

### 3.8. VISUALS AND AESTHETICS

Visual resources and aesthetics are the visible physical features (landforms, water, vegetation, and structures) within the assessment area. The proposed Project would have an underground mine with support facilities and equipment located within the MOP Application Boundary encompassing approximately 1,888 acres (Project area). The total surface disturbance required for construction and operations of the mine-related facilities and access road comprises approximately 311 acres. These facilities would be visible to the public from certain viewpoints. This section describes the potential impacts on visual resources by describing the baseline conditions for visual resources and potential receptors, and providing a qualitative assessment of the severity and likelihood of the impacts of the Proposed Action and AMA.

#### 3.8.1. Analysis Methods

The location of the visible components of the Project facilities, topography and vegetation in the area, and the location of public access roadways and recreation areas are the basis for determining the assessment area of direct and secondary and impacts on visual resources.

Analysis methods involved utilization of desktop research including topographic maps, satellite imagery, and data collected from websites including:

- FWP 2016
- Montana Office of Tourism 2018
- MDT 2016a
- MDT 2016b
- Woods et al. 2002
- USGS 1967
- USGS 1995
- USDA 1997

The assessment of impacts on visual resources also included analysis of viewpoint simulations prepared for the MOP Application (Tintina 2017). Descriptions of views and view-sheds used in this assessment use the following terms to describe viewing distances:

- “Foreground” refers to views from zero to approximately 500 feet;
- “Middle-ground” refers to views from approximately 500 to 1,500 feet; and
- “Background” refers to views beyond 1,500 feet to the horizon.

The assessment area of impacts on visual resources included the area within an approximately 10-mile radius from the center of the Project area. However, because the existing topography and vegetation impose considerable restrictions to sight lines, particular emphasis is given to areas within a 2.5-mile radius (**Figure 3.8-1**).

## 3.8.2. Affected Environment

The affected environment assessment involved developing baseline descriptions of visual resources and receptors.

### 3.8.2.1 Visual Resources

Visual resources include the natural and built physical features visible in the existing landscape including buildings, fences, roads, vegetation, landforms, buildings bridges, streams, and water features, vistas of mountain peaks or other unique natural features.

According to USEPA mapping of ecoregions, the assessment area is located in Level IV Ecoregion 17q – Big Snowy-Little Belt-Carbonate Mountains, which is characterized as having logging, mining, and recreation as the principal land uses (USEPA 2002). The assessment area is in a broad rolling landscape between the Big Belt and Little Belt Mountains. Non-forested areas appear to be grasslands used predominantly for livestock grazing and related activities and drained by creeks. Distant mountain systems and isolated peaks and buttes frame vistas.

