VISUAL RESOURCE INVENTORY STUDY
PROPOSED SITE FOR THE
EAGLE ROCK ENRICHMENT FACILITY
BONNEVILLE, IDAHO

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TABLE OF CONTENTS

Section No.		Page No.
1.0	**INTRODUCTION**	**2**
2.0	**METHODS**	**2**
3.0	**RESULTS**	**2**
3.1	**GENERAL AREA CHARACTERISTICS**	**2**
3.2	**SENSITIVE RECEPTORS**	**3**
3.3	**VISUAL RATING**	**4**
4.0	**REFERENCES**	**6**

TABLES

Table No.	Description	Page No.
1	Scenic Quality Inventory And Evaluation Chart	9
2	Scenic Quality Rating by View	10
3	Sensitivity Level Rating	11

FIGURES

Figure No.	Description	Page No.
1	Information Draft VRM Classes for BLM Properties Including the Area Surrounding the Proposed EREF Site	7

1.0 INTRODUCTION

A visual resource inventory was conducted on the proposed site for the Eagle Rock Enrichment Facility (EREF) during the week of June 1, 2008. The purpose of this field study was to collect site-specific visual resource inventory at the proposed EREF site. In addition, the inventory was conducted to identify locations of sensitive receptors.

2.0 METHODS

The inventory was conducted using the Bureau of Land Management (BLM) Visual Resource Classification System (VRCS). Scenic quality (visual appeal measure) was estimated using the process described in BLM Manual 8410 and BLM Handbook H-8410-1. The BLM process consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. The process considers seven attributes:

- landform
- vegetation
- water
- color
- adjacent scenery
- scarcity
- cultural modifications

These attributes were described and then scored (1-5) for the proposed EREF site. The scoring also considered 'users' (e.g., workers traveling past the area, farm workers, recreational sightseers), level of use, public interest in the visual resources of the area, and adjacent land uses.

Prior to and during the field survey, maps of the site and surrounding area were reviewed to identify unique features in the area, viewsheds, and likely users. The Bonneville County planner and BLM planner were contacted to confirm potential, current, and future use (e.g., industrial, agriculture). In addition, facility plans (type, location, size, color, etc.) were used to identify where and how far any facilities (including roads) or plumes might be seen.

The BLM Snake River Field Office visual resource specialist visited the proposed site and provided input during the inventory. During the site survey, photographs were taken from facility locations and toward facilities from likely visual locations (e.g., U.S. Highway 20).

Site scoring, photographs, and narratives were used to determine the visual resource class and visual quality of the site.

3.0 RESULTS

3.1 GENERAL AREA CHARACTERISTICS

The 1,700 ha (4,200 ac) proposed EREF site, in Bonneville County, is located in the eastern portion of the Snake River Plain geologic province. The Snake River Plain is a crescent shaped area of topographic depression that is bounded on three sides by mountain ranges and extends across much of the southern portion of Idaho, covering about 40,400 km^2 (15,600 mi^2). The geology of the Snake River Plain is dominated by

extensive volcanism that has deposited a thick sequence of rhyolitic and basaltic rocks, ranging up to 1,524 m (5,000 ft) thick.

Landscape characteristics surrounding the proposed site include Kettle Butte about 1.6 km (1 mi) east of the proposed site, the Lemhi Range about 45 km (28 mi) northwest of the proposed site, and East and Middle Buttes about 18 km (11 mi) west, southwest of the proposed site. In addition, the lava flow known as Hell's Half Acre is immediately south of the proposed site and U.S. Highway 20.

The proposed site is located in Sections 13-15 and portions of Sections 21-26, Township 3 North, Range 34 East. The 1,700-ha (4,200-acre) proposed site slopes gently from east to west with an average slope of approximately 1.4 percent. The elevation varies from about 1,554 m (5,100 ft) near U.S. Highway 20 to about 1,585 m (5,200 ft) to the north of the property. No major defined drainage features are evident on the proposed site. There is a minor drainage feature that runs from near the center of the proposed site toward the southwest portion of the site.

The proposed EREF site is within the sagebrush steppe vegetation type. The vegetation in this area is dominated by Wyoming big sagebrush (*Artemisia tridentata wyomingensis*). The site has been modified by farming. Sagebrush has been removed from about 30% of the site and seeded with crested wheatgrass (*Agropyron cristatum*). In addition, about 22 percent of the site 390 ha (960 acres) is in irrigated crops (grains and potatoes). The remainder of the site is native sagebrush steppe vegetation.

