

Abbreviated Preliminary Assessment for E C Ray Mine

Blaine County



**State of Idaho
Department of Environmental Quality**

June 2014



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, ID 83706 • (208) 373-0502

C. L. "Butch" Otter, Governor
Curt Fransen, Director

June 25, 2014

Mr. Ken Marcy
U.S. Environmental Protection Agency
Region 10
12928 SW 276th Street
Vashon, WA 98070

Subject: Abbreviated Preliminary Assessment Report for the E C Ray Mine, Blaine County, Idaho

Dear Mr. Marcy:

The Idaho Department of Environmental Quality (DEQ) completed the enclosed Abbreviated Preliminary Assessment (APA) for the E C Ray Mine under a cooperative agreement with Region 10 of the United States Environmental Protection Agency (EPA). Under this cooperative agreement, DEQ provides technical support for completion of preliminary assessments.

The E C Ray Mine is located on private property. This assessment was conducted with landowner permission. DEQ inspected the site on May 12, 2014. The landowner will receive a copy of this APA report.

At the time of the site inspection, the E C Ray Mine had no active surface water sources and no identified releases or potentials for release. Only minor evidence of mining was observed. Potential risks to human or ecological receptors associated with this mine site are minimal.

As a result of DEQ's research and observations, a No Remedial Action Planned (NRAP) designation is recommended for the E C Ray Mine. This APA report can also be found on DEQ's Preliminary Assessment web page: www.deq.idaho.gov/preliminary-assessments.

If you have any questions, please feel free to give me a call at (208) 373-0296 or email dana.swift@deq.idaho.gov.

Sincerely,

A handwritten signature in blue ink that reads "Dana Swift".

Dana Swift
Mine Waste Project Coordinator

Attachments

cc: Mr. Sandor Szombathy

Acknowledgments

DEQ would like to thank Sandor Szombathy for permitting access to the mine site.

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Introduction

This abbreviated preliminary assessment (APA) for the E C Ray Mine in the Warm Springs Mining District, Blaine County, Idaho provides the rationale for the No Remedial Action Planned (NRAP) determination that no additional assessments or site inspections are necessary at this time. Section 1 provides the APA checklist (modified from EPA, 1999) filled out by the assessor to determine that an APA was warranted. The following sections contain additional relevant information and evidence to support the APA, including historical and geologic information (Section 2); current site conditions and photographs (Section 3); maps (Section 4); and references (Section 5). During this assessment, the Idaho Department of Environmental Quality (DEQ) used references from historic reports which often have different spellings for claim names, town sites, and/or geographic features. DEQ has retained the spelling from the original source document.

Preparer: Rob Hanson **Date:** 5/12/2014
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 Idaho Department of Environmental Quality
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 Boise, ID 83706
 208-373-0290
 rob.hanson@deq.idaho.gov

Site Inspector: Rob Hanson, DEQ State Office

Site Name: E C Ray Mine

Previous Names (aka): N/A

Site Owner: Mr. Sandor Szombathy
 Atlas Mine & Mill Supply
 3812 E. Broadway Avenue
 Spokane, WA 98202

Site Location: The E C Ray Mine is accessible by vehicle. From Hwy 75 (approximately 10 miles north of Hailey) head east on Elkhorn Road (approximately 2 miles), turn right on Morning Star Road (approximately 0.7 miles), then turn right on Parker Gulch Road. The site is located to the southeast of the Parker Gulch Road.
 Township 04 North, Range 18 East, Section 15

Latitude: 43.6825°N **Longitude:** -114.30048°W

Description of release (or potential release) and its probable nature:

The E C Ray Mine was investigated by the DEQ on May 12, 2014 for potential releases of heavy metals or other deleterious materials (such as petroleum products and ore processing chemicals) by airborne, surface water, or ground water pathways. Limited historical information is available

for this site. The only historical reference document identified by the Idaho Geological Survey (IGS) was Anderson, et al., 1950. The E C Ray Mine is not specifically mentioned in this document; therefore, an assumption of mining history can be made based on the nearby June Day Mine (aka Noon Day Mine) and Elkhorn Mine sites (southwest of the E C Ray Mine site location). IGS lists the following commodities and approximate ranges of production for June Day Mine: gold (1,001 – 5,000 oz), silver (1,001 – 5,000 oz), copper (5,001 – 10,000 lbs), lead (1,001 – 5,000 lbs), and zinc (no value listed). Production at the Elkhorn Mine included silver, zinc, lead and gold, with a production range only listed for zinc (10,001-50,000 lbs).

Section 1. APA Checklist

Task 1—Superfund Eligibility Evaluation

Assessor, if all answers are “no,” continue to task 2; otherwise, explain any “yes” answers below and then skip to task 3.	YES	NO
1. Is the site currently in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) or an “alias” of another site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is the site being addressed by some other remediation program (i.e., federal, state, or tribal)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Are the hazardous substances that may be released from the site regulated under a statutory exclusion (e.g., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the Nuclear Regulatory Commission, Uranium Mill Tailings Radiation Control Act, or Occupational Safety and Health Administration)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Are the hazardous substances that may be released from the site excluded by policy considerations (i.e., deferred to Resource Conservation and Recovery Act corrective action)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Is there sufficient documentation to demonstrate that there is no potential for a release that constitutes risk to human or ecological receptors (e.g., comprehensive remedial investigation equivalent data showing no release above applicable or relevant and appropriate requirements (ARARs), completed removal action, documentation showing that no hazardous substance releases have occurred, or an EPA-approved risk assessment)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Assessor, please explain all “yes” answer(s):

Regarding question 5: A reconnaissance level preliminary assessment was conducted to determine if any potential sources or associated releases could be identified due to historical mining practices. No concerns were identified during desktop research. During the site inspection, only minor evidence of mining was observed consisting of one small dog hole on the western boundary of the claim. The area was well vegetated around the dog hole indicating that materials excavated were mostly soil-like materials.