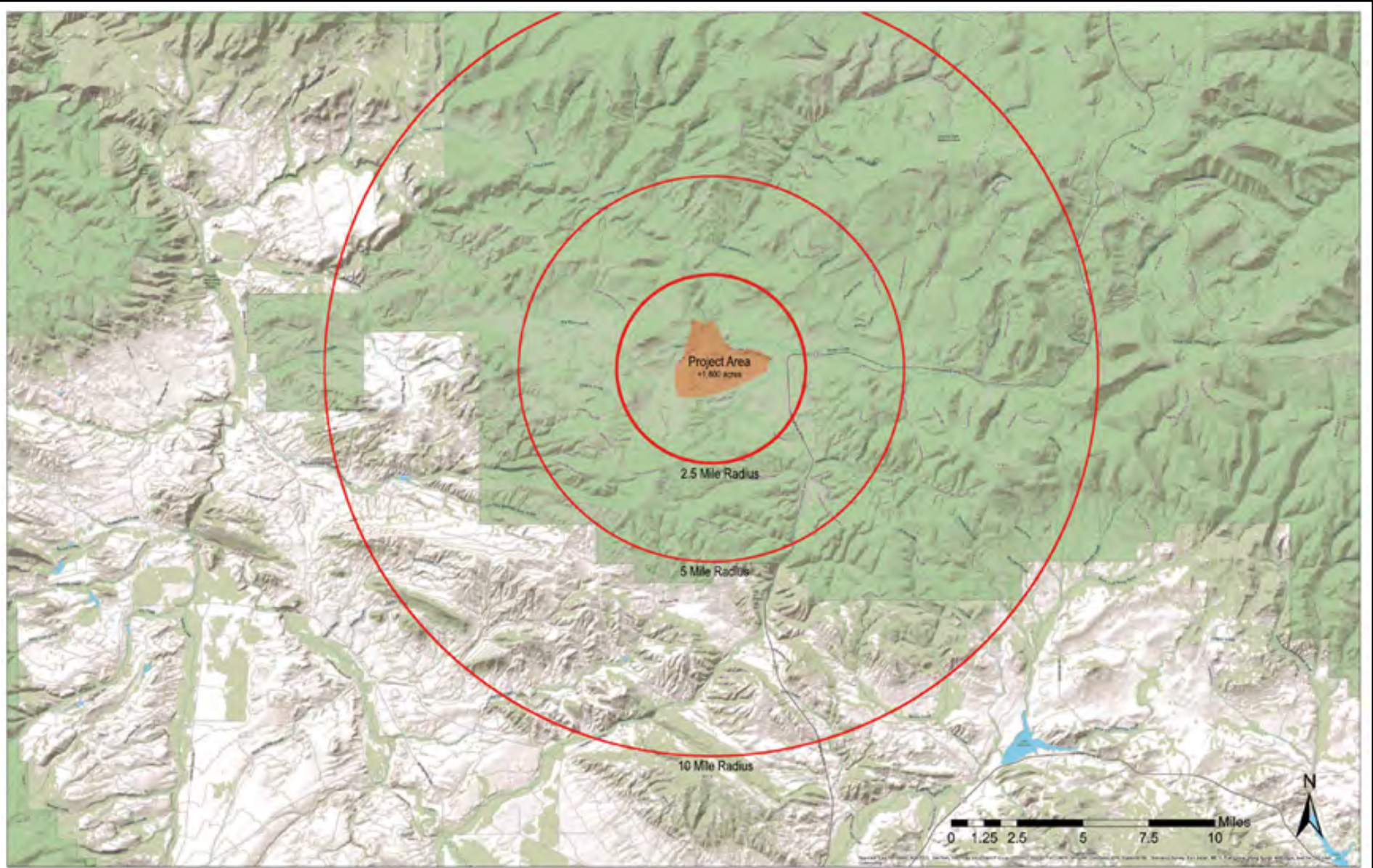
Historical development and land use has impacted the native landscape in the assessment area. Seven existing or former mines and gravel pits are within the assessment area (**Figure 3.8-2**) as well as scattered ranches and home sites.

U.S. Route 89 is the only highway in the assessment area and is the principal viewing corridor near the Project area. Other public roads with views to the Project area include Sheep Creek Road and Butte Creek Road. The foreground and middle-ground views from these roadways is of gentle to moderately sloping grasslands, fenced grazing lands, and occasional residential and quarry/mine development. Background views are generally of forested mountain ridges and occasional buttes.

### 3.8.2.2 Visual Receptors

Visual receptors include the residents and non-resident visitors that may be affected by changes to the visual resource.

The nearest resident receptors include a single residence/ranch located approximately 2.15 miles east of the Project Area, and a small residential development consisting of approximately 12 homes approximately 3 miles southeast of the Project area. Existing vegetation and topography block some views of the Project area from the single residence and all views of the Project area from the other residential development.

