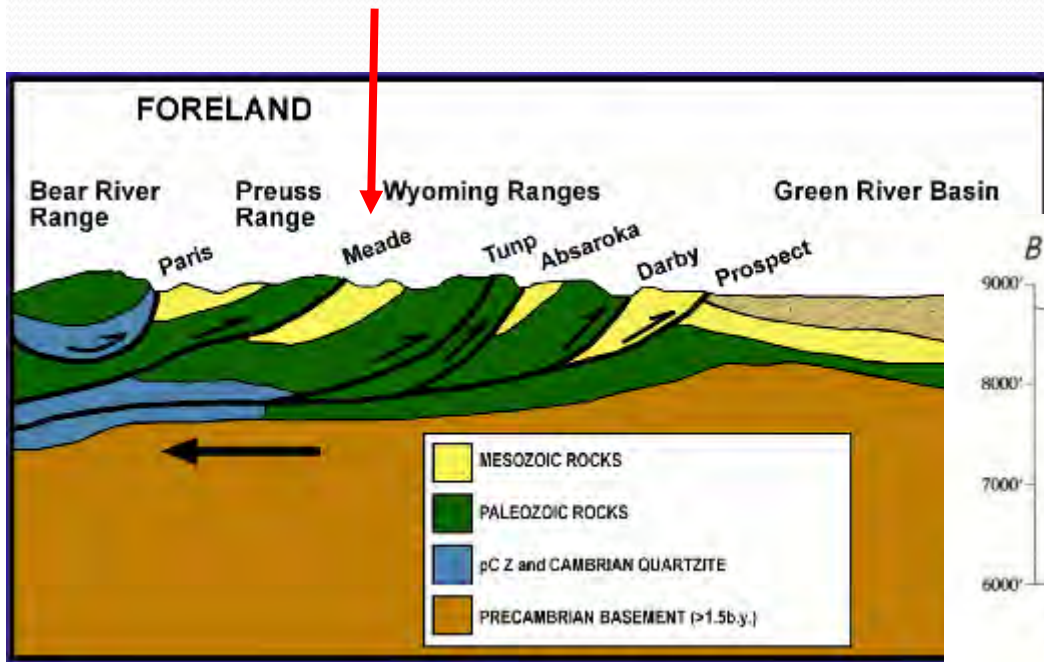


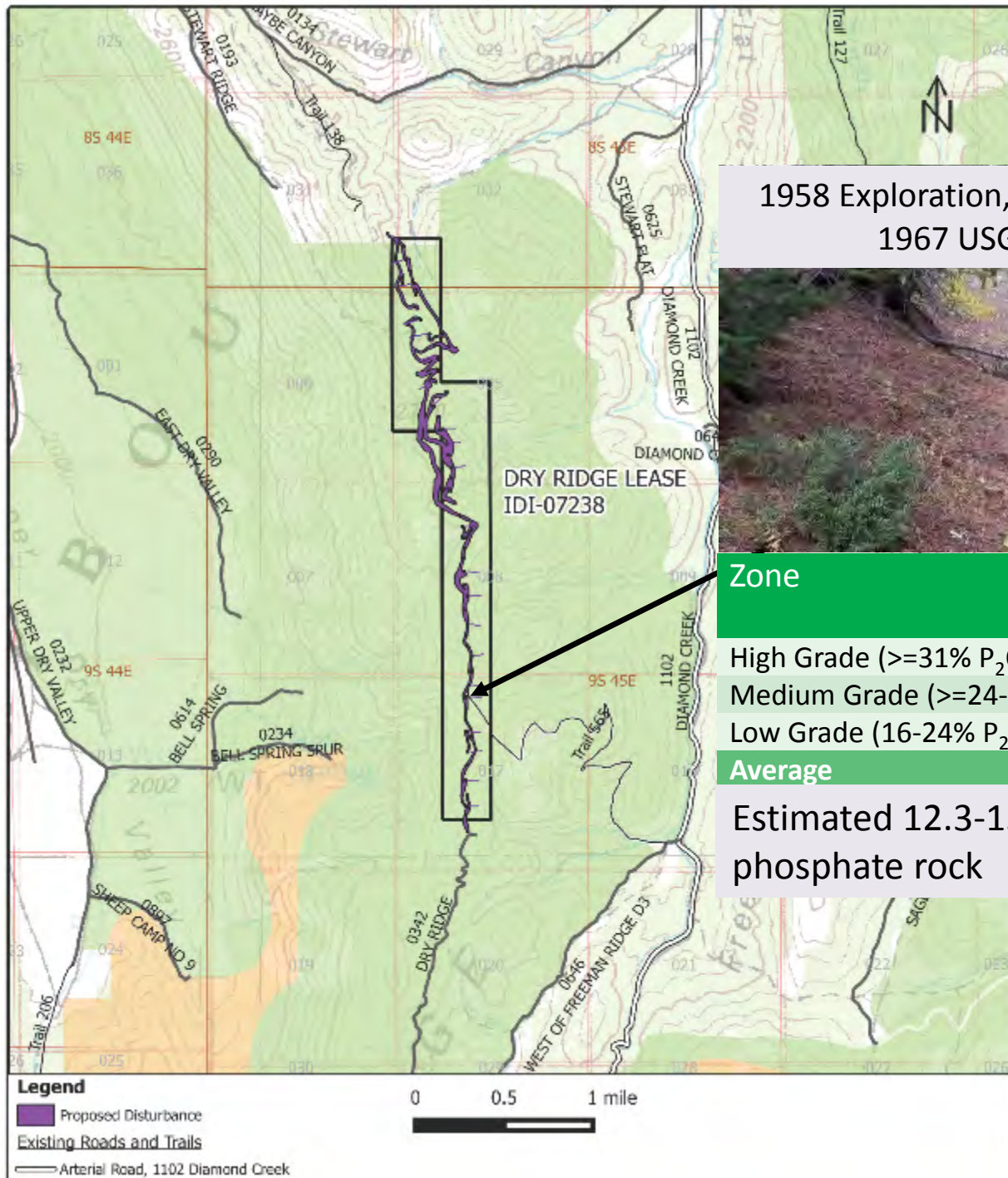
Figure 2. Generalized stratigraphic column for the southeastern Idaho thrust belt (from Link and Phoenix, 1996).

Structure

- Meade thrust plate of Idaho-Wyoming Fold-Thrust Belt
- West, overturned limb of Georgetown Syncline