Task 2—Initial Site Evaluation

If information is not available to make a “yes” or “no” response below, further investigation may be needed. In these cases, the assessor should determine whether an APA is appropriate.

If the answer is “no” to any of questions 1, 2, or 3, proceed directly to task 3.	YES	NO
1. Does the site have a release or a potential to release?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Does the site have uncontained sources containing CERCLA-eligible substances?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Does the site have documented on-site, adjacent, or nearby targets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

If the answers to questions 1, 2, and 3 above were all “yes,” then answer questions 4–7 before proceeding to task 3.	YES	NO
4. Does documentation indicate that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site?	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there an apparent release at the site with no documentation of exposed targets, but targets are on site or immediately adjacent to the site?	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there an apparent release and no documented on-site targets or targets immediately adjacent to the site, but targets are nearby (e.g., within 1 mile)?	<input type="checkbox"/>	<input type="checkbox"/>
7. Are there uncontained sources containing CERCLA hazardous substances, a potential to release with targets present on site or in proximity to the site, but no indication of a hazardous substance release?	<input type="checkbox"/>	<input type="checkbox"/>

Notes:

At the time of the site inspection, the E C Ray Mine site had no mining related water present, no active surface water sources and no identified releases or potentials for release. The closest occupied residential dwellings include a housing development approximately 0.5 mile to the southwest of the property boundary along Parker Creek. No on-site targets were identified. Potential risks to human or ecological receptors associated with this mine site are minimal.

Table 1 parallels the questions above and should be used by the assessor to make decisions during task 3. Table 1 identifies different types of site information and provides some possible recommendations for further site assessment activities based on that information. The assessor should use Table 1 in determining the need for further action at the site, based on the answers to the questions in task 2. Assessors should use professional judgment when evaluating a site. An assessor’s individual judgment may be different from the general recommendations for a site given below.

Table 1. Site assessment decision guidelines for a site.

Suspected/Documented Site Conditions	EPA-Recommended Site Assessment Activities
1. There are no releases or potential to release.	APA
2. No uncontained sources with CERCLA-eligible substances are present on site.	APA
3. There are no on-site, adjacent, or nearby targets.	APA
4. There is documentation indicating that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site.	APA → SI or PA/SI
5. There is an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site.	APA → SI or PA/SI
6. There is an apparent release and no documented on-site targets and no documented targets immediately adjacent to the site, but there are nearby targets. Nearby targets are those targets that are located within 1 mile of the site and have a relatively high likelihood of exposure to a hazardous substance migration from the site.	Full PA
7. There is no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site.	Full PA

Task 3—DEQ Site Assessment Decision

When completing task 3, the assessor should use task 2 and Table 1 to select the appropriate decision. For example, if the answer to question 1 in task 2 was “no,” then an APA is appropriate and the “NRAP” box below should be checked. Additionally, if the answer to question 4 in task 2 is “yes,” then two options are available (as indicated in Table 1): (1) proceed with an APA and check the “Lower Priority SI” or “Higher Priority SI” box below or (2) proceed with a combined PA/SI.

Check the box that applies based on the conclusions of the APA checklist:

- No Remedial Action Planned (NRAP) Defer to NRC
 Higher Priority SI Refer to Removal Program
 Lower Priority SI Site is being addressed as part of another CERCLIS site
 Defer to RCRA Subtitle C Other: _____

DEQ Preparer:



Rob Hanson

6/25/14
Date

Please explain the rationale for your decision:

As a result of DEQ’s research and site observations, a NRAP designation is recommended for the E C Ray Mine. Desktop research and site inspection observations confirm that there are no

current releases of heavy metals or other deleterious materials by airborne, surface water, or ground water pathways.

Section 2. Historical and Geologic Information

Since limited historic information is available for the E C Ray Mine, the following historic and geologic information is summarized from the nearby June Day Mine and Elkhorn Mine, as reported in the Idaho Bureau of Mines and Geology *Detailed Geology of Certain Areas in the Mineral Hill and Warm Springs Mining District* (Anderson, et al 1950, p. 54-56, 59). Access has not been granted to perform a preliminary assessment for June Day, Elkhorn, or the other mine sites located in Keystone Gulch. DEQ cannot improve or expand upon geologic information included in historic reports; therefore, information from these reports is included as direct quotations. The figures referenced in this quote have not been duplicated in this report.

JUNE DAY Mine

Location and Development

The June Day (commonly called Noon Day) mine is about 5.5 miles east of Ketchum, by road. It is near the mouth of Parker Gulch, with the mine dump about 30 feet above creek level. The property is comprised of the June Day and Gem claims and one-half interest in the patented Noonday claim. It is developed by two shafts, the Noonday and Starlight, and by several thousand feet of tunnel on six levels. (Fig. 21, longitudinal section A-A'.) Figure 21 shows only the map of the third or main level. A map of the other levels has been purposely deleted because their superposed position, coupled with the map scale, obliterates map reading.

