UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IDAHO FALLS DISTRICT
CHALLIS FIELD OFFICE
Categorical Exclusion

City of Challis AML Hazards
DOI-BLM-ID-I030-2014-0006-CX

CX AUTHORITY: 516 DM 11.9, H.3 and 516 DM 11.9, H.10
PROJECT LEAD: Antonia Hedrick

BACKGROUND:
The Big Hill/Daugherty Springs mine site is located 5 miles west and upstream from Challis, Idaho. The project site is at the entrance of the Custer Motorway, one of the most heavily traveled historic routes in the state, which connects Challis to the Land of the Yankee Fork Historic Area, Idaho's Centennial Park. The project site is used in the winter as a parking area for snowmobilers and as the most popular sledding area in town for kids when most of the safety hazards are covered with snow. During warmer weather, recreational prospectors flock here to collect fluorite crystals. The project site is a large footprint of disturbed ground located directly upstream from the water treatment facility for the City of Challis.

Fluorite, calcium fluoride, was added to the critical list of strategic minerals during World War II because the U.S. was importing more than it produced. Calcium fluoride is the main source of fluorine for the manufacture of hydrofluoric acid and derivative fluorine chemicals including propellants, refrigerants, fluoropolymers, aluminum fluoride used in the reduction of alumina to aluminum, and nuclear fuel (uranium hexafluoride). Metallurgical grade fluorite is used as a flux in steel making. Fluorite is also used in the ceramics industry. The U.S. Department of the Interior's Defense Mineral Exploration Administration (DMEA) issued exploration contracts for strategic minerals during the 1950s (Kiilsgaard, Thor H., 1997).

The Big Hill / Daugherty Springs area geology was mapped along with the rest of the Bayhorse Mining District between 1947 and 1949 by Arthur Chambers. The J.R. Simplot Company entered into a sequence of exploration project contracts with DMEA to delineate "ore" bodies in the Big Hill/Daugherty Springs area ("Past Up" vein, Chalspar claims) from 1952 to 1955. The only fluorite shipped during the contracting period was sold for $30/ton and receipts totaled $2992.80 for which the government (DMEA) was paid $149.64 royalty. It came from the "Past Up" vein on the Chalspar No. 1 claim. Exploration efforts did not result in certifications of discovery of an ore body from DMEA and contracts were closed. Detailed accounts of these contracts can be found in U.S.G.S. Open File Report 97-439 (Kiilsgaard, Thor H., 1997).

Larry McGarry, a former investment banker, operated a fluorspar mine and "mill" at the Big Hill/Daugherty Springs Mine Site since 1974 under the company name of Shamma Minerals, Chemical, and Oil Inc. McGarry staked over 1700 claims in Custer County by 1986 (The Spokesman Review, 12/08/1986). His operation was financed in part by Christopher James.

James currently holds 5 remaining claims to the east of Simplot's Past Up and Chalspar patented claims.

The lower tunnel at the mill site adit had a large cave-in during the 1980s under the Custer Motorway road. A logging truck partially sank into it while traveling on the Motorway. The Forest Service back filled the caved area and road as an emergency repair (record of conversation with Bill Savage, retired Forest Service geologist, at the BLM Challis Field Office, January 29, 2014).

Considerable earth work was done during the exploration, mining, and ball mill process left a footprint of vegetative and soil disturbance of up to 5 acres. Public safety hazards include three open adits, two recent surface cave-ins over mine tunnels, a pit with a highwall 35 feet in height, a concrete retaining wall 30 feet in height backed-filled with mine debris, two open water-diversion culverts, one concrete cistern, half of a metal ball mill, and a deteriorating building. Debris associated with past mining activities invites unauthorized dumping at the site as well. Physical hazards were posted with warning signs by the BLM on November 13, 2013.

Environmental hazards do not appear to be present at this site. Mature vegetation and no visible sign of sulphide mineralization on existing mine dumps indicates non-acidic soils. Analytical results from four water quality samples indicate concentrations far below the EPA and Idaho Water Quality Standards for arsenic, lead, mercury, and fluoride (Attachment A).

PROPOSED ACTION:
The purpose of the site remediation is to remove all physical safety hazards and nonnative material from the site with the exception of the mine portal timbers and concrete pads then return the area as near to a natural state as possible based upon logistics and resource issues. The site is located in the W½ sec. 3, T. 13 N., R 18 E., B.M. and is accessible to the public via Main Street and the Custer Motorway. Ground disturbing activities associated with this project would occur between July 1 and December 31.

Following inventories, any adits found to contain bats would be installed with a bat gate of an approved design to prevent entrapment and allow for future ingress and egress of bats and provide for public safety.

Mine adits, caved-in stopes, and the pit will be backfilled or grated (depending upon bat inventories). The retaining wall will be pushed down to the lower ball mill area, covered with existing dump material, and contoured to a 3:1 slope. The open drillhole will be plugged with a concrete-bentonite mixture. Scrap metal including cable, rebar, steel, and ball mill will be removed and recycled. Other mine debris and the deteriorating building will be removed and hauled to the nearest transfer station or refuse disposal site. The open culverts and cistern will be covered and locked with steel lids.

