SECTION 30

POST-RECLAMATION LAND USE

TABLE OF CONTENTS

SECTION 30

POST-RECLAMATION LAND USE

LIST OF TABLES

SECTION 30

POST-RECLAMATION LAND USE

LIST OF APPENDICES

SECTION 30

POST-RECLAMATION LAND USE

LIST OF REVISIONS DURING PERMIT TERM

REV. NUMBER	REVISION DESCRIPTION	DATE APPROVED

SECTION 30 POST-RECLAMATION LAND USE

Navajo Transitional Energy Company (NTEC) 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 vegetative 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, NTEC 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 No Name Permit (NNP) 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, NTEC may utilize grazing as a management option.

30.2 Post-Reclamation Land Utility and Capability

Revegetation success standards for vegetative 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 NTEC's NNP 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 Valve 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 vegetative 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 Use

The post-mine land use will be grazing of domestic livestock and establishment of wildlife habitat. Therefore, NTEC 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 indentifying 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 polices used to implement the land use plan.

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

Savory, A. 1988. Holistic Resource Management. Island Press, Covelo, California.

Table 30.2-1 Recommended Nutrient Requirements for Cattle and Sheep Under Range Conditions During Gestation and Lactation on a Dry-Matter Basis [1]

	Percentage of ration or amount/pound of feed			
Phase of production	DP[2]	ME[3]	P[4]	Carotene
	%	(kcal/lb)	(%)	(mg/lb)
Gestation	4.4	665	0.17	0.6
Lactation				
First 8 weeks	5.4	900	0.22	1.6
Last 12 weeks	4.5	700	0.20	1.6

[1] Nutrient requirements are slightly higher for sheep because smaller animals have a somewhat higher metabolic requirement per unit of body weight.

[2] DP = digestible protein

[3] ME = metabolizable energy

[4] P = phosphorus

Source: Cook and Harris 1977

Table 30.2-2 Nutrient Content at Various Stages of Growth for Forage Species Used in Revegetation Seed Mix

Species	Stage of growth	DP[1] (%)	ME[2] (kcal/lb)	P[3] (%)	Carotene (mg/lb)
Alkali sacaton	vegetative	5.3	950	.24	45.00
(*Sporobolus airoides*)	flower	7.2	890	.22	-
	mature	3.4	880	.14	25.00
	standing cured	1.4	750	.08	0.67
Fourwing saltbush	vegetative	9.4	1180	.21	65.00
(*Atriplex canescens*)	mature	6.5	1060	.19	25.00
	standing cured	5.8	847	.10	18.01
Galleta	vegetative	5.6	845	.20	-
(Pleuraphis jamesii)	boot	5.4	845	.06	-
	mature	4.4	621	.12	25.00
	standing cured	1.9	429	.08	0.92
Giant dropseed[4]	vegetative	5.4	1090	.24	46.00
(*Sporobolus giganteus*)	boot	4.2	973	.22	-
	mature	3.9	933	.10	0.52
	standing cured	1.6	913	.05	0.61
Indian ricegrass	vegetative	9.0	1276	.26	35.00
(*Achnatherum hymenoides*)	flower	5.6	992	.25	0.40
	mature	4.2	851	.15	-
	standing cured	1.4	760	.09	0.09
Sand dropseed[4]	vegetative	5.4	1090	.24	46.00
(*Sporobolus cryptandrus*)	boot	4.2	973	.22	-
	mature	3.9	933	.10	0.52
	standing cured	1.6	913	.05	0.61
Shadscale	vegetative	9.1	918	.17	25.00
(*Atriplex confertifolia*)	mature	8.1	920	.14	22.00
	standing cured	4.4	916	.06	-
Western wheatgrass	4th leaf	5.0	1068	.20	-
(*Pascopyrum smithii*)	boot	11.9	1080	.26	60.00
	mature	3.9	1000	.16	-
	standing cured	4.4	995	.10	0.10

Table 30.2-2 (continued)

Species	Stage of growth	DP[1] (%)	ME[2] (kcal/lb)	P[3] (%)	Carotene (mg/lb)
Winterfat	vegetative	9.0	960	.27	35.00
(*Krascheninnikovia lanata*)	boot	8.2	842	.18	25.00
	mature	6.1	749	.19	20.00
	standing cured	6.0	488	.14	5.00
Scarlet globemallow	vegetative	12.2	1344	.18	-
(*Sphaeralcea coccinea*)	full leaf	9.4	1270	.18	-
	mature	8.1	1264	.15	-
	standing cured	6.6	928	.15	-

[1] DP = digestible protein.