There are a few structures and features on the proposed site and within site of the proposed site. The on-site structures include an irrigation well, six pivot irrigation systems, dirt roads, livestock handling pens, and barbed wire fences. In addition, there are two potato sheds and four grain bins on the property adjacent to U.S. Highway 20

There are similar structures within sight of the proposed EREF site. Structures include a few potato storage facilities to the southwest of the site, stock handling areas immediately across U.S. Highway 20 and immediately east of the site, and several irrigation systems within 3.2 km (2 mi) of the proposed site. In addition, there is a powerline that runs to a substation near the southeast boundary of the proposed site. A seismic station with a communication tower is visible on Kettle Butte and several other communication towers are located west of the proposed site near and on East and Middle Buttes. In addition, a tower is located about 9.2 km (5.7 mi) east of the proposed site. The proposed location of the EREF buildings can be observed from approximately 0.4 km (0.25 mi) east of the site to about 6.4 km (4 mi) west of the site along U.S. Highway 20.

3.2 SENSITIVE RECEPTORS

The proposed EREF site is surrounded by State of Idaho, BLM, and private property. The property of the north, east, and west sides are primarily used for grazing and agricultural activities. However, BLM property also is used for recreation. In addition, BLM property to the south is designated as the BLM Hell's Half Acre Wilderness Study Area (WSA) and National Park Service (NPS) National Landscape Landmark (NLL).

3.3 VISUAL RATING

3.3.1 Visual Resource Class

The visual resource inventory process provides a means for determining visual values (BLM, 1984a; BLM, 1984b; BLM, 1986; BLM 2008). The inventory consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, lands are placed into one of four Visual Resource Classes that are established through the Resource Management Planning (RMP) process. These classes represent the relative value of the visual resources: Classes I and II are the most valued, Class III represents a moderate value, and Class IV is of least value. The classes provide the basis for considering visual values in the RMP process. The objectives of each class are described below, using BLM Manual and Handbook 8410:

> Class I Objective is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
>
> Class II Objective is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
>
> Class III Objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
>
> Class IV Objectives is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

BLM's draft classification of BLM lands surrounding the proposed site is VRM Class II (**Figure 1**). These lands serve as a buffer to the Class I designation for the Hell's Half Acre WSA and provide an open visual landscape to the north of U.S. Highway 20. As described above, the objective of VRM Class II is to retain the existing character of the landscape. There should be a low level of change to the characteristic landscape of VRM Class II areas on BLM-managed lands. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Private lands and Department of Energy Idaho National Laboratory lands within this Class II area have some development, including potato cellars, equipment barns, and industrial facilities. In addition, the county has zoned this area G-1 which allows for industrial development along with agriculture and grazing. Therefore, the site could be considered a VRM Class III or IV area.

3.3.2 Scenic Quality Inventory and Evaluation

The proposed site was evaluated the week of June 3, 2008 using the BLM visual resource inventory process (BLM, 1984b; BLM 1986) to determine the scenic quality of the site.

The AREVA site received a "B" rating (see Table 1, Scenic Quality Inventory and Evaluation Chart). Scenic quality is a measure of the visual appeal of a tract of land which is given an A, B, or C rating (A-highest, C-lowest) based on the apparent scenic quality using the seven factors outlined in Table 1, Scenic Quality Inventory and Evaluation Chart. The supporting scores using the BLM VRM process are provided in Tables 2 and 3. Below is a discussion of the visual characteristics of the site and surrounding area.

The scenic quality of the site from the four cardinal directions is relatively similar, although variation due to vegetation on site and adjacent scenery does result in some differences in the scores (Table 2). The landform on the proposed site is open with rolling topography. Adjacent topography is similar but has increased variation with buttes and mountains in the background, Kettle Butte immediately to the east of the site, and a lava flow immediately south of the site. Vegetation is relatively simple composed of three types: sagebrush, seeded crested wheatgrass, and crops (potatoes and grains). There are no water features on the site or on adjacent areas, although there are dry drainages on the site and throughout the area. The colors on the site and area are relatively muted with light greens (sagebrush and wheatgrass), dark greens (crops), and dark browns (buttes, lava flows, and rock outcrops). Adjacent scenery is similar to the site, but does have increased complexity with the lava flow and buttes. The site and surrounding area reflects limited development and a focus on grazing and crops. Development has generally been limited to farming and grazing, although there are towers in the area and an industrial complex to the west that is not observed from the site.