Due to past mining disturbance, weeds have been an ongoing maintenance and expense issue at this site. Current weed inventories have identified spotted knapweed (*Centaurea stoebe*), houndstongue (*Cynoglossum officinale*), Canada thistle (*Cirsium arvense*), black henbane (*Hyoscyamus niger*), common tansy (*Tanacetum vulgare*), musk thistle (*Carduus nutans*) as well

as numerous annual weeds that commonly colonize disturbances. Weeds in the project area will be treated chemically prior to implementation to reduce the available seed bank. All reclaimed and re-contoured slopes will be inventoried and spot treated as needed. Any disturbed ground will be reseeded using a BLM approved seed mix, fenced, and subsequently monitored.

All roads existing at the site which are not identified in the Challis Travel Management Plan may be blocked using boulders, or the lower portion of the road may be rocked preventing further public use of the roads. This would be done in conjunction with the slope contouring at the site.

Work would occur outside riparian areas and would be limited to the disturbed mine/mill footprint of up to 5 acres including the staging of equipment or materials. The work site is approximately 0.25 miles from Garden Creek, and the length of Daugherty Springs near the project site to Garden Creek is approximately 0.25 miles. This distance is consistent with the *1999 Challis RMP, Attachment 4: Riparian Habitat Area Width Delineation in Streams or Other Waterbodies*. The proposed work would occur outside of the RHCA for Garden Creek (greater than 300 feet away) and Daugherty Springs (greater than 150 feet away). The distance from work area to Daugherty Springs would be approximately 250 feet.

All hazard mitigation work, equipment refueling, and fuel storage would occur 250 feet east of the existing riparian area which drains into Daugherty Springs. All hazard mitigation work would be limited to the disturbed mine-mill footprint of up to 8 acres including equipment staging. Any petroleum products in excess of 50 gallons would be stored in constructed containment structures with an impervious liner of volume equal to or larger than the storage container. Spill containment kits of appropriate size for the equipment used would be available at the sites during work periods.

The flow of water and diversion points at the site would not be altered under the Proposed Action. Under direction of the Challis Field Office (CFO) fisheries biologist or hydrologist, sedimentation and erosion control structures would be used if necessary to minimize or eliminate sediment delivery to Daugherty Springs and Garden Creek. Weed control measures would include washing all vehicles and heavy equipment that have been off maintained roads before the vehicles or heavy equipment were used at the site.

Any cultural and/or paleontological resource (historic or prehistoric object or site) discovered during any stage of project implementation shall be immediately reported to CFO archaeologist. All operations in the immediate area of such a discovery shall cease, and an evaluation of the discovery shall be made by the CFO archaeologist to determine actions necessary to prevent the loss of significant cultural or scientific values. Consultation with the ISHPO (Idaho State Historic Preservation Office) and, if appropriate, American Indian tribes, will be coordinated by the CFO archaeologist. Operations may recommence only when concurrence from the ISHPO regarding appropriate mitigation measures is received and mitigation has been adequately completed. Following appropriate Section 106 NHPA consideration by the CFO archaeologist, non-native items less than 50 years old (e.g., solid waste) would be removed, and areas would be seeded with an appropriate native seed mixture.