Source: USGS, 1984, Misc. Invest. Res. Map MR-72, Sheet 1 of 3





1958 Exploration, San Francisco Chem Co.
1967 USGS Trench 1306A

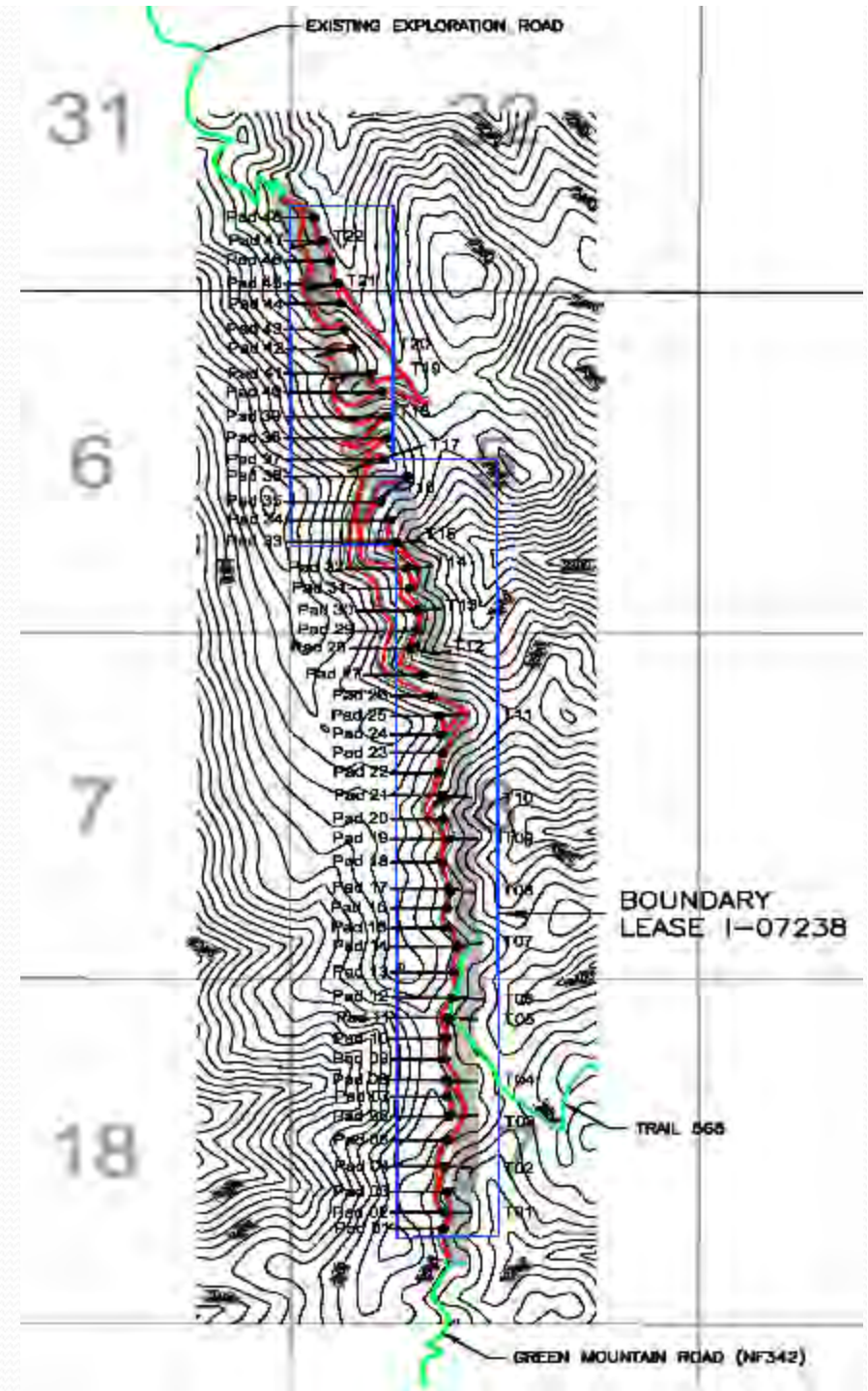


Zone	Width feet	Grade % P ₂ O ₅
High Grade (>=31% P ₂ O ₅)	9.8	33.2
Medium Grade (>=24-31% P ₂ O ₅)	20.3	27.6
Low Grade (16-24% P ₂ O ₅)	13.1	21.1
Average	43.2	26.9

Estimated 12.3-13.7 million wet tons
phosphate rock

Proposed Disturbance

- 7.4 miles temp roads
 - 26.8 acres, 2.9 off-lease
- 22 Surface Trenches
 - 1.9 acres
- 48 Drill Pads
 - 2 core holes per pad
 - 3.3 acres
- 32.0 acres total



Milestones

2014

- Apr - Exploration Plan
- Sep - Scoping Letter / Public Notices
- Nov - Cultural Resource Inventory, Wildlife Survey