History and Production

The main tunnel, or No. 3 level, was started in search of the downward continuation of the Elkhorn vein (1, p. 189), which crops out about 1000 feet to the southeast. After a considerable amount of tunnel work had failed to reveal the Elkhorn vein it was discovered that much of the rock being penetrated contained gold. The gold did not occur in a vein, but was disseminated throughout the wall rock, particularly in some metamorphosed limestone. During the early nineteen hundreds mining operations produced several hundred tons of ore from these gold bearing areas, but activity ceased in 1915. In 1940 production was resumed, the high silica content of the ore making it in demand as a smelter flux. Mining operations terminated in 1947. Available data on production are given in the table below.

Production from the June Day Mine

(From A.S. & R. smelter returns)

Year	Dry Tons	Net Value of Gold
1940	51.68	\$ 702.44
1941	1997.87	13,204.81
1942	437.77	4,351.49
1943	534.40	2,995.39
1944	51.00	733.88
1945	561.90	5,038.88
1947	50.10	380.27
Total	3,684.72	\$27,407.16

June Day and Starlight

Year	Dry Tons	Fine Ounces of Gold
1911	10	11.99
1912	175	284.85
1913	29	57.06
1915	1073	261.42
	25 (Conc.)	
	1312	614.32

Geology and Mine Workings

The No. 3 tunnel starts in the Lower limestone member of the Milligen formation. (Fig. 21.) Near the portal, the member strikes N. 20° W. and varies in dip from 53° NE. to vertical. It is composed of limestone beds varying from a few inches to two or more feet in thickness, often separated by thin, one-inch to four-inch beds of argillite. These rocks have been intensely metamorphosed with the limestone being far more affected. The resultant metamorphosed rock is a tactite, containing among other minerals, diopside, garnet, wollastonite, scapolite, clinozoisite, zoisite, and vesuvianite. The tactite is fine-grained, and presents a rough lineation of the darker silicate minerals subparallel to the bedding. In places the lineation gives the rock a gneissoid appearance.

The No. 3 tunnel follows tactite beds to the southeast, and about 150 feet from the portal widens into a stope extending both above and below the tunnel level. Immediately south of the stope the tunnel passes through the June Day fault, a major shear zone of crushed and brecciated limy material striking N. 59° W. and dipping 65° NE. Continuing to the south, the tunnel branches into several headings. One of these, the Buckhorn crosscut, explores the upper part of the tactite member, and, in the raise at the crosscut face, penetrates an overlying argillite member. Another heading, the SE. crosscut, intersects the June Day fault in two places and finally ends in an underlying slaty quartzite member well to the southeast. The final 35 feet of this crosscut is of interest in that the quartzitic wall rock assays \$6 in gold to the ton (13). The main tunnel continues to drift more or less on the strike of the enclosing wall rock, and, at a point about 50 feet north of the base of the Noonday raise, the rock grades from a tactite into what appears to be a fine-grained, thin-bedded quartzite. Thin section study reveals that this rock is not a quartzite, but an extremely fine-grained siliceous limestone. The change in rock type is not due to faulting, but appears to have resulted from gradation in the intensity of metamorphism. The silicified limestone rocks have been explored by several short crosscuts and drifts but no ore bodies have been found.

The Noonday raise extends from the No. 3 level to the upper sub-level near the bottom of the Noonday shaft. (Fig. 21, longitudinal section A-A'.) Three short levels have been driven from this raise. The southern extension of the lower, or No. 2 level, intersects the No. 2 level fault, a strong four foot shear zone striking N. 75° E. and dipping 83° SE. This fault has been drifted on to the southwest for about 60 feet and the final 30 feet of the drift has been stoped up for about 20 feet. The northern extensions of both the No. 1 level and the upper sub-level penetrate the June Day fault, and both levels show ore in the fault hanging wall. The upper sub-level is unusual for the mine that it exposes an appreciable amount of sphalerite.

Two levels have been driven from the Starlight shaft. The upper or drainage level was accessible, but the workings beneath were flooded in 1949. The drainage level, driven to come beneath the undercut stope on the No. 3 level, intersects and drifts 120 feet on a prominent fault striking N. 23° W. and dipping 60°-65° SW. This fault is mineralized throughout its exposed length. It passes into the wall before intersecting the June Day fault, however, inasmuch as it does not show in the No. 3 level SE. crosscut, it is believed to be cut off or to merge with the June Day fault somewhere near the "A" raise on the No. 3 level. The area in and about the "A" raise is highly contorted and contains more exposures of sulphide mineralization than anywhere else on the No. 3 level.