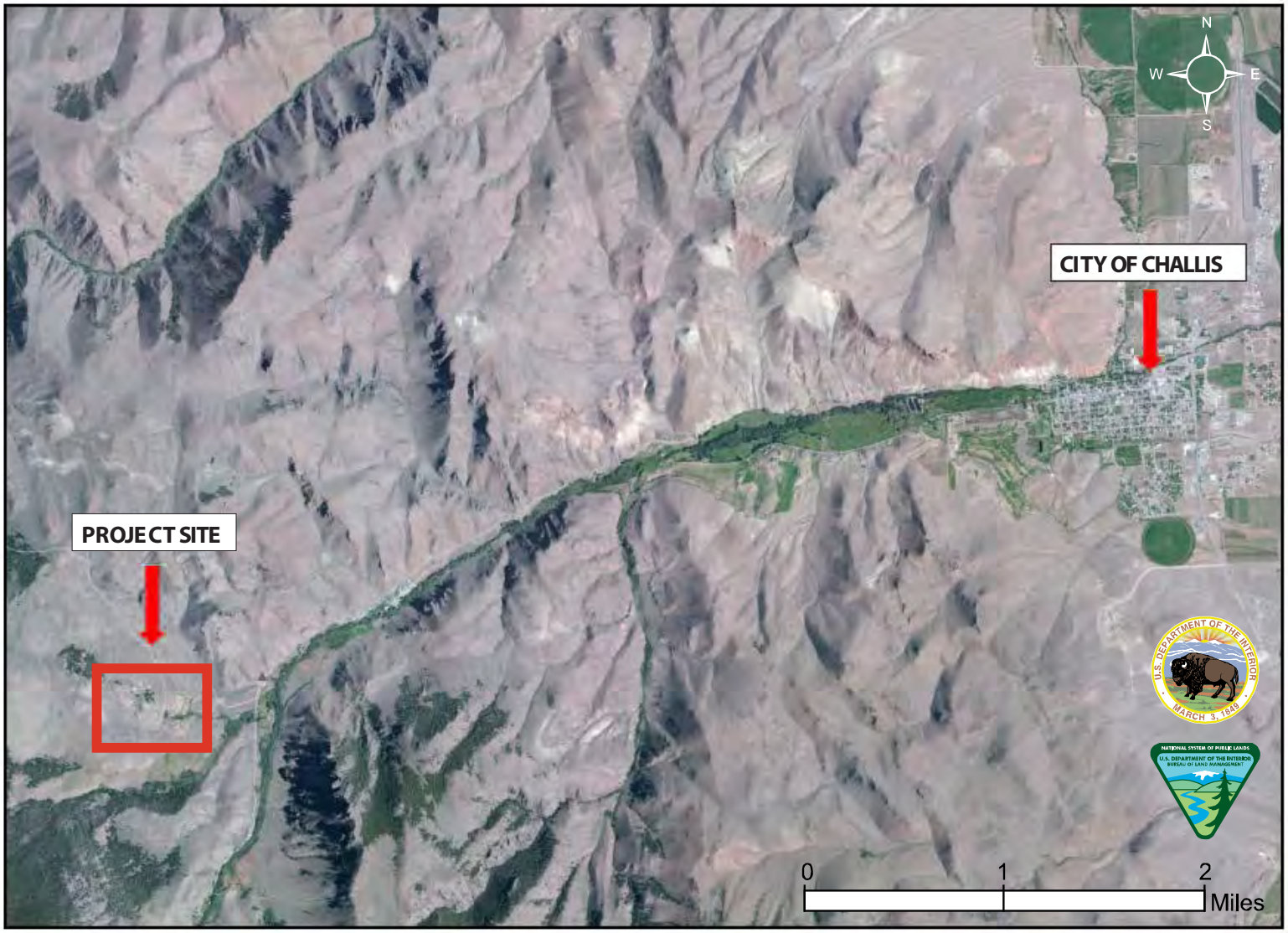

Figure 1. Site Location Map with Proximity to Garden Creek Watershed and Challis, Idaho