2015

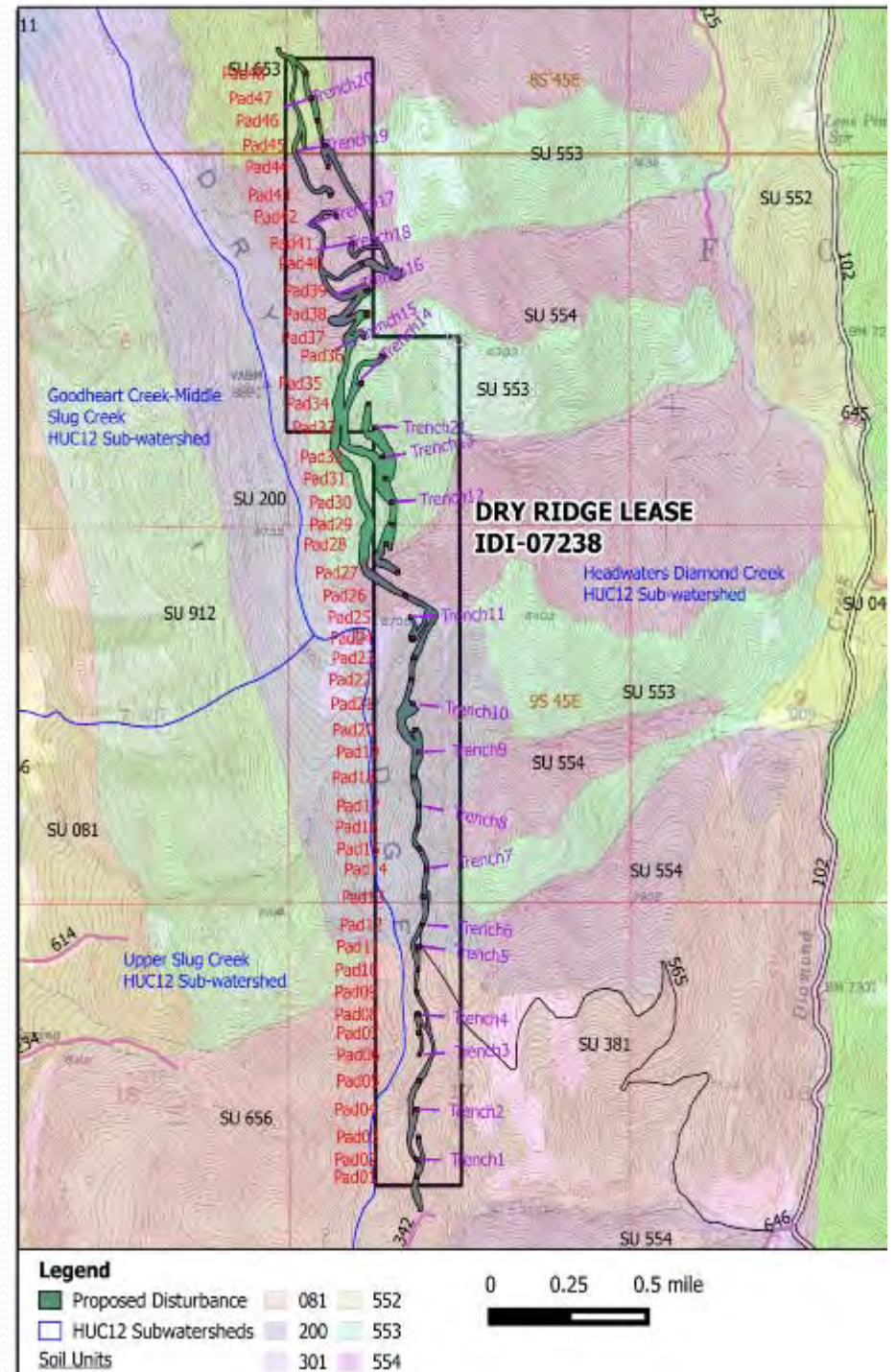
- Jan - Water Resource Reconnaissance Survey
- Feb – Biological Assessment
- May – Environmental Assessment
- Jun - Project Record
- Jul – Agency Final Decisions

Issues for Analysis

- Water Resources and Aquatic Areas
- Soils
- Vegetation
- Wildlife
- Roadless Areas
- Transportation Facilities and Public Access
- Tribal Treaty Rights and Interests