Factors affecting ore deposition.—The metamorphic mineral assemblage of rocks indicates that they have resulted from contact metamorphism. It is not believed that ore minerals, primarily gold, were introduced

during metamorphism, but that they were deposited at a later date. The location of ore bodies in the hanging wall of the June Day fault, and the mineralized condition of the Drainage level fault, suggest that mineralizers entered the region by way of these structures. Gold is disseminated throughout the tactite in the June Day fault hanging wall on the No. 3 level; however, it steadily increases in quantity as the fault is approached. Inasmuch as the June Day fault appears to be normal, it is possible that during fault movement the hanging wall was disturbed and fractured, thereby creating access for the invading mineralizing solutions; such may well be the case in the Drainage level fault. Or it may be that the near vertical bedding abutting the fault hanging wall offered an escape for the solutions migrating along the fault. In any event the June Day fault has exerted a control on the mineralizing solutions, which have favored the hanging wall, and, where conditions were suitable, they have diffused into and replace the host rock giving rise to the silica-rich disseminated deposit. This holds not only for the more easily replaceable tactite containing the big stope above and below the No. 3 level, but also for the ore near the "A" raise and for the low grade gold deposit near the face of the southeast crosscut, all of which are in the June Day fault hanging wall.

Suggestions for Prospecting

In the event of future mine exploration, attention should be given to the hanging wall area of the June Day fault, inasmuch as it holds promise of undeveloped ore bodies. This is particularly true of the junction area of the Drainage level and June Day faults. The presence of ore minerals in the No. 2 level fault suggests that ore bodies may be found in other parts of the mine, but the collected data on these areas is insufficient to warrant a planned exploration program.

ELKHORN MINE

The Elkhorn mine is about 5.5 miles east of Ketchum, by road. It is atop the ridge immediately southeast of the June Day mine. According to Bull. 814, pp. 190-191, the mine was discovered about 1879 and was an active producer until 1885. The vein was worked continuously from the outcrop to a vertical depth of about 300 feet, where it gave out. It is credited with a production of about \$1,500,000 in silver, lead, and gold values. Continued exploration work on lower levels failed to expose any ore.

The mine workings are now in a state of disrepair and inaccessible. They have been idle for many years. There is little to see except at the outcrop where some open pit diggings expose a structure, presumably the Elkhorn vein, which strikes about N. 60° W. and dips rather steeply SW.

Section 3. Current Site Conditions and Photographs

E C Ray Mine site observations and photographs were collected during the DEQ site inspection on May 12, 2014. The weather was approximately 48°F, clear, and sunny with wind out of the east. One "dog hole" was observed on the western boundary of the claim. No remnants of hazardous or deleterious materials from mining activities were observed on the ground surface surrounding the "dog hole" (Photo 1) or on other areas of the property. The site is well vegetated (Photo 2) and no active water sources were draining from the property.



Photo 1. Small dog hole observed on western boundary of the claim.



Photo 2. General site photo looking east from the western edge of the E C Ray Claim.

Section 4. Maps

The E C Ray Mine is located east of Sun Valley, Idaho (Figure 1). An aerial map was also used to determine if there was evidence of mine activity or waste present at the site (Figure 2).

Specific site location details are included in the above checklist. The generalized geology of this area is shown in Figure 3 with a description included in Section 2 of this report.

The E C Ray Mine is located along a ridge with Parker Gulch drainage to the north and Keystone Gulch drainage to the south. Both drainages are located within the Big Wood River subbasin. Evidence of past mining (i.e., the “dog hole” observed during the site visit) was observed on the western side of the property suggesting that the probable point of entry (PPE) for the surface water pathway is into the unnamed drainage which would flow to the Parker Creek. At the time of the site visit, no water was observed in the unnamed drainage. Parker Creek, a tributary to the Big Wood River, was running water. The site visit was conducted in the spring at a time of the year when water is expected to be present. The 15-mile target distance limit (TDL) follows Parker Creek and ends just west of Hailey city limits on the Big Wood River (Figure 4). There are wetlands in the immediate vicinity of the E C Ray Mine site location and downstream of the site along Parker Creek within a 2-mile radius (Figure 5). Potential ground water pathways include 33 public drinking water systems and approximately 550 domestic wells located within a 4-mile radius of the mine site location, including three domestic wells located along the Parker Gulch drainage (Figure 4).

Sensitive species can have large habitat ranges that overlap the vicinity of the E C Ray Mine site. Based on the list of *Endangered, Threatened, Proposed, and Candidate Species with Associated Proposed and Critical Habitats in Idaho* (USFWS 2014), the following species are identified for Blaine County:

- Birds: Greater Sage Grouse, *Centrocercus urophasianus*, candidate species and Yellow-Billed Cuckoo, *Coccyzus americanus*, proposed species.
- Mammals: Canada Lynx, *Lynx canadensis*, threatened species and North American Wolverine, *Gulo gulo luscus*, proposed species.
- Fish: Bull Trout, *Salvelinus confluentus*, threatened species-designated critical habitat.
- Plants: Whitebark Pine, *Pinus albicaulis*, candidate species.