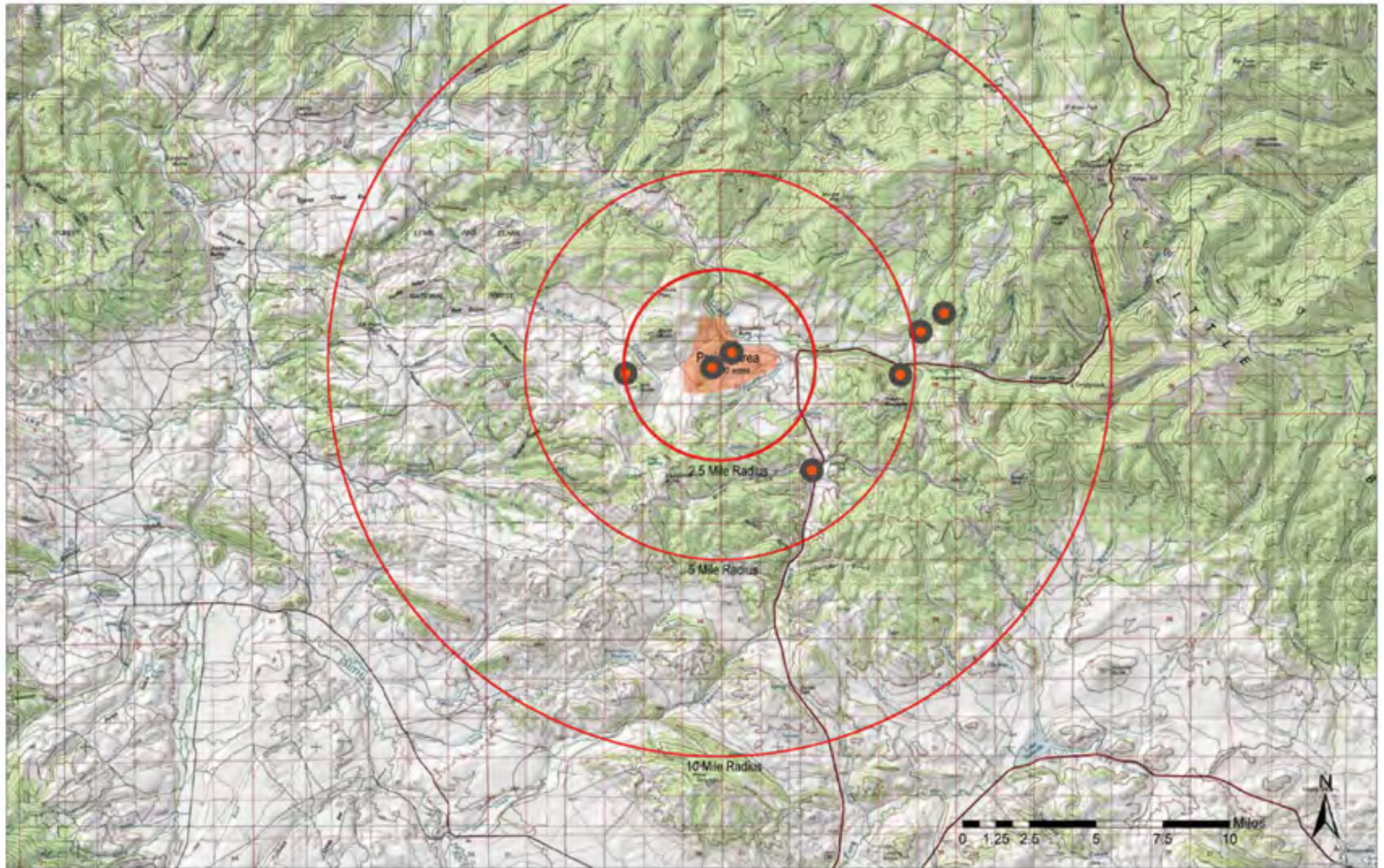


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Source: ERM 2018

**Figure 3.8-1**  
**Black Butte Copper Project**  
Assessment Area  
Meagher County, Montana





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Source: ERM 2018

**Figure 3.8-2**  
**Black Butte Copper Project**  
Existing Mines and Quarries  
Meagher County, Montana

Non-resident visitors include travelers using U.S. Route 89. Some of these are the local population travelling between White Sulphur Springs and Neihart as well as users of the two recreational facilities located within a 10-mile radius of the assessment area that are accessed from the highway (**Figure 3.8-3**). Average annual daily traffic (AADT) data from the MDT indicates that the number of vehicles using U.S. Route 89 varies from between 469 vehicles north of White Sulphur Springs to 442 vehicles south of Neihart (**Figure 3.8-4**). The short term traffic count station closest to the Project area, Site 30-2-001, is located within a 2.5-mile radius of the Project area and shows an AADT of 364 vehicles in 2016. The MDT designates U.S. Route 89 as the King's Hill Scenic Byway. Views to the Project area from U.S. Route 89 are limited to a stretch of that roadway between the intersection of U.S. Route 89 and Sheep Creek Road south for approximately one-half mile.

### **3.8.3. Environmental Consequences**

Viewers along highways and other access roads already view an altered state of the landscape. These existing alterations of the landscape include existing mines, quarries, fencing, and other associated human development.

Users of Sheep Creek Road and Butte Creek Road have prominent views of the Project area. No traffic-count information is available for Sheep Creek Road and it is assumed that it includes a subset of the travelers previously cited, including visitors from other areas using the two recreational facilities located within a 10-mile radius of the assessment area (**Figure 3.8-3**).

Views of the Project area would be limited by the relative elevation of the Project area and by its context within the existing vegetation and topographic variations.