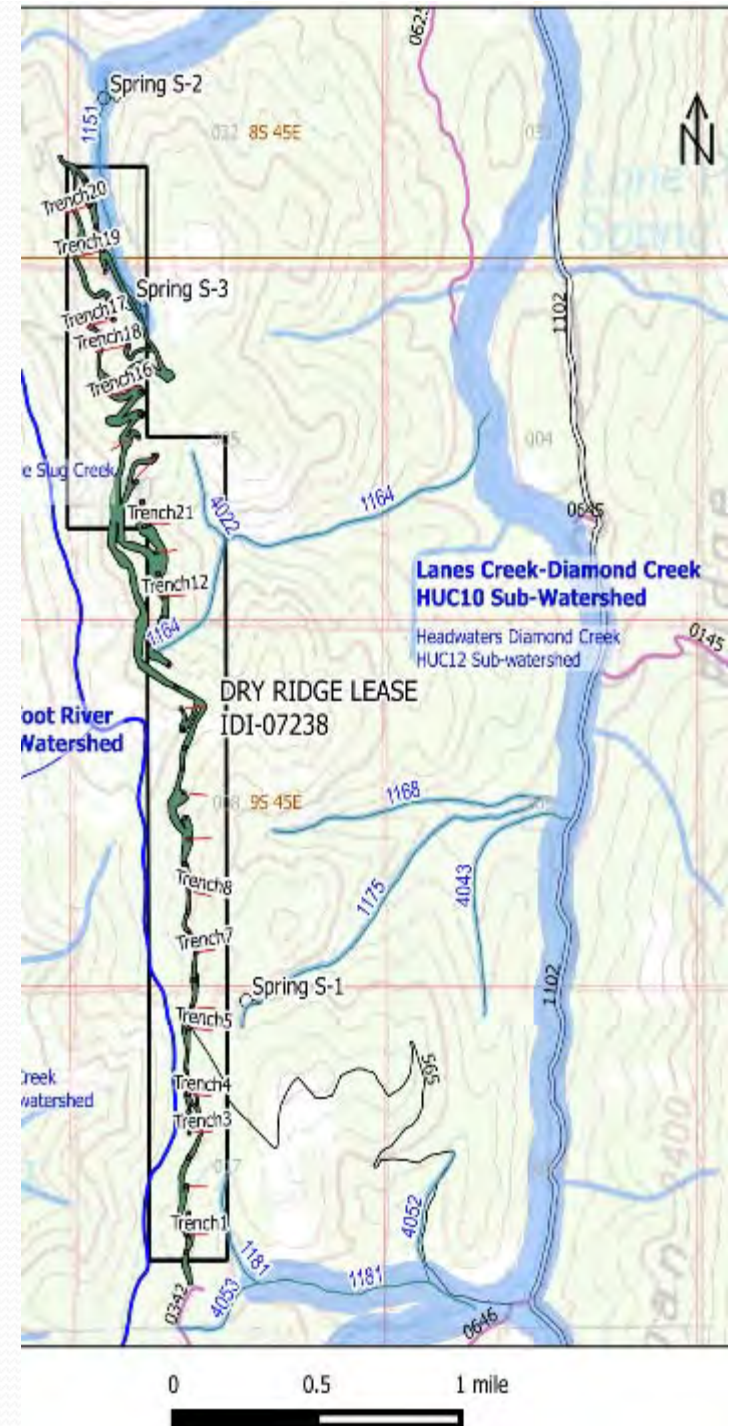
Soil Impacts

- Soil productivity
- Erosion potential
- Indicators
 - 32 acres disturbance
 - Duration of project
 - Acres reclaimed
- Env. Protection Measures
 - Operations limited to Jun-Oct
 - Concurrent reclamation
 - Seasonal closure BMPs
 - Limit disturbance near water
 - Stormwater plan
 - Road grades <10%
- Mitigation
 - Salvage topsoil
 - Possibly special measures