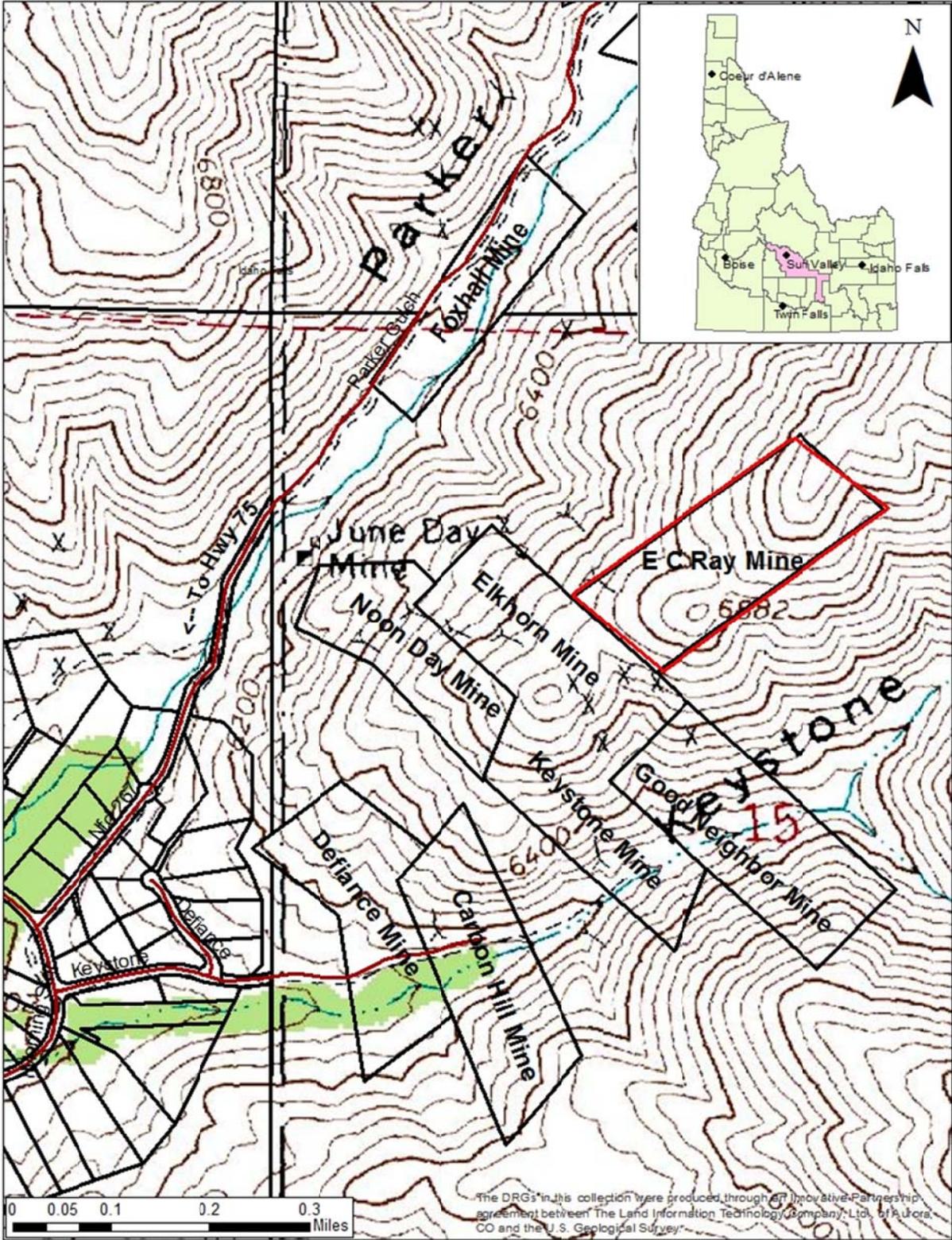


Figure 1. Topographic location of the E C Ray Mine in Blaine County, Idaho.