#### **3.8.3.1. No Action Alternative**

Under the No Action Alternative, the current condition of the visual resources in the assessment area would remain as they are, including the operations of existing mines, quarries, and residential, ranching, and recreational facility activities.

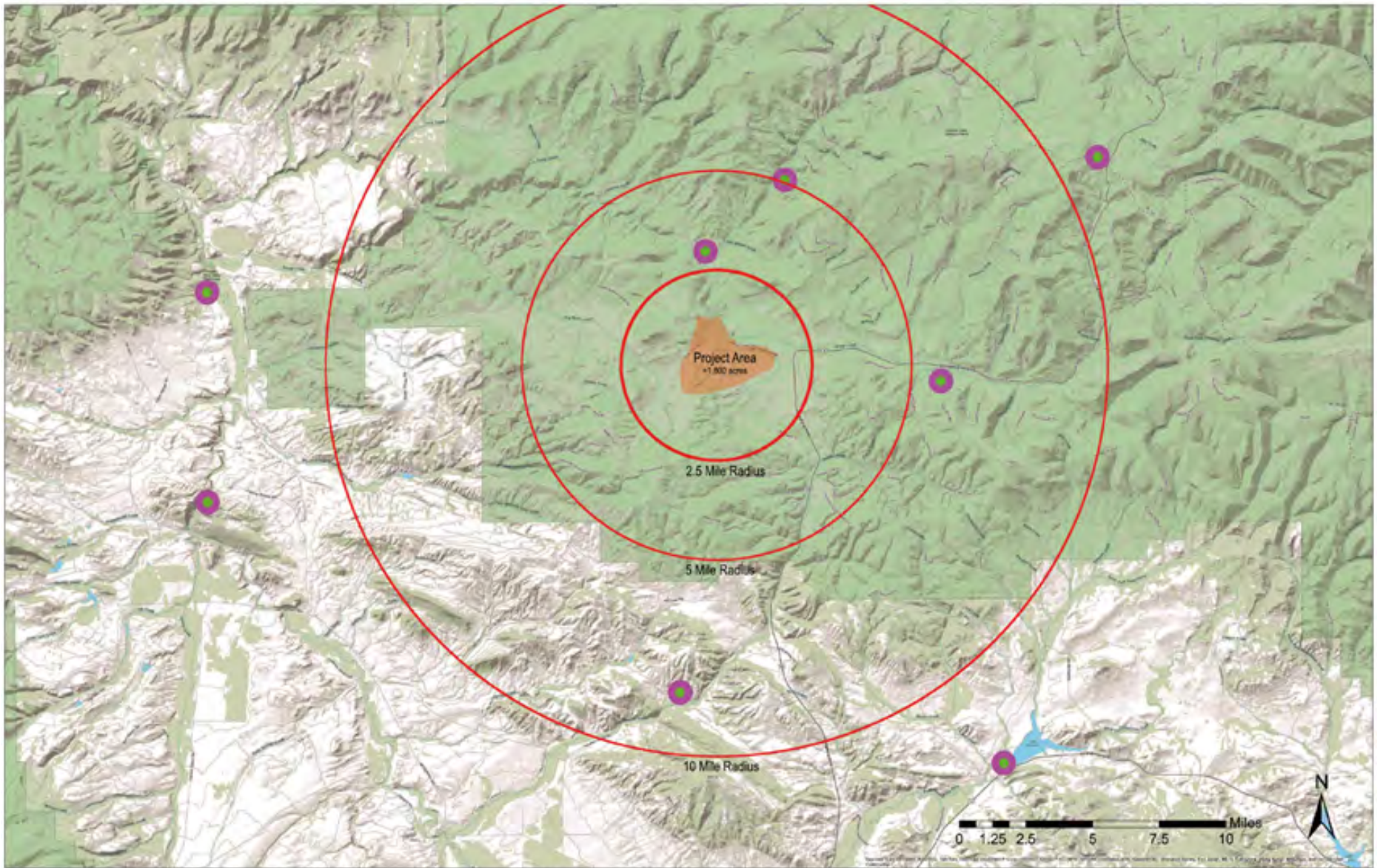
#### **3.8.3.2. Proposed Action**

The impact assessment used three key viewpoints from which the public could likely view the Project area:

- Viewpoint 2 located on U.S. Route 89 approximately 0.5 mile south of the intersection with Sheep Creek Road;
- Viewpoint 6 located on Sheep Creek Road approximately 1.3 miles west of the intersection with U.S. Route 89; and
- Viewpoint 7 located on Butte Creek Road approximately 0.75 mile southwest of the intersection with Sheep Creek Road.