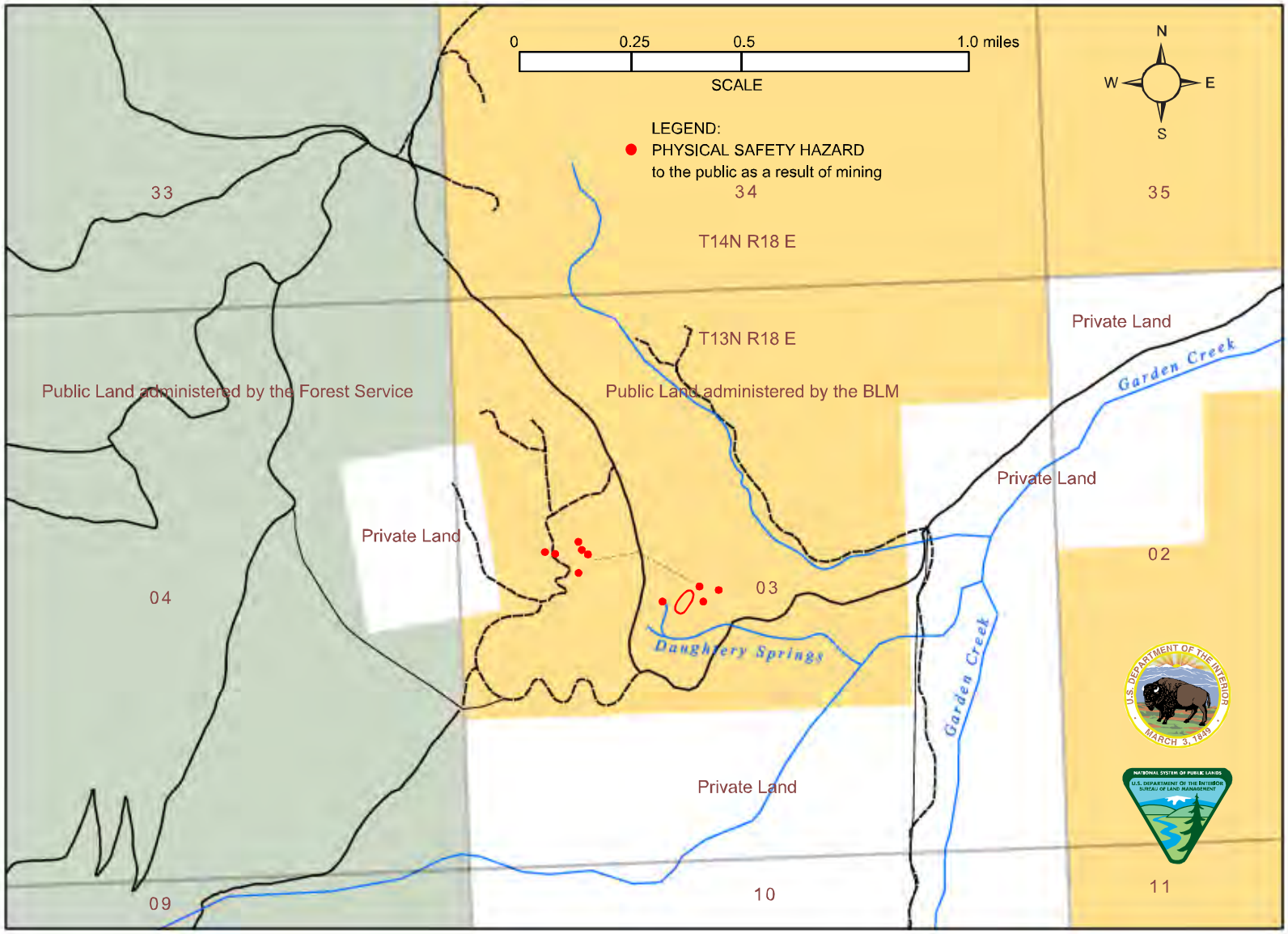

Figure 2. Land Status Map with AML Hazard Site Proximity to the Garden Creek Watershed

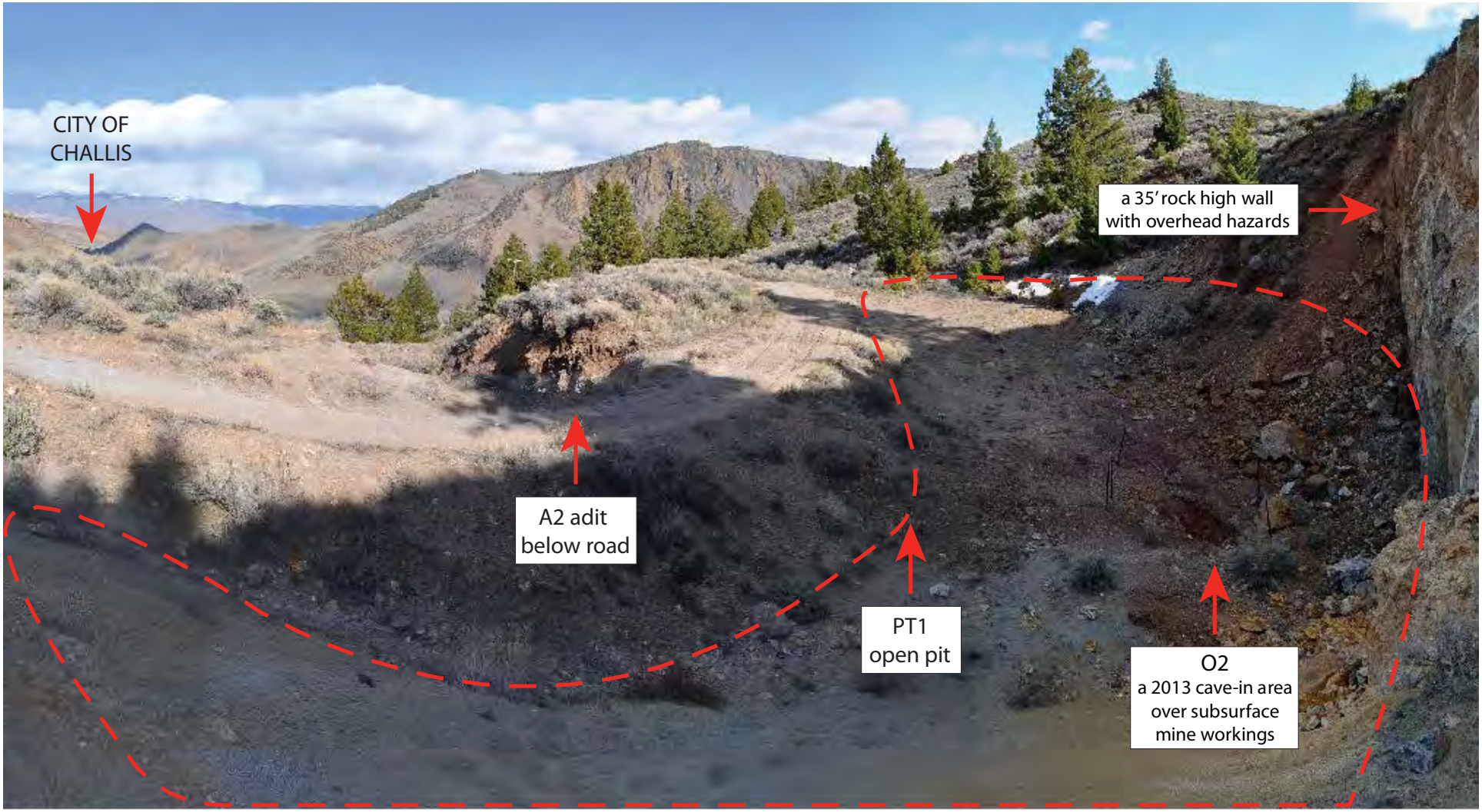

Figure 3. Photo from the open pit, PT1, at the Middle Shamma (IDI03000-SHAMMA 48) site looking downstream to Challis