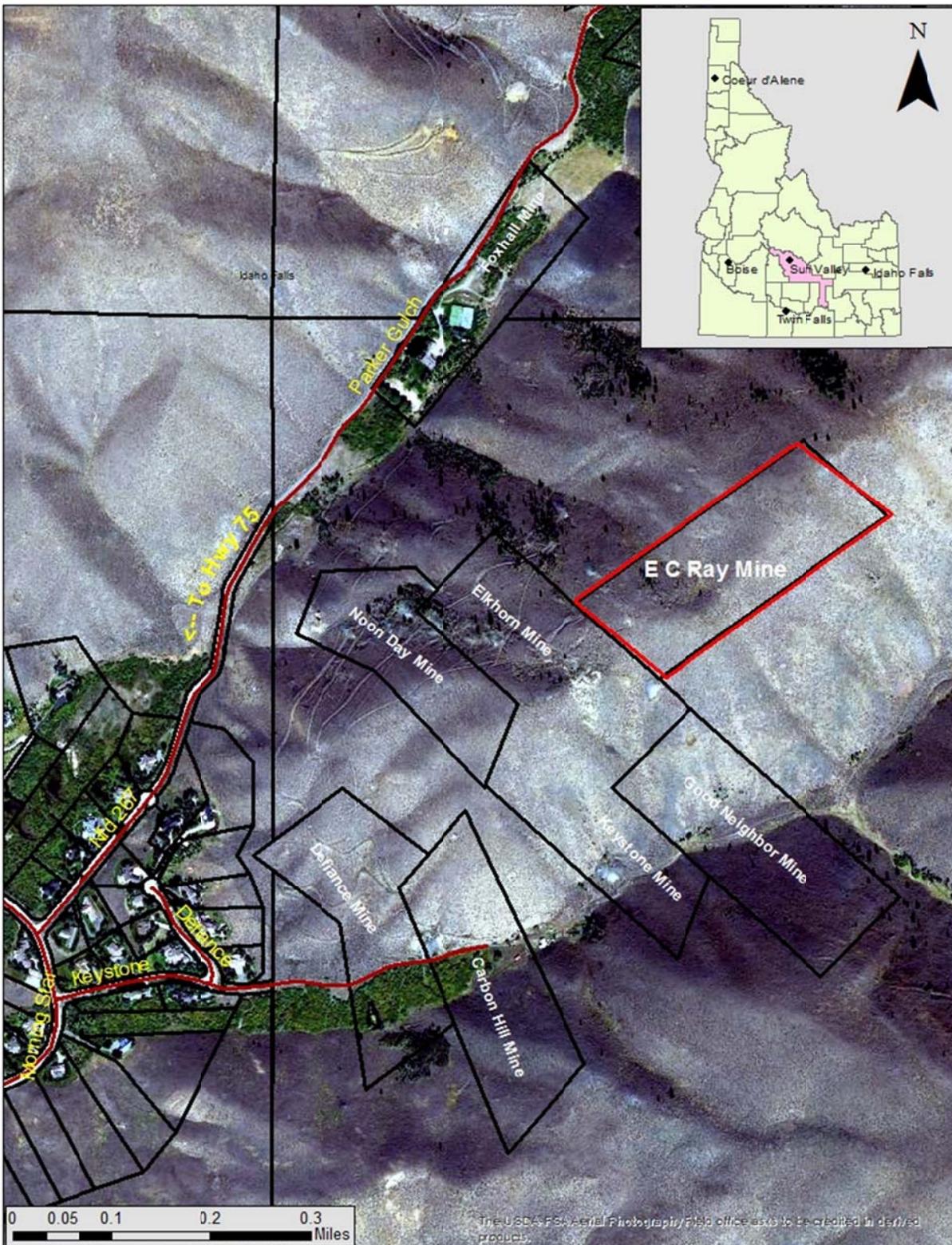


Figure 2. Aerial view of the E C Ray Mine in Blaine County, Idaho.

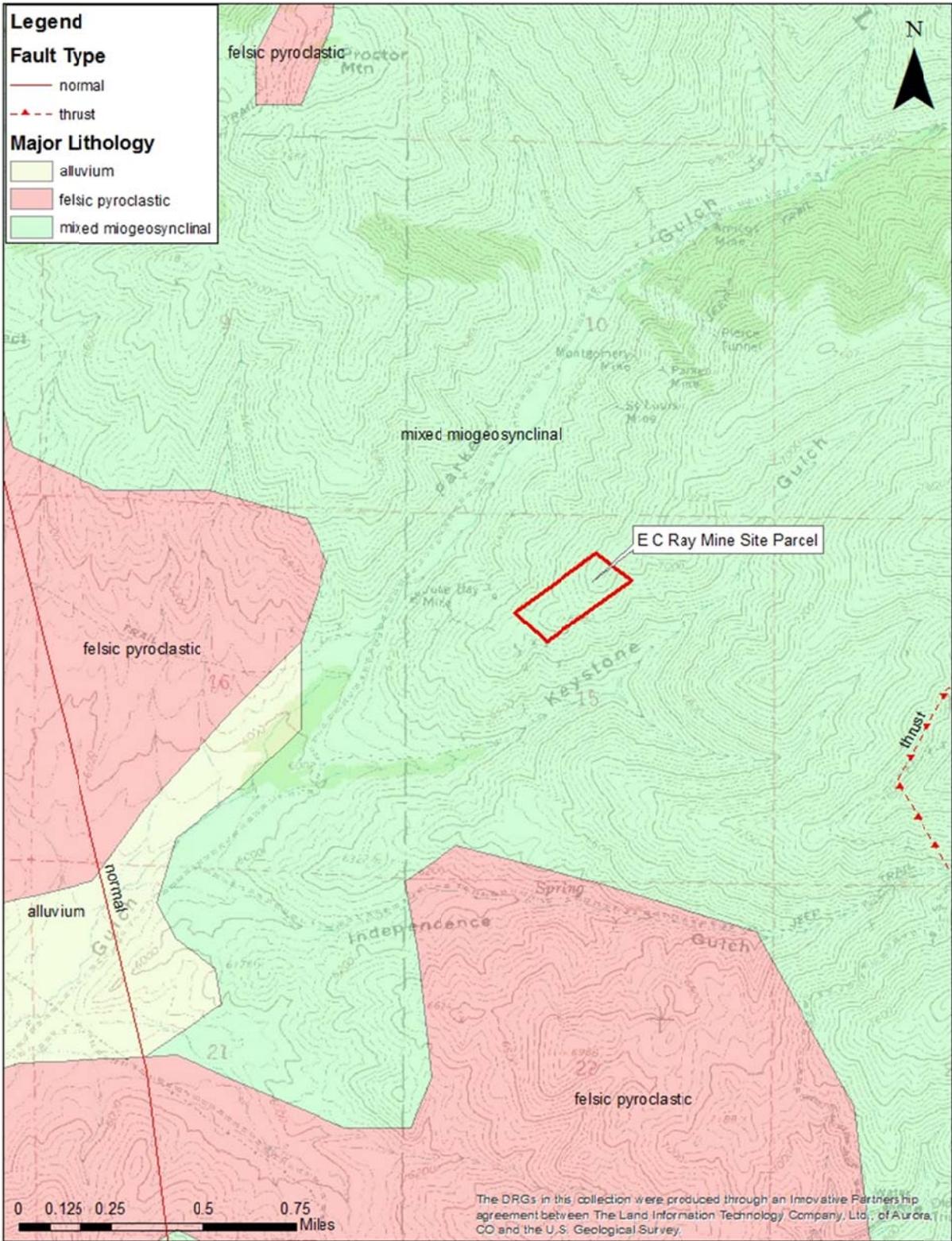


Figure 3. Map of major lithology in the vicinity of the E C Ray Mine.