These viewpoints and direction of view-shed are illustrated in **Figure 3.8-5**.



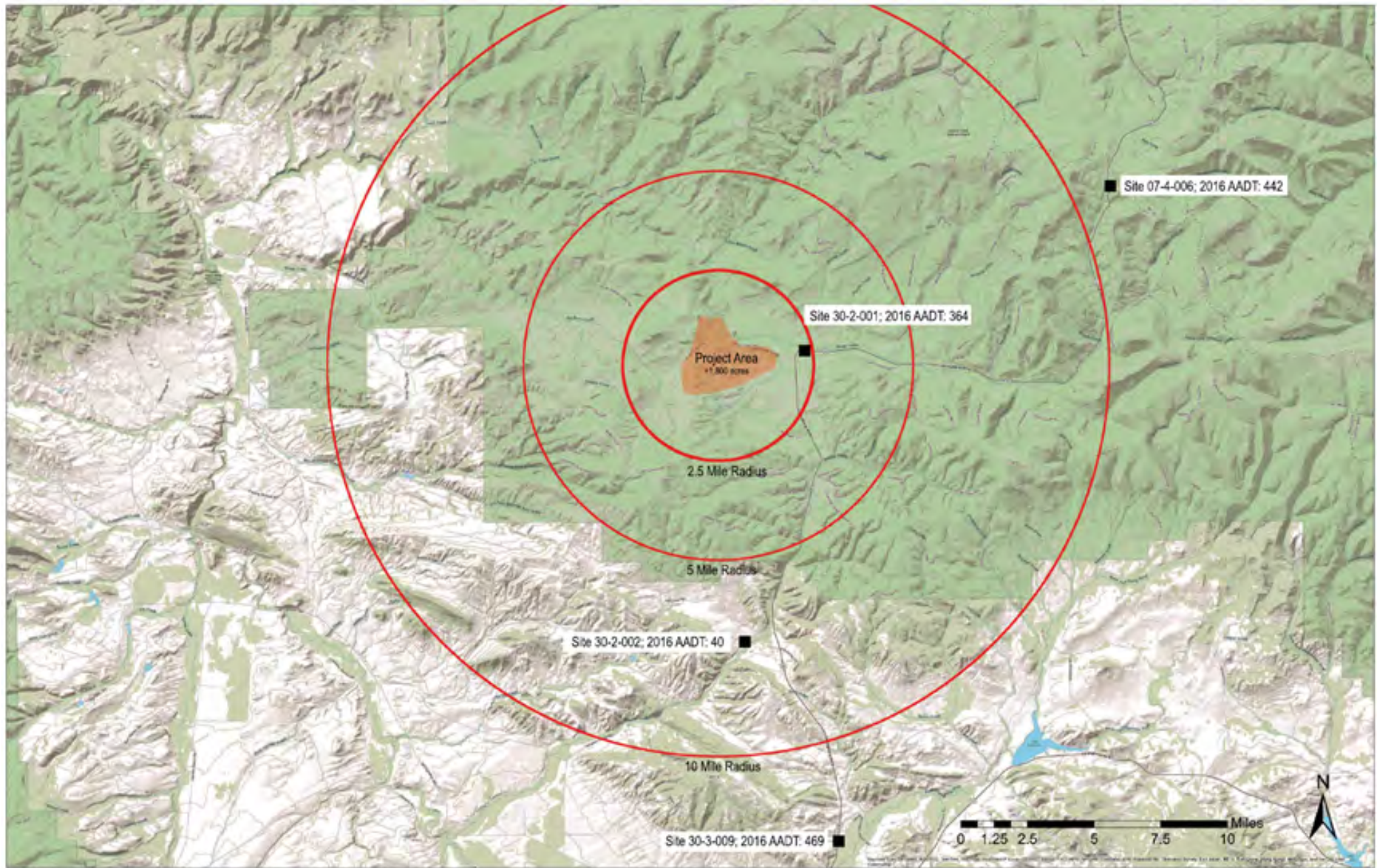


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Source: ERM 2018

**Figure 3.8-3**  
**Black Butte Copper Project**  
Campgrounds, Parks, and Recreation Areas  
Meagher County, Montana





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Source: ERM 2018

**Figure 3.8-4**  
**Black Butte Copper Project**  
 Average Annual Daily Traffic  
 Meagher County, Montana

As part of the MOP Application, the applicant prepared a before and after simulation for each of these views (**Figure 3.8-6** through **Figure 3.8-11**) as well as an oblique aerial view of the Project (**Figure 3.8-12**). The oblique aerial simulation shows the overall Project development within the context of the landscape and visual resources of the area.

