

**SECTION 30**

**POST-RECLAMATION LAND USE**

**TABLE OF CONTENTS**

<b>SECTION</b>	<b>SECTION TITLE</b>	<b>PAGE NUMBER</b>
SECTION 30	POST-RECLAMATION LAND USE.....	1
30.1	Post-Reclamation Land Use .....	1
30.2	Post-Reclamation Land Utility and Capability .....	1
30.3	Alternative Post-Reclamation Land Uses .....	2
30.4	Conformance with Land Use Policies and Plans .....	2
30.5	Post-Reclamation Land Use Information Collection and Analysis .....	3
	Personnel .....	3
	References .....	3

**SECTION 30**

**POST-RECLAMATION LAND USE**

**LIST OF TABLES**

<b>TABLE NUMBER</b>	<b>TABLE TITLE</b>
<a href="#"><u>30.2-1</u></a>	Recommended Nutrient Requirements for Cattle and Sheep Under Range Conditions During Gestation and Lactation on a Dry-Matter Basis
<a href="#"><u>30.2-2</u></a>	Nutrient Content at Various Stages of Growth for Forage Species Used in Revegetation Seed Mix

**SECTION 30**

**POST-RECLAMATION LAND USE**

**LIST OF APPENDICES**

**APPENDIX**

**NUMBER      APPENDIX TITLE**

---

[30.A](#)              Land Use Correspondence

**SECTION 30**

**POST-RECLAMATION LAND USE**

**LIST OF REVISIONS DURING PERMIT TERM**

<b>REV. NUMBER</b>	<b>REVISION DESCRIPTION</b>	<b>DATE APPROVED</b>
------------------------	-----------------------------	--------------------------

---

## SECTION 30 POST-RECLAMATION LAND USE

~~BHP Navajo Coal~~Navajo Transitional Energy Company (~~BNCCNTEC~~) is committed to reclamation activities that will restore the land disturbed by mining activities to a condition capable of supporting the post mining land use (PMLU). Major objectives in achieving this goal include:

- Objective 1: Restore disturbed lands to a condition capable of supporting the PMLU.
- Objective 2: Conserve and utilize the suitable plant growth media, including topdressing and lighter-textured overburden on affected lands to the extent necessary to meet Objective 1.
- Objective 3: Establish on all affected areas a diverse, effective, and self-sustaining vegetation cover of the same seasonal variety as the native vegetation.
- Objective 4: Reclaim affected areas in an environmentally sound manner and as contemporaneously as practicable with the mining operation.
- Objective 5: Minimize disturbance to the hydrologic balance and restore prominent drainage features of the permit area to approximate the pre-mining conditions.

To achieve these objectives, ~~BNCCNTEC~~ will implement the methods and practices discussed in Sections 30 through 39 of the permit application package.

### 30.1 Post-Reclamation Land Use

The PMLU for the Pinabete Mine Plan permit area (permit area) has been designated as rangeland for the grazing of domestic livestock and wildlife habitat. The grazing PMLU capability of the reclaimed lands is expected to be equal to or greater than the pre-mining capability. This designated land use was developed in agreement with the Navajo Nation and Bureau of Indian Affairs (BIA) ([Appendix 30.A](#)) and is the same as the pre-mining land use.

As reclaimed lands become established, ~~BNCCNTEC~~ may utilize grazing as a management option.

[Burnham Road \(BIA 3005 and Navajo Road N-5082\), an existing public road that provides access to the Navajo Nation's Burnham Chapter area, lies within the eastern portion of the ~~BNCCNTEC~~ lease area. Burnham Road will remain as a permanent post-mine feature and will continue to function as a public road under BIA's jurisdiction. Road design plans are provided in Section 40, Environmental Protection and public road protection plans are provided in Section 40.6, Public Roads Protection Plan.](#)

### 30.2 Post-Reclamation Land Utility and Capability

Revegetation success standards for vegetation cover, production, species diversity, and shrub density ensure that a productive and nutritious balance of forage will be available to domestic livestock as well as

meeting wildlife species' needs for food and cover habitat. Revegetation success standards for the permit area are presented in Section 37 (Post-Reclamation Vegetation).