Surface Water

- Sedimentation
- Drilling fluid containment
- Soil selenium releases
- Indicators
 - 32 acres disturbance
 - 1.1 acres in drainages
- Env Protection Measures
 - Same as soil EPMs
 - Shallow/limited disturbance
 - Minimal cuttings by core drilling
 - Drilling above regional aquifer
 - Plug drill holes
- Mitigation
 - Schedule work in drainage when dry



Vegetation

- Removal of vegetation

- Indicators

- 32 acres disturbance
- Mature to old age classes
- No old-growth

- Recovery: 3-5 years seral vegetation, 35-100 years big sagebrush, 100+ years canopy (trees)

- Environmental Protection Measures

- Limit disturbance to area proposed
- Implement reclamation plan

- Mitigation

- None proposed

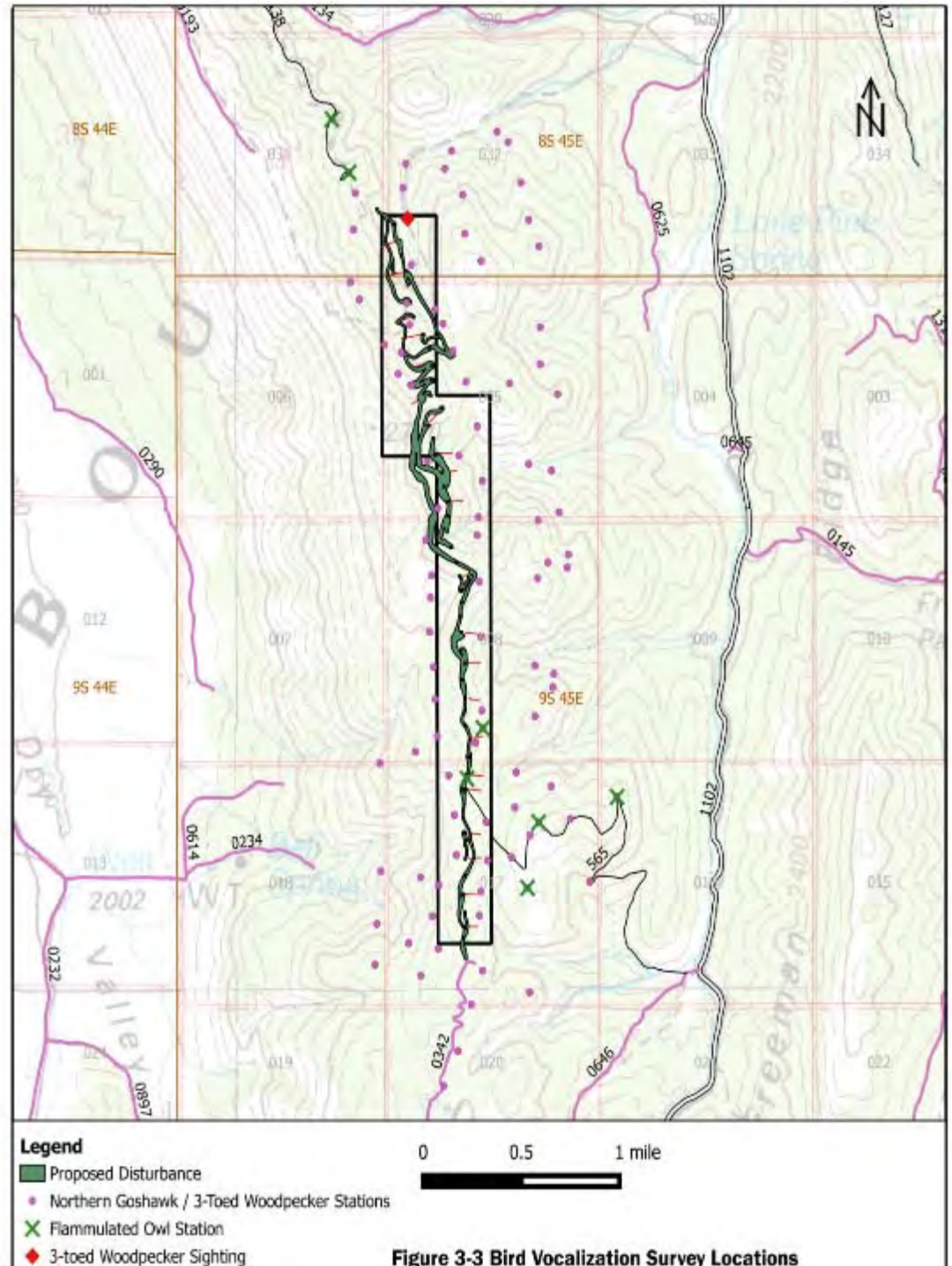
Vegetation Community	Acres	Pct
Mixed conifer	6.9	22
Douglas fir	7.9	25
Lodgepole pine	7.4	23
Aspen	3.9	12
Sagebrush/mtn brush complex	5.9	18
Total	32.0	100