**Figure 3.8-6** shows existing views from Viewpoint 2 from U.S. Route 89 and **Figure 3.8-7** simulates the impacts of the Project. The simulation demonstrates that there are no impacts to the foreground and middle-ground views of grassland and fences, and minimal impacts to the background view of Black Butte and the horizon. People travelling along U.S. Route 89 at typical speeds could catch fleeting glimpses of mine operations structures that, within the context of the overall landscape, would have minimal impact on views.

**Figure 3.8-8** shows existing views from Viewpoint 6 from Sheep Creek Road and **Figure 3.8-9** simulates the impacts of the Project. The simulation shows the impacts of the construction of the Project access road and associated clearing and grading. Foreground views of grassland and fences and background views of forested areas are unaffected whereas roadwork and removal of vegetation from the cut bank would affect visual resources. People travelling along Sheep Creek Road at typical speeds would likely notice the loss of vegetation and changes to topography required for construction of the mine access road.

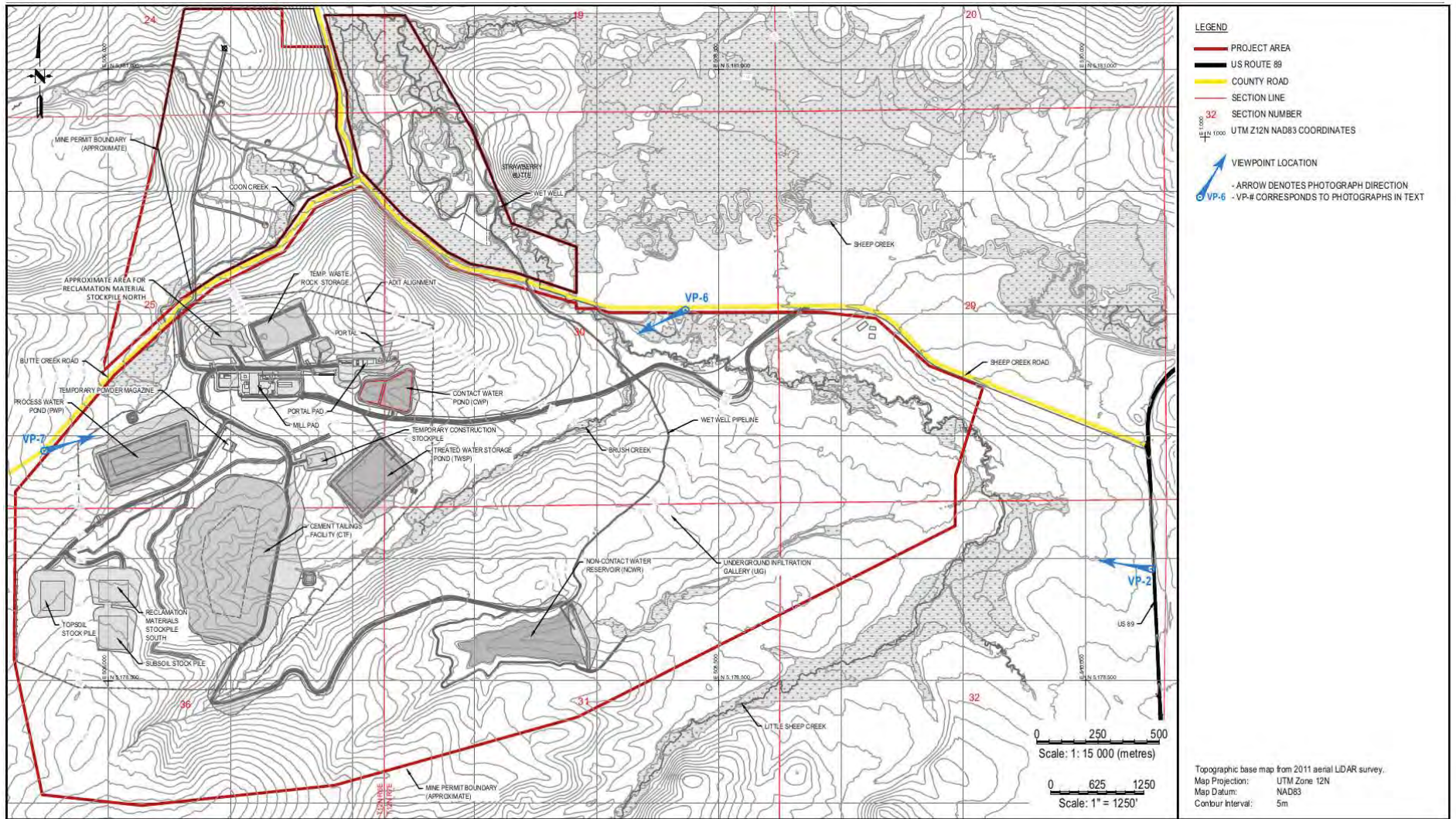
**Figure 3.8-10** shows existing views from Viewpoint 7 from Butte Creek Road and **Figure 3.8-11** simulates the impacts of the Project. The simulation shows the impacts of the construction of the Project access road, ponds, mine operations structures, and associated clearing and grading. Foreground views of grassland and fences and background views of the forested mountain range are unaffected whereas imposition of mine facilities, ponds, and construction activity would affect the middle-ground views of grasslands and Black Butte. People travelling along Butte Creek Road at typical speeds would notice changes to vegetation and topography, as well as, the imposition of mine structures, roads, and waste rock piles.