To meet basic physiological functions, range livestock and wildlife species require a proper balance of forage nutrition. The plant species used in the revegetation program are selected on the basis of:

1. Adaptability to local environmental conditions
2. Palatability and nutritional value to livestock and wildlife
3. Ability to provide habitat for wildlife

Positive benefits in terms of animal gains and conditioning are realized when the quality of forage is above that which is necessary to meet minimum nutritional needs. Providing forage above nutritional minimums not only improves economic returns, but also allows animals to maintain themselves during seasonal periods when forage quality and quantity is low. Protein, energy, phosphorus, and carotene (Vitamin A) are the four nutrients most critical to range livestock production. In "Nutritive Value of Seasonal Ranges," Cook and Harris (1977) demonstrate that digestible protein is the best indicator of forage quality and is one of the better nutrients associated with animal gains. Forage nutrient quality is directly related to plant growth stage, palatability, and seasonal variations in both of these factors. Proper range and livestock management is therefore related to long-term sustainability of seasonal forage quantity and quality.

The nutrient requirements for digestible protein, energy, phosphorus, and carotene for both sheep and cattle are shown in [Table 30.2-1](#). The nutrient content of the major range forage species contained in the reclamation seed mix is shown in [Table 30.2-2](#). A mixture of warm season grasses, cool season grasses, and palatable shrubs ensures forage of sufficient nutrient quality will be available during both the growing and dormant seasons. A comparison of [Table 30.2-1](#) and [Table 30.2-2](#) shows that vegetation resources of reclaimed areas will provide suitable quality forage during all four seasons. While only minimum maintenance needs may be met during the winter months, forage resources of higher quality during the growing seasons will provide animal gains and conditioning benefits to livestock that may be drawn upon during lean periods.

### **30.3 Alternative Post-Reclamation Land Uses**

The post-mine land use will be grazing of domestic livestock and establishment of wildlife habitat. Therefore, ~~BNCCNTEC~~ is not proposing an alternative post-mining land use at this time.

### **30.4 Conformance with Land Use Policies and Plans**

The proposed post-mining land use of grazing and wildlife habitat was developed in agreement with the Navajo Nation and the BIA and is consistent with the pre-mine land use ([Appendix 30.A](#)).

The Tiis Tsoh Sikaad (Burnham) Chapter has developed a community land use plan to assist the chapter in long-range planning (Architectural Research Consultants 2005). Although this plan primarily focuses on identifying suitable housing and development areas, it does recognize that livestock grazing is an important practice in the chapter. Some of the goals of the Burnham community are to: identify and set aside suitable lands for grazing and agriculture; promote range management practices that make ranching a sustainable use of the land; and retain existing wildlife. These goals are also represented in the planning policies used to implement the land use plan.

### 30.5 Post-Reclamation Land Use Information Collection and Analysis

~~BNCNTEC~~ personnel responsible for the collection and analysis of the information contained within this section are listed below.

#### *Personnel*

Persons or organizations responsible for data collection, analysis, and preparation of this permit application package section:

~~Kent Applegate~~

BHP Billiton Mine Management

~~Vivie Melendez~~

Company (disclosed agent)

~~BHP Navajo Coal~~ Navajo Transitional

Farmington, NM

Energy Company

#### *References*

Architectural Research Consultants, Inc. 2005. Community Land Use Plan for the Burnham Chapter.

Unpublished report prepared for the Burnham Chapter Community Land Use Planning Committee.

Cook, C.W., and L.E. Harris. 1977. Nutritive Value of Seasonal Ranges. Bulletin 472. Utah Agricultural Experiment Station. Soil Conservation Service. National Range Handbook, U.S. Department of Agriculture. Logan, Utah