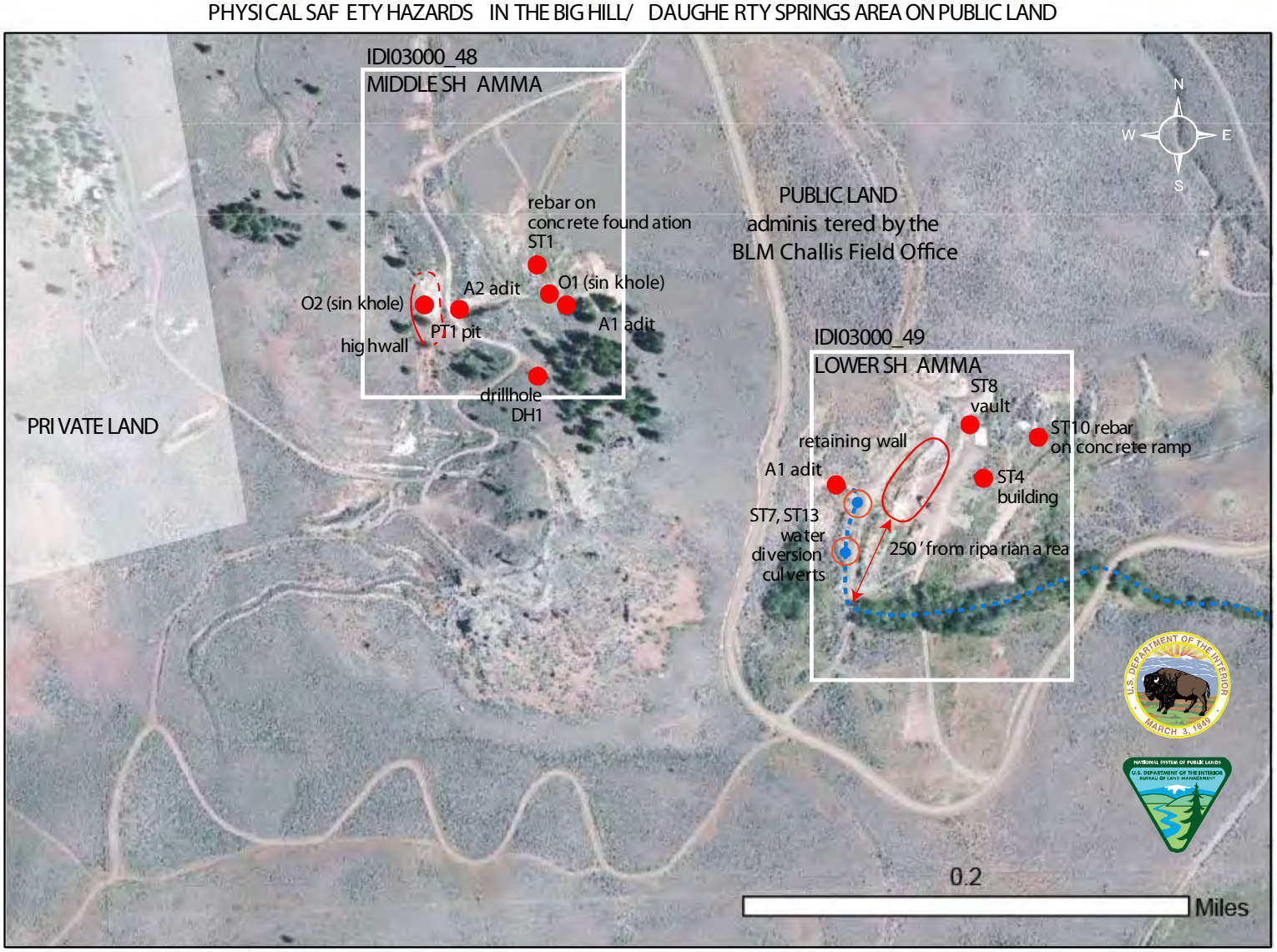

Figure 4. Mine Site AML Hazard Map (IDI03000-Middle Shamma 48 and IDI03000-Lower Shamma 49)