In summary, the impacts on views from the three key viewpoints include the following:

- The addition of the Proposed Action to the landscape would not adversely impact views for people using U.S. Route 89.
- Those using Sheep Creek Road to access the two recreational facilities for camping and hiking in natural areas would experience localized impacts as a result of changes to the visible landscape that could have a detrimental impact on their experience.
- Those using Butte Creek Road would experience significant localized changes to views that could have a detrimental impact on their experience.

Impacts to visual resources during construction caused by removal of existing vegetation, temporary fencing, grading, construction of roads and mine structures, and increased construction vehicle traffic would be short term, local in scope, partially reversible, and experienced by a low number of users.





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Source: Tintina 2017

**Figure 3.8-5**  
**Black Butte Copper Project**  
 Viewpoints  
 Meagher County, Montana





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**Figure 3.8-6**  
**Black Butte Copper Project**  
Viewpoint 2 Existing  
Meagher County, Montana





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**Figure 3.8-7**  
**Black Butte Copper Project**  
Viewpoint 2 Proposed  
Meagher County, Montana



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**Figure 3.8-8**  
**Black Butte Copper Project**  
Viewpoint 6 Existing  
Meagher County, Montana





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**Figure 3.8-9**  
**Black Butte Copper Project**  
Viewpoint 6 Proposed  
Meagher County, Montana