Four sensitivity units were identified to assess the potential viewer response to the viewshed (Table 3). The units were U.S. Highway 20, the WSA, BLM Land other than the WSA, and private land. Sensitivity would generally be low for U.S. Highway 20, BLM Land other than the WSA, and private land. The sensitivity was assessed as moderate or high from the WSA. This increased sensitivity is related to WSA users that may consider any type of activity or structure as substantially reducing the viewing quality and recreational experience on the WSA. This reduction in quality would be minimized because the proposed facility would be some distance from the WSA.

4.0 REFERENCES

BLM, 1984a. Visual Resource Management, BLM Manual 8400, U.S. Department of Interior, Washington, DC, 1984, Website: http://www.blm.gov:80/nstc/VRM/8400.html, Date accessed: April 4, 2008.

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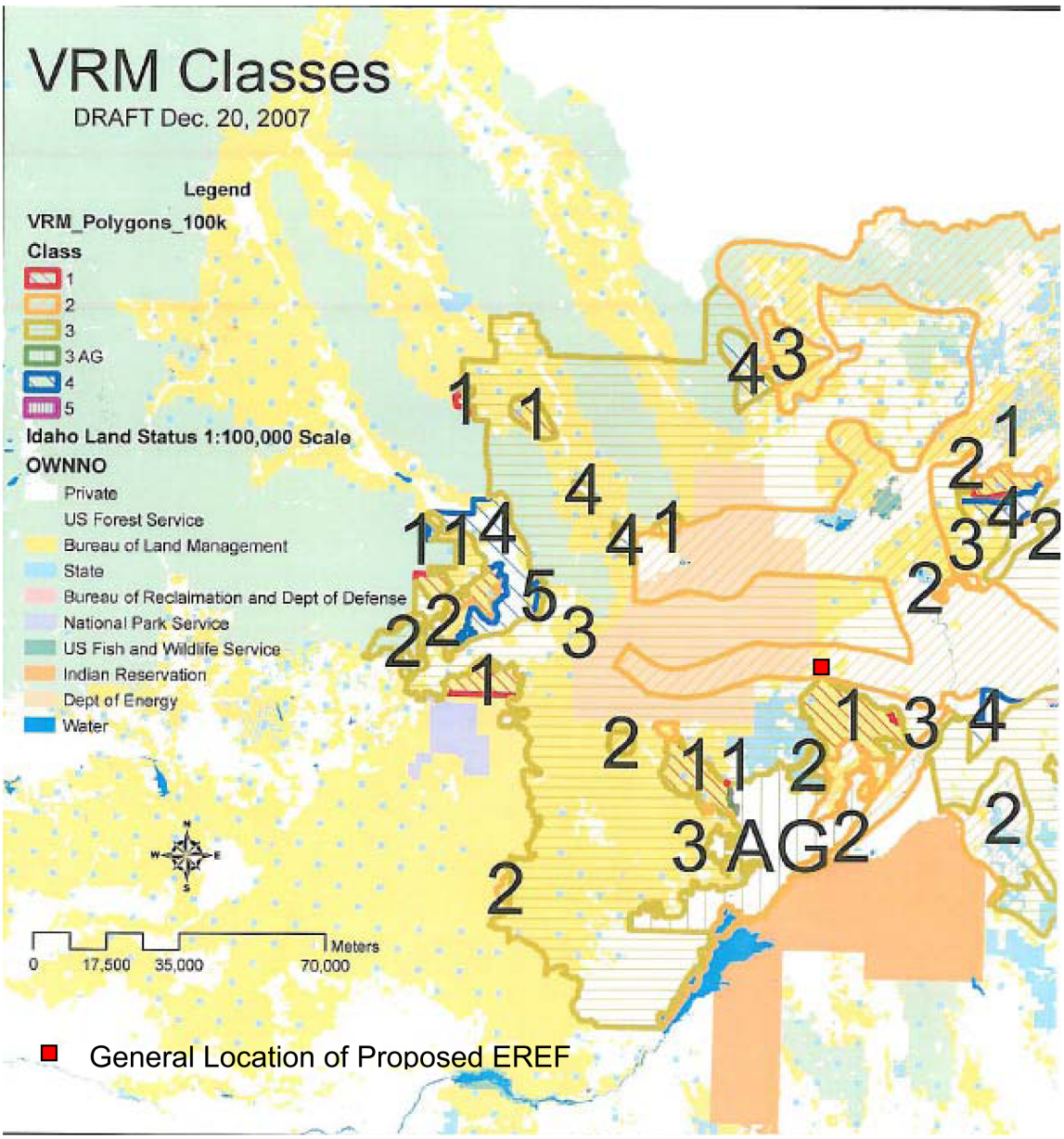