Fish and Wildlife

- Endangered Species Act list – No Effect
 - Canada Lynx – transient/incidental
 - 2 other species – no presence
- Sensitive Species and Management Indicator Species
 - Known – three-toed woodpecker
 - Probable – 8 species (bat, wolf, wolverine, raptors, trout)
 - Not expected – 7 species (bat, rabbit, eagle, grouse, toad, chub)
 - No presence – 3 avian species

Bird Vocalization Surveys

- July 2014
- No goshawks
- No flammulated owls
- One 3-toed woodpecker



Fish and Wildlife Indicators/Impacts

- Indicator: Timing
 - May overlap bird nesting season
- Habitat Impacts – temporary to long-term
- Population loss negligible
 - Narrow disturbance, short duration, no unique habitats
- Selenium Impacts – soil disturbance
 - Small area compared to regional outcrops
 - Wildlife will tend to avoid disturbance
- Species Impacts – individuals not populations

Fish and Wildlife Mitigation

For exploration prior to August 15:

- Additional surveys for owls required
 - Conduct at night
 - Schedule March – June
 - Safety considerations (snow, steep slopes)
 - Additional mitigation if nests/territories could be impacted
- Request an exception for migratory birds
 - Survey active migratory bird nests
 - Adjust work schedules / locations to extent practical

Transportation

- Access from south via NF Road 342
- Access from north via existing exploration roads
- Project travel will not affect open motorized routes
- No change in public access
- No changes to existing roads
- Public travel on project temporary roads will be restricted