[2] ME = metabolizable energy.

[3] P = phosphorus.

[4] Sand dropseed values were also used for Giant dropseed because of the species similarity and the unavailability of specific values for Giant dropseed.

Source: Cook and Harris 1977

Appendix 30.A

Land Use Correspondence

M 156

INTER-OFFICE CORRESPONDENCE

TO: A. F. GEIGER

DATE: April 5, 1971

COPIES TO:
- ☐ B. Grant
- ☐
- ☐
- ☐
- ☐
- ☐
- ☐ Files

FROM: A. KING

SUBJECT: NAVAJO AMENDMENT # 4

REFERENCE: Contract No. # 14-20-603-2505
Mining Lease - Tribal Indian Lands

The Amendment # 4 was passed 68-0 at a regular chapter meeting at the Nenahnezad Chapter on April 4, 1971. Although it took two meetings and a total of about six hours discussion on the amendment, the following were the peoples' main concern;

1. Reclamation in all areas that are mined, so eventually they will be able to reuse the land for grazing. They were assured the company will make all efforts to knock down the spoil piles and make it safe enough so the land will be reuseable.

2. Employment of as many Navajos as we possibly can take. It was mentioned that there are many non-Navajos employed where a Navajo should be working. They were told that we employ Navajos where they are qualified, but we have to have experience and trained personnel on all technical positions.

3. Compensation for their grazing rights and personal property on leased lands. They were advised that the tribe will make appraisal of the grazing land, property, and we are sure they will be fair and make proper compensation.

The meeting was very orderly, but was slow at times. Everything was settled in a friendly atmosphere.

A. King

cc. J. S. Anderson
C. C. District

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Shiprock Agency
P.O. Box 966
Shiprock, New Mexico 87420

IN REPLY REFER TO:
Economic Development
Land Operations

March 4, 1983

Navajo Mine
William Skeet
Environmental Coordinator
P.O. Box 155
Fruitland, New Mexico 87416

Dear Mr. Skeet:

The intent of this corresponence is to clarify the land use status of the area presently under lease by Utah International (Navajo Mine).

The predominant use of the area in question has been in the form of livestock grazing. Although dryland farming has been attempted, these endeavors have been very limited in scope and have met with marginal results.

Furthermore, the physical and chemical characteristics of the soil types in the area, when coupled with the lack of available irrigation water, precludes the existence of prime farmland in the vicinity of the lease.

If I can be of any further assistance, please do not hesitate to contact me.

Respectfully,

Jerry W. Thomas
Natural Resource Manager

RESOLUTION OF THE
RESOURCES COMMITTEE
OF THE NAVAJO TRIBAL COUNCIL

Adopting the Grazing Concept of the
Holistic Resource Management or Other Adequate Practices
On Strip Mine Lands and Other Disturbed Rangelands

WHEREAS:

1. In accordance with Navajo Tribal Code, T2 § 692 and their Plan of Operation, the Resources Committee of Navajo Tribal Council is responsible for the Nation's Natural Resources which includes the development of long range plans for efficient utilization of grazing resources.

2. The Resources Committee recognizes the Surface Mining Control and Reclamation Act of 1977 and subsequent regulations governing the reclamation of minelands and other disturbed lands; and

3. The Resource Committee understands the need for more intensive reclamation and grazing management practices on disturbed Navajo rangelands; and

4. The Resources Committee has previously adopted the use of the Holistic Resource Management (HRM) as a means of improving and maintaining the Navajo Nation's rangeland and livestock economy; and

5. The Resources Committee also recognizes the beneficial influence of proper grazing program on reclaimed rangelands, whether disturbed by mining or were subjected to previous grazing mismanagement; and

6. The Resources Committee would like these disturbed lands be returned to their former productive state or better through proper grazing management programs.

NOW THEREFORE BE IT RESOLVED THAT:

1. The Resources Committee hereby adopts the concept of utilizing HRM and other proper grazing practices as reclamation treatments on disturbed rangelands; and

2. The Resources Committee directs the NCMA staff to develop proper grazing management treatment programs on reclaimed stripmine lands on the Navajo Reservation.

C E R T I F I C A T I O N

I hereby certify that the foregoing resolution was duly considered by the Resources Committee of the Navajo Tribal Council at a duly called meeting in Window Rock, Navajo Nation (Arizona), at which a quorum was present and that same was passed by a vote of 5 in favor and 0 opposed this 12th day of October, 1983.

Byron Huskon, Presiding Chairman
Resources Committee

MOTIONED [illegible]