Figure 1. Draft VRM Classes for BLM Properties Including the Area Surrounding the Proposed EREF Site. (provided by the Bureau of Land Management Upper Snake River Field Office)

TABLES

Table 1 Scenic Quality Inventory And Evaluation Chart

Key Factors	Rating Criteria and Score		
Landform	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variations or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers. Score: 5	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosion patterns or variety in size and shape or landforms; or detail features which are interesting though not dominant or exceptional. Score: **3**	Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features. Score: 1
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns. Score: 5	Some variety of vegetation, but only one or two major types. Score: **3**	Little or no contrast in vegetation. Score: 1
Water	Clear and clean appearing, still, or cascading white water; any of which are a dominant factor in the landscape. Score: 5	Flowing or still; but not dominant in the landscape. Score: 3	Absent or present, but not noticeable Score: **0**
Color	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water, or snow fields Score: 5	Some intensity or variety in colors and contrast of the soil, rock and vegetation, but not a dominant scenic element Score: **3**	Subtle color variations, contrast, or interest; generally mute tones. Score: 1
Influence of Adjacent Scenery	Adjacent scenery greatly enhances visual quality. Score: 5	Adjacent scenery moderately enhances overall visual quality. Score: **3**	Adjacent scenery has little or no influence on overall visual quality. Score: 0
Scarcity	One of a kind; or unusually memorable or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. Score: 5	Distinctive, though somewhat similar to others within the region. Score: 3	Interesting within its setting, but fairly common within the region. Score: **1**
Cultural Modifications	Modifications add favorably to visual variety while promoting visual harmony. Score: 2	Modifications add little or no visual variety to the area, and introduce no discordant elements. Score: **0**	Modifications add variety but are very discordant and promote strong disharmony. Score: -4

Notes:

Total score for the proposed site: 13 (sum of key factor scores)

Scenic Quality: A = 19 or more; B = 12-18; C = 11 or less

Scores in bold represent scores assigned to the proposed site. Unbold scores are from the BLM rating guide.

Table 2. Scenic Quality Rating by View

View Location	2. Landform	3. Vegetation	4. Water	5. Color	6. Adjacent Scenery	7. Scarcity	8. Cultural Modification	9. Total Score	Scenic Quality Rating Explanation
South Boundary View								**10**	
2	2								Level to rolling topography, Kettle Butte to the northeast
3		3							Crested wheatgrass area, low rolling hills
4			0						None
5				1					Mute tones w/ crested wheatgrass
6					3				Sagebrush and lava flows, and crop areas
7						1			Common
8							0		Farm structures, U.S. Highway 20, fences
East Boundary View								**13**	
2	3								Rolling topography; buttes and mtns in background
3		3							Crop circles, crested wheatgrass, sage areas
4			0						None
5				3					Variations from 3 vegetation types
6					3				Lava flow to the south, Kettle Butte immediately east
7						1			Common
8							0		Pivot irrigation systems, dirt roads, fences, antenna in background
North Boundary View								**7**	
2	2								Low rolling hills, Kettle Butte to the east
3		2							Crop circles & sagebrush,
4			0						None
5				1					Simple color in crop area; more complex in sagebrush
6					1				Similar; Kettle Butte to east, crested wheatgrass areas
7						1			Common
8									Irrigation, fences, dirt roads
West Boundary View								**13**	
2	4								Rolling topography; Kettle Butte in immediate background
3		3							Mainly sage; some crested wheatgrass
4			0						None
5				2					Sage brush lava outcrops, grass areas
6					3				Lava flow to the south, Kettle Butte immediately east
7						1			Common
8							0		Fences, dirt roads

Table 3. Sensitivity Level Rating

SENSITIVITY LEVEL RATING UNIT	2. Type of User	3. Amount of Use	4. Public Interest	5. Adjacent Land Uses	6. Special Areas	7. Other Factors	8. Overall Rating	EXPLANATION
U.S. Highway 20	L[a]	M	L	L	L		L	Primarily workers and through travelers; grazing and limited recreation use; likely low interested related to U.S. Highway 20.
WSA	M/H	L/M	M/H	M/H	H		M/H	Site is not visible from WSA trailhead; but is visible for those walking trails although over 1.5 miles away.
Other BLM Land	M	L	L/M	L	L		L	Generally used for grazing although some recreational/hunting use. EREF would be partially screened on north and west boundaries of site but fully visible form northeast side of boundary.
Private Land	L	L	L	L	L		L	Land use is grazing; limited use; some owners are absentee.

[a] L = low; M = Moderate; H = High