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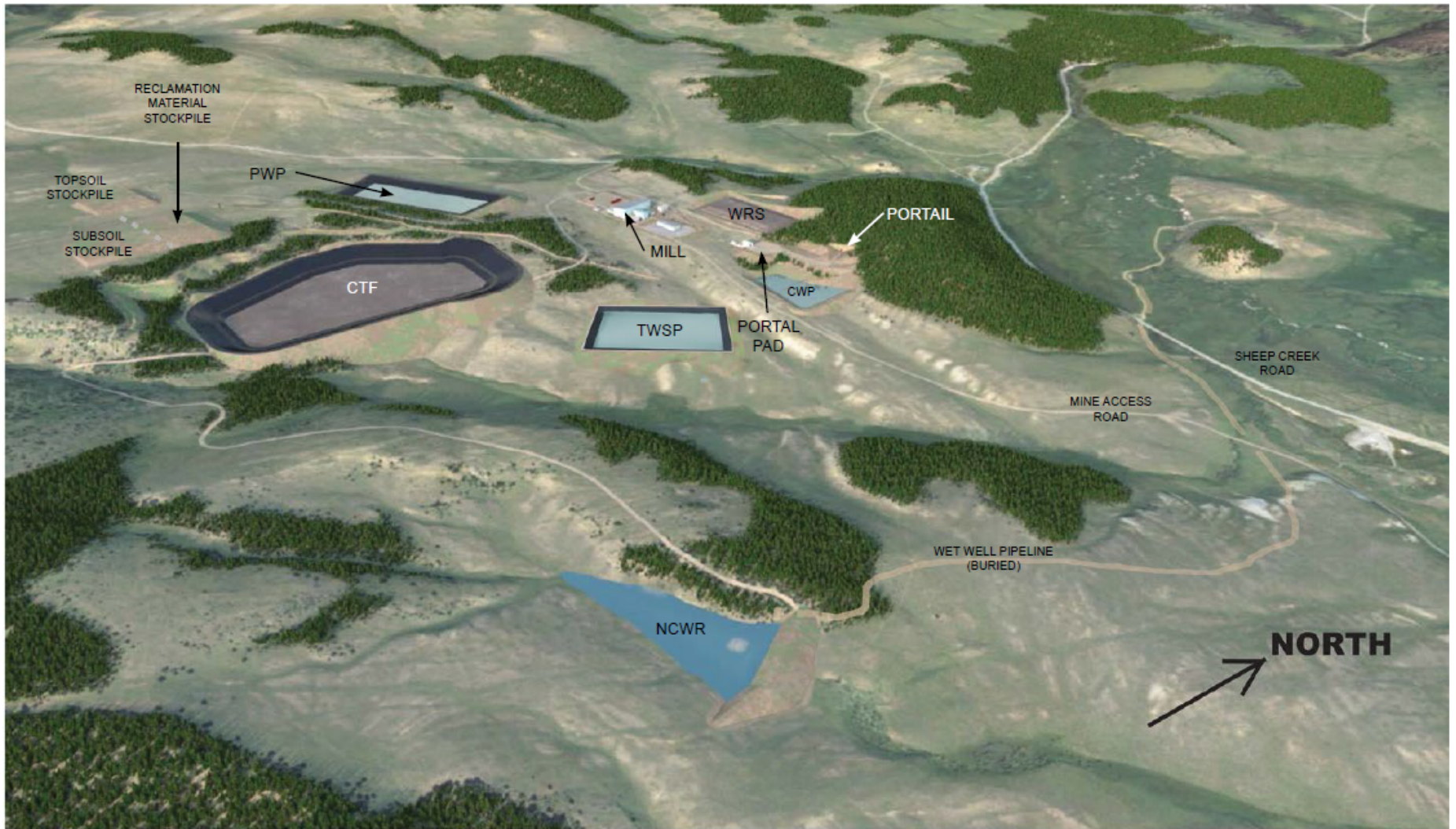
**Figure 3.8-10**  
**Black Butte Copper Project**  
Viewpoint 7 Existing  
Meagher County, Montana





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**Figure 3.8-11**  
**Black Butte Copper Project**  
Viewpoint 7 Proposed  
Meagher County, Montana



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Source: Tetra Tech 2017

**Figure 3.8-12**  
**Black Butte Copper Project**  
Oblique Aerial  
Meagher County, Montana



Impacts to visual resources during operation would be long term, local in scope, and partially reversible. The Project would use shielded lighting to minimize impacts to visual resources in the Sheep Creek valley during nighttime construction and operations activities. The proposed closure/reclamation process includes redistribution of topsoil and revegetation through planting of trees and seed mixes to re-establish pre-mining vegetative communities. Impacts to visual resources during closure would be from removal of equipment and structures, and from previously described construction and operational impacts. These impacts would be short term, local in scope, and experienced by a moderate number of users. During reclamation, grasses and shrub communities should be established within three to five growing seasons while forested communities would likely require several decades. The visual impacts would gradually diminish, and views would improve over time. Impacts to visual resources after reclamation would be long term (several years), local in scope, and experienced by a moderate number of viewers.

### **Smith River Assessment**

The Project would have no direct or secondary impacts on visual and aesthetics resources in the Smith River area. The closest distance between the Project site and the Smith River is approximately 12 miles. The existing topography and vegetation block views of the Project from the river as well as from Smith River Road.

#### **3.8.3.3. Agency Modified Alternative**

The impacts of the AMA on visuals and aesthetics would be the same as described for the Proposed Action during the operational stage of the Project. Some additional waste rock could remain exposed after reclamation due to the “Additional Backfill of Mine Workings” alternative. Impacts would vary depending on the quantity and location of the remaining waste rock and on revegetation efforts.

### **Smith River Assessment**

The AMA would have no direct or secondary impacts on visual and aesthetics resources in the Smith River area. The closest distance between the Project site and the Smith River is approximately 12 miles. The existing topography and vegetation block views of the Project from the river as well as from Smith River Road.