Roadless Characteristics

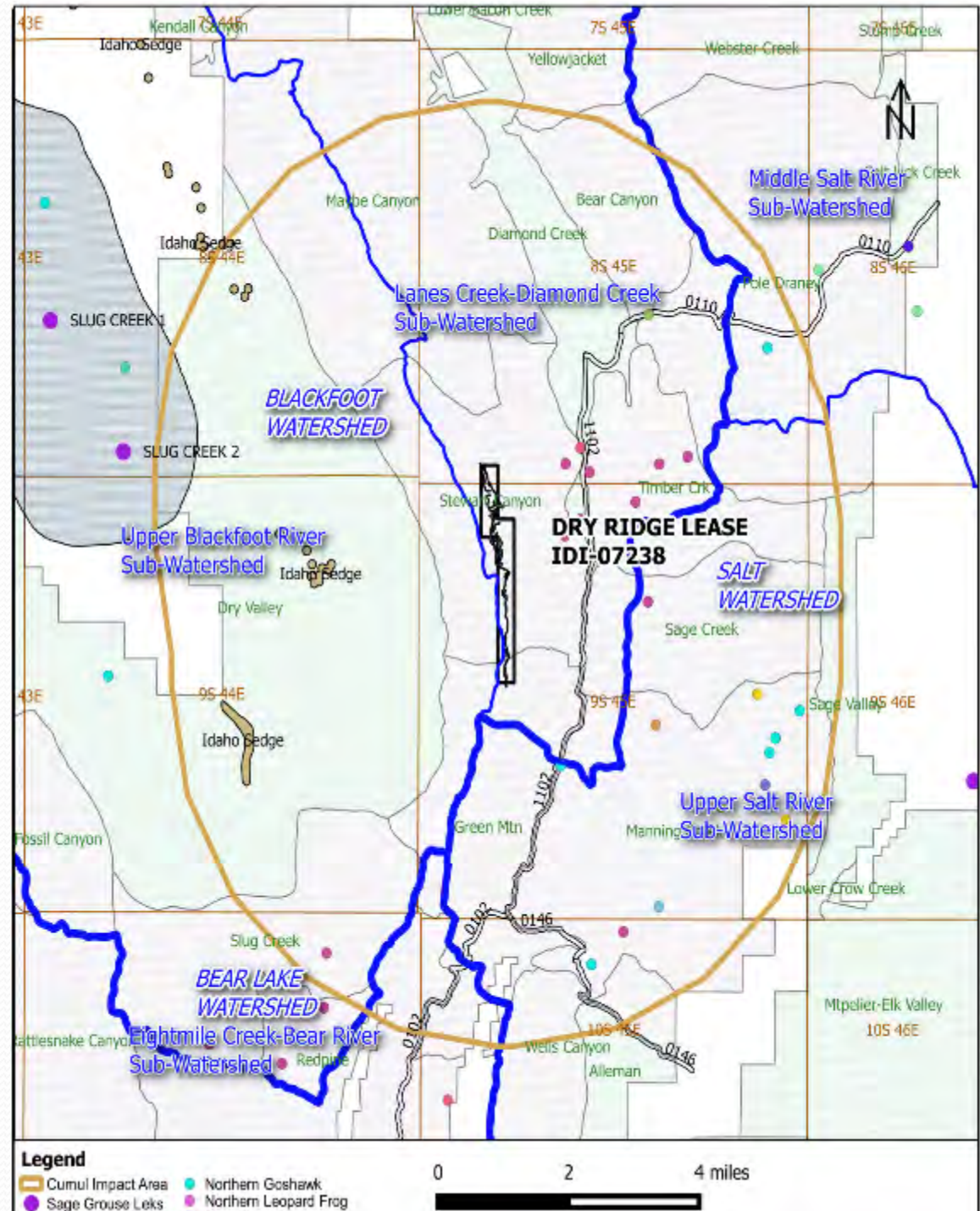
- Project within Dry Ridge Roadless Area
- Project under General Forest, Rangeland and Grassland (GFRG) Theme
- Minor, temporary impacts to roadless characteristics
- Temporary exploration roads authorized by Idaho Roadless Rule

Tribal Treaty Rights / Interests

- No specific traditional resources known
- Localized, temporary changes in access to resources
- No change in land tenure or leasing
- No additional mitigation necessary

Cumulative Impact Areas

- Wildlife
 - 5-mile buffer
- Water Resources
 - Headwaters Diamond Creek Subwatershed (21.07 square miles)
- Soil and Vegetation
 - project disturbance area
- Transportation
 - mgt prescription areas on/adjacent to lease
- Roadless
- Tribal Rights/Interests
 - southeast Idaho



Cumulative Impacts

- Project impacts added to existing disturbance
- Thresholds established in revised forest plan
- Minimal to none for all resources

Agency Decisions

US Forest Service

- Special Use Authorization for off-lease road construction
- Identify mitigation measures
- Ensure compliance with Idaho Roadless Rule

BLM

- Approval of exploration plan
- Specify conditions of approval

Decisions and Conditions

- FONSI by USFS and BLM
- Conditions of approval include:
 - Conformance with exploration plan
 - Coordination with agencies on specific matters
 - Additional bird surveys depending on work timing
 - Contingencies as described in plan and EA

Project Status

- Fertoz currently focusing on Canadian projects
- Interested in joint venture at Dry Ridge



Questions?