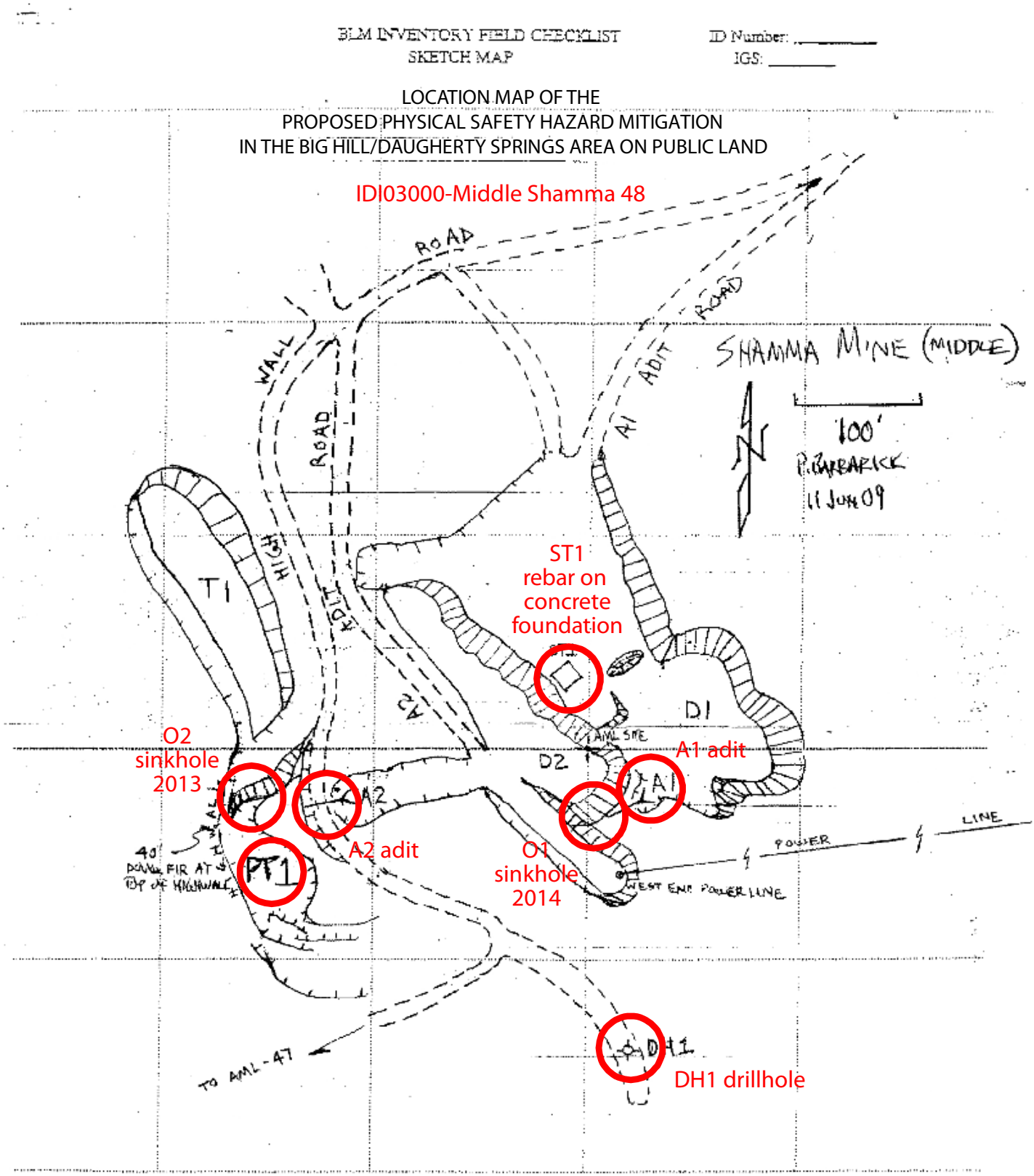

Figure 5. AML Site Hazard Map, IDI03000-Middle Shamma 48

Figure 6. Looking uphill at the A1 adit, IDI03000-Middle Shamma 48 site

Figure 7. In March of 2014, this area, O1, caved in (10’x10’) uphill from the A1 adit, IDI03000-Middle Shamma 48 site

Figure 8. A2 adit, IDI03000-Middle Shamma 48 site
This adit exposes sharp rock bolts and fencing hanging from the top of the entrance in very soft, unstable, volcanic rock altered to clay soil.

Figure 9. In 2013, this area, O2, caved in (7’x7’) above the A2 adit and mine workings, IDI03000-Middle Shamma 48 site