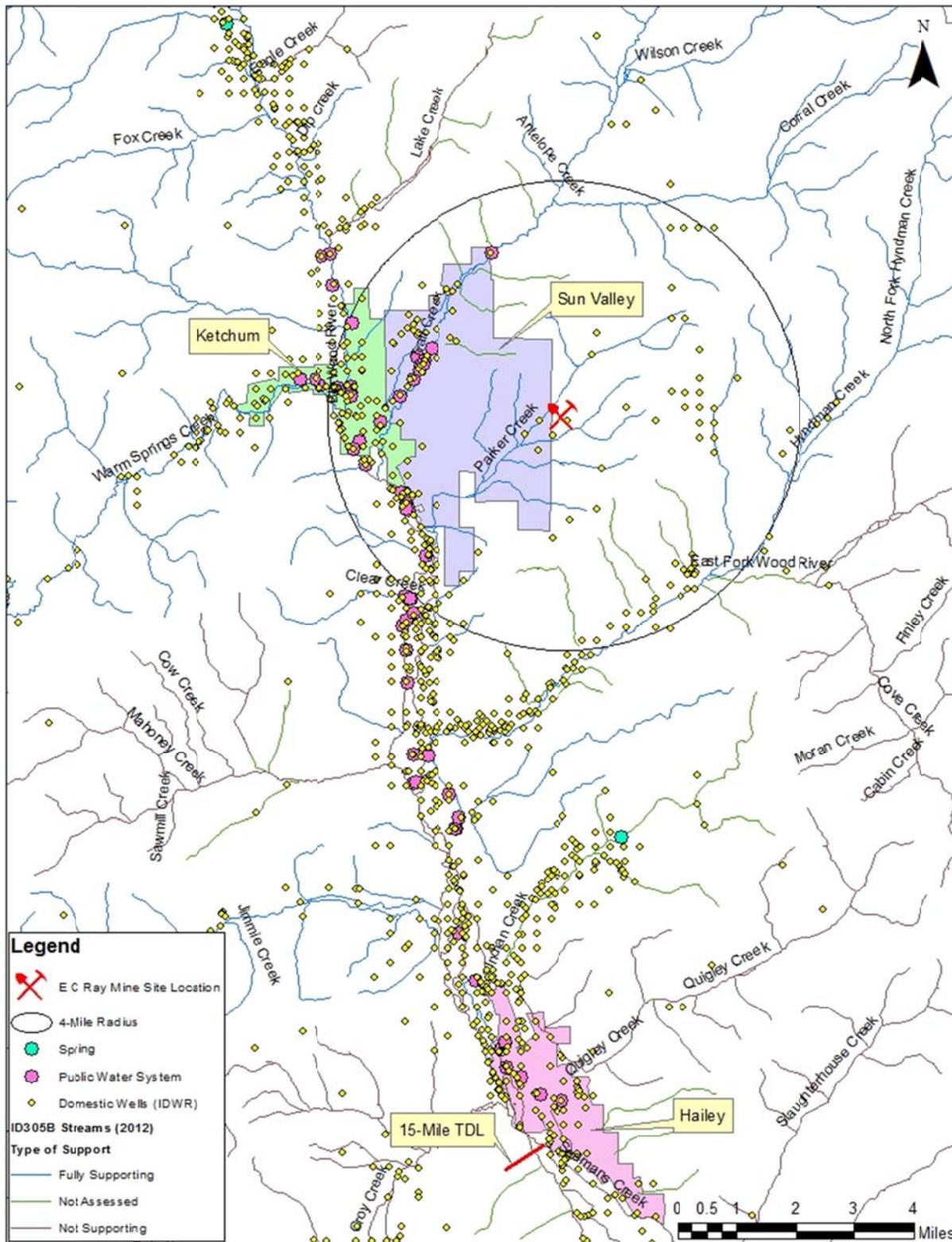


Figure 4. Domestic well and public water system locations.

