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0021

VALLEY CAMP OF UTAH, INC.

Scofield Route
Helper, Utah 84526

16 June 1986

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DIVISION OF
OIL, GAS & MINING

Mr. Lowell P. Braxton
Administrator, MRD&RP
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Permit Condition Nos. 5 & 6
Belina Mine Complex Permit No. UT-0013

Dear Mr. Braxton:

On June 6, 1986, several Division personnel met with Steve Long of Cedar Creek Associates, and myself, at the Valley Camp mine site to discuss permit Condition Nos. 5 & 6 of Valley Camp's mine permit.

The main objective of the meeting was to determine how best Valley Camp of Utah could respond to the various concerns expressed by Division personnel in regards to the design and installation of experimental test plots cited in Condition No. 6.

In conjunction with that determination, the Division's comments on topsoil pursuant to Condition No. 5 were also discussed.

Considering the close relationship of the concerns expressed in these two conditions, I would anticipate addressing both conditions in one response.

For your review, and, as a result of the meeting on the 6th, I am submitting a proposal for evaluating the cover and production of the existing interim revegetation within the permit area. The purpose of this proposal, prepared by Cedar Creek Associates, is to secure a waiver of the test plot condition if the Division's concerns can be satisfied with field studies performed upon existing revegetated sites and permit reference areas.

For your consideration and review, please find enclosed seven (7) copies of the said proposal or "Request for Waiver."

If you have questions or comments on this approach, please contact either Mr. Long at (303) 493-4394, or myself.

Sincerely,

T. G. Whiteside
Chief Engineer

Enclosures

Copy to: Sue Linner, DOGM, w/o encl.

J e 16, 1986

"REQUEST FOR WAIVER"

Submitted By

Valley Camp of Utah, Inc.

INTRODUCTION

Valley Camp of Utah, Inc. (Valley Camp) has been issued a permit containing a stipulation which requires the Company to construct revegetation test plots. The purpose of these plots would be to determine whether substitute topsoil material stockpiled at the site is a suitable plant growth medium for final revegetation. Substitute topsoil is necessary for use since the current disturbed area was affected prior to the effective date of current mining regulations. No soil was salvaged in pre-law years.

Following a recent (June 6, 1986) field meeting between Valley Camp and UDOGM personnel, the Utah regulatory authority representatives contacted the OSM. The contact was made to determine whether the test plot stipulation, on the basis of the condition of existing interim revegetation acreage, could be waived. The interim revegetation acreage was overlain with varying amounts (0-6 inches) of substitute topsoil and shows impressive plant cover levels. Mr. Dwight Kimsey of the OSM proposed that a properly conducted evaluation of interim revegetation acreage could result in a waiver of the test plot condition if the said revegetation met certain cover and production goals.

The purpose of this document is to define an approach to evaluating the cover and production of the interim revegetation acreage such that, if cover and production goals are met, the test plot stipulation can be waived. To this end, Valley Camp requests that prior to the initiation of this field evaluation, the cover and production goals proposed by the UDOGM/OSM be submitted to Valley Camp for review. Valley Camp believes this to be necessary to plan for the efficient completion of this effort.

SCOPE-OF-WORK

General

Four sites will be evaluated on the existing permit area during the week of July 14, 1986. One "site" will be located on the Utah No. 2 disturbed area, and consists of the truck dump slope and the outslope of the sediment pond. Three sites will be located on the Belina disturbed

area. These consist of the east-facing slope on which the sage-grass seed mixture was planted and a west-facing re-vegetated slope south of the Belina sediment pond. The east-facing slope located under the conveyor will be the location of the third site to be evaluated.

Each site will be evaluated for cover and production in the manner described below. Cover will be reported as total cover, total vegetative cover, percent cover by species, percent litter and percent base ground exposure. Production will be reported as pounds per acre (oven dry weight) for each sampling site. Sampling intensity at each site will be sufficient to attain an estimate to within 10% of the true mean with 90% confidence for cover, and, if possible, production. It is expected that approximately ten cover transects and between 15 to 20 productivity samples will be required from each site to reach this level of adequacy. All reasonable efforts will be made to achieve this level of adequacy for productivity measurements.

Cover

The procedure for cover measurement consists of extending ten-meter transects (longer transects are used in heterogenous vegetation communities) in random directions from randomly selected poonts. Along each transect, a ten point optical frame (which replaces the old style pin frames) is placed at one meter intervals. Readings through each of the ten scopes (with fine crosshairs) identifies hits (point-intercepts) upon vegetation below the instrument. In this manner, 100 readings per transect can be recorded to give cover by species and total ground cover. Total ground cover is determined by the first hits on vegetation, litter, rock or bare ground and each hit represents one percent cover. Each transect serves as one sample for sample adequacy calculations.

Productivity

Productivity will be measured by clipping all current year's plant growth from randomly located 0.5 meter quadrats. Clipped plant material will be bagged by life form, oven-dried at 100°C for 24 hours, and then weighed to the nearest 0.1 gram. Total production from each plot will be used for sample adequacy determination.

Sampling Adequacy Determination

Sampling adequacy will be determined for this project utilizing the following equation:