Figure 10. Rebar on concrete foundation ST1, IDI03000-Middle Shamma 48 site

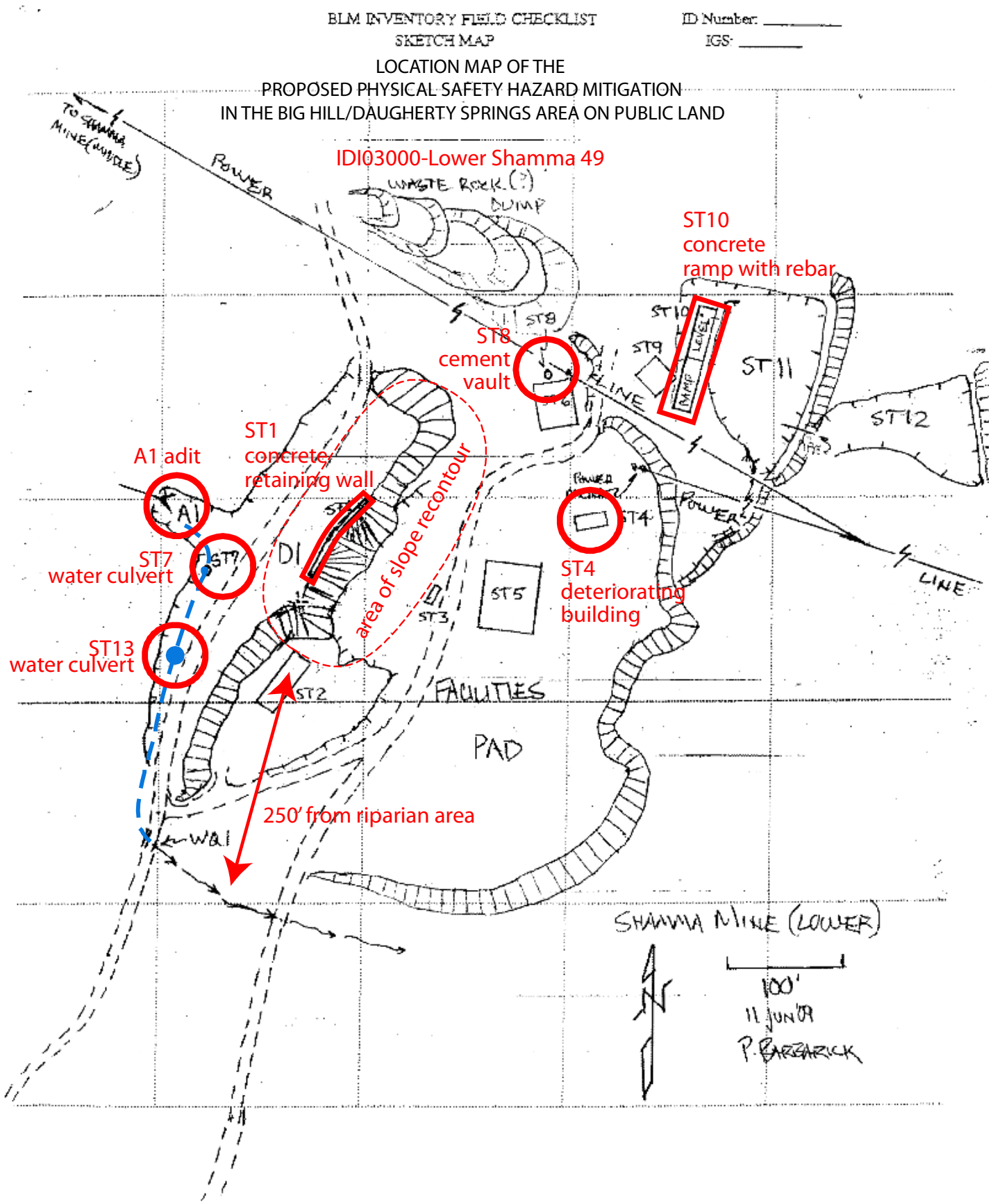

Figure 11. AML Site Hazard Map, IDI03000-Lower Shamma 49

Figure 12. A1 adit, IDI03000-Lower Shamma 49, has a metal gate in unstable, fractured dolomite.


Figure 13. ST1, a 30’ high concrete retaining wall and associated mine debris, IDI03000-Lower Shamma 49

Figure 14. ST4, a deteriorating building, IDI03000-Lower Shamma 49

Figure 15. ST10 concrete ramp with vertical rebar, IDI03000-Lower Shamma 49

Figure 16. ST8, a 6’ deep concrete cistern filled with water, IDI03000-Lower Shamma 49

Figure 17. One of two open water-diversion culverts, IDI03000-Lower Shamma 49

	Arsenic, Total (mg/L)	0.0005	.010	.010
	Copper, Total (mg/L)	ND	1.3	N/A
BH-GW-01	Lead, Total (mg/L)	ND	1.3	N/A
	Mercury, Total (mg/L)	ND	0.002	N/A
	Fluoride (mg/L)	1.7	4.0	N/A
	Arsenic, Total (mg/L)	0.0005	.010	.010
	Copper, Total (mg/L)	ND	1.3	N/A
BH-GW-011	Lead, Total (mg/L)	ND	1.3	N/A
	Mercury, Total (mg/L)	ND	0.002	N/A
	Fluoride (mg/L)	1.7	4.0	N/A
	Arsenic, Total (mg/L)	0.0006	.010	.010
	Copper, Total (mg/L)	ND	1.3	N/A
BH-GW-02	Lead, Total (mg/L)	ND	1.3	N/A
	Mercury, Total (mg/L)	ND	0.002	N/A
	Fluoride (mg/L)	1.7	4.0	N/A
	Arsenic, Total (mg/L)	0.0006	.010	.010
	Copper, Total (mg/L)	ND	1.3	N/A
BH-GW-03	Lead, Total (mg/L)	ND	1.3	N/A
	Mercury, Total (mg/L)	ND	0.002	N/A
	Fluoride (mg/L)	1.6	4.0	N/A

Table 1. Analytical Results from 2014 Water Quality Tests, ACZ Laboratories, Inc.

References:

Anderson, Alfred L., 1954, *A Preliminary Report on the Flourspar Mineralization Near Challis, Custer County, Idaho,* Idaho Bureau of Mines and Geology Pamphlet 101, pp. 5, 10-11

Chambers, A.E., 1966, *Geology and Mineral Deposits of Part of the Bayhorse Mining District, Custer County, Idaho*, University of Arizona Ph.D. dissertation, 151 p.

The Spokesman Review, December 8, 1986 *Mining Exec has Vision for Central Idaho*

Kiilsgaard, Thor H., 1997, *Mining properties in Idaho that were involved in the DMA, DMEA, or OME Mineral Exploration Programs, 1950-1974*, U.S.G.S. Open File Report 97-439, 19 p.