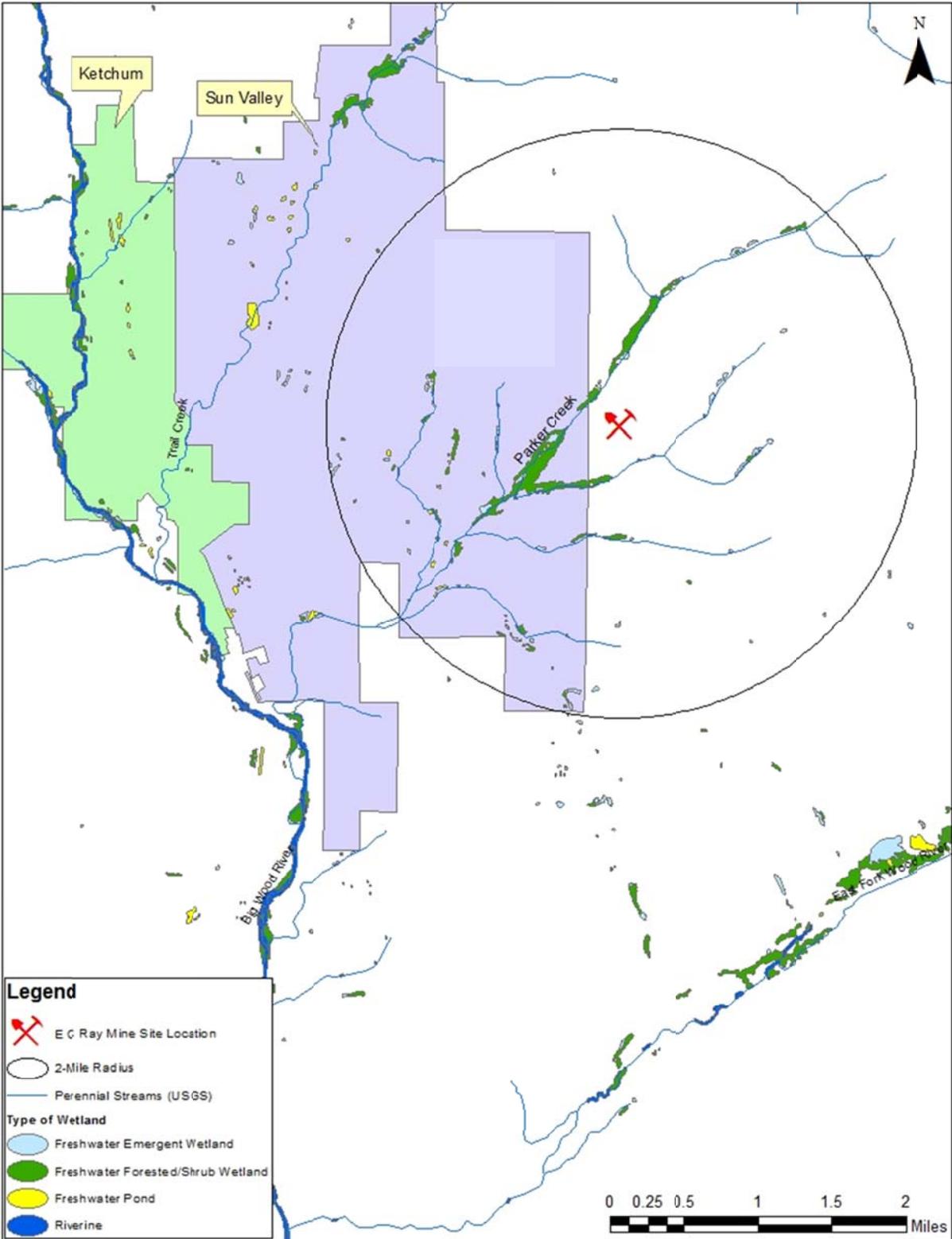


Figure 5. Wetland locations.

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Section 5. References

- Anderson, A.L., T.H. Kiislgaard, and V.C. Fryklund, Jr. 1950. *Detailed Geology of Certain Areas in the Mineral Hill and Warms Springs Mining Districts, Blaine County, Idaho*; Idaho Bureau of Mines and Geology, Pamphlet No. 90, p. 54-56, 59.
- EPA (U.S. Environmental Protection Agency). 1999. *Improving Site Assessment: Abbreviated Preliminary Assessments*. Quick Reference Guidance Series. Office of Emergency and Remedial Response Site Assessment Team. EPA-540-F-98-037. OSWER 9375.2-09FS. PB98-963308.
- IGS (Idaho Geological Survey). 2013. Mine Database. Available at:
<http://www.idahogeology.org/Services/MinesAndMinerals/Search/>
- USFWS (United States Fish and Wildlife Service). 2014. *Endangered, Threatened, Proposed, and Candidate Species with Associated Proposed and Critical Habitats in Idaho*. USFWS – Idaho Fish and Wildlife Office. Species list was reviewed by the USFWS on 10/23/2013 and is valid for 90 days after 06/17/2014.

GIS Coverages

- IDWR (Idaho Department of Water Resources). Domestic Wells (deqgis83.DBO.Domestic_Wells). Using: ArcMap GIS. Version 10.2.1. Redlands, CA: Environmental Systems Research Institute, Inc., 2013.
- Major Lithology (deqgis83.DBO.Major_Lithology). Using: ArcMap GIS. Version 10.2.1. Redlands, CA: Environmental Systems Research Institute, Inc., 2013.
- Public Water Systems (deqgis83.DBO.Public_Water_Systems). Using: ArcMap GIS. Version 10.2.1. Redlands, CA: Environmental Systems Research Institute, Inc., 2013.
- Sensitive Streams (deqgis83.DBO.ID305B_2012). Using: ArcMap GIS. Version 10. Redlands, CA: Environmental Systems Research Institute, Inc., 2013.
- USGS (US Geological Survey). Perennial Streams (deqgis83.DBO.Perennial_Streams_USGS). Using ArcMap GIS. Version 10.2.1. Redlands, CA. Environmental Systems Research Institute, Inc., 2013.
- USFWS (US Fish and Wildlife Service). 2012. National Wetlands Inventory. Available at:
<http://www.fws.gov/wetlands/index.html>

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