Ross, C.P., 1937, *Geology and Ore Deposits of the Bayhorse Region, Custer County, Idaho,* U.S.G.S. Bulletin No. 22, 2nd Edition, pp.103-106

Idaho Department of Environmental Quality, 2003, *Keystone Mine Preliminary assessment Report, Custer County, Idaho* 13 p. Figure 3-3 Municipal Drinking Water Intake for the City of Challis

	Extraordinary Circumstance	YES	NO
1.	Have significant impacts on public health or safety RATIONALE: The purpose of site remediation is to remove 11 existing physical safety hazards which will reduce or eliminate impacts to public health and safety.		x
2.	Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas. RATIONALE: Inventories for cultural and historic resources have been conducted prior to the event and it has been determined that any significant cultural and historic resources would be avoided. Site remediation would restore and respect the historic mine attributes to the adits after bat gate installation or closure using existing timbers. Remediation includes installing steel caps on open water diversion culverts which eliminates potential impacts to the City of Challis's water source. Open boreholes would be abandoned, mitigating potential pathway for contaminants to shallow aquifers in the project area. All disturbance would be conducted outside of riparian areas and wetlands, and BMPs would be employed as needed to prevent sedimentation from occurring within nearby streams. There are no floodplains or prime farmlands located within the project area.		x
3.	Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA section 102(2)(E)]. RATIONALE: With the approval of the mining claimant, remediation will improve environmental effects with slope contouring and reseeding followed by continual treatment for noxious weeds.		x
4.	Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks. RATIONALE: The site surface was reviewed in 2008 and 2010 by the Salmon Field Office Hazardous Materials lead and again in 2013 by the Idaho Falls District Hazardous Materials lead and found to have no environmental hazards.		x
5.	Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects. RATIONALE: The proposed action would not establish a precedent, nor does it compel future actions with potentially significant effects. For similar future actions, the same review process is required prior to approval. The proposed action would take 3 consecutive fiscal years (FY14-FY16) to complete due its lower priority ranking in the statewide budget.		x
6.	Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects. RATIONALE: The proposed action does not have a relationship with other actions of cumulatively significant environmental effects. Travel on the Custer Motorway dissects the area and the proposed actions would improve public safety in this heavily recreated area.		x
7.	Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places as determined by either the bureau or office. RATIONALE: This project will have no effect on properties eligible for, or listed on the National Register of Historic Places.		x
8.	Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated critical habitat for these species: RATIONALE: A Biological Evaluation for ESA listed fish species was conducted on 5/1/2014. It was determined by the BLM CFO Fisheries Biologist that the proposed action		

	Extraordinary Circumstance	YES	NO
	would have **No Effect** on ESA listed fish species, including Snake River Chinook salmon, Snake River steelhead, Snake River Sockeye Salmon, Columbia River bull trout or their designated critical habitat in Garden Creek, its tributaries or the mainstem Salmon River downstream.		x
9.	Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment. RATIONALE: Implementation of the proposed remediation would not be in violation of federal, state, local, or tribal law, or requirements imposed for the protection of the environment.		x
10.	Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898). RATIONALE: There is no known low income, minority, or other human population living on or adjacent to the area of disturbance and proposed remediation on public land. It is 5 miles from the City of Challis.		x
11.	Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007). RATIONALE: There are no known sacred sites within the proposed area of remediation and the distance from known cultural sites is over 300 feet.		x
12.	Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112). RATIONALE: The proposed remediation would require ground disturbance in the upper and lower areas using an excavator and slope contouring in the lower area. Soil disturbance invites noxious weed establishment. However, native reseeding and weed abatement measures have been written into the project plan and budget for this site remediation. Continual weeds monitoring will be required at this site after reseeding with native seed.		x

CONSULTATION AND COORDINATION:

A summary description of the proposed project was made available to the public on the Idaho BLM's ePlanning website in (date TBD) and the public was given the opportunity to provide comments or consult on the action.

Interdisciplinary Team Analysis: conducted by

Ryan J. Beatty	Fisheries Biologist
Joni Cain	Realty Specialist
Carol Hearne	Archeologist/SRMS
Antonia Hedrick	Geologist
Andrew Hess	Weeds LTCS
Ben Roundtree	Outdoor Recreation Planner
Mike Whitson	Hydrologist
Bart Zwetzig	Wildlife Biologist

The Exceptions Review table with departmental list of extraordinary circumstances and signatures is attached.

FINDING:
The proposed action is categorically excluded as outlined 516 DM 11.9, H.10 which states, "Removal of structures and materials of non-historical value, such as abandoned automobiles, fences, and buildings, including those built in trespass and reclamation of the site when little or no surface disturbance is involved." The other relevant categorical exclusion is 516 DM 11.9, H.3, which states, "Conducting preliminary hazardous materials assessments and site investigations, site characterization studies and environmental monitoring." Included are siting, construction, installation and/or operation of small monitoring devices such as wells, particulate dust counters and automatic air or water samples. None of the extraordinary circumstances described in 516 DM 2, Appendix 2 apply.

LAND USE PLAN CONFORMANCE STATEMENT:
I have determined that the proposed action is in conformance with the Challis Resource Management Plan, approved July 29, 1999. Specifically, the proposed action would not conflict with any of the resource management goals (pp. i.-iii.), and conforms to a BLM core responsibility of protecting public safety. The proposed action would meet the criteria for categorical exclusion in 516 DM 11.9, H.3 & H.10., and none of the extraordinary circumstances in 516 DM 2, Appendix 2 apply.

Preparer: /s/ Antonia Hedrick
Date: June 25, 2014

Field Manager: /s/ Todd Kuck
Date: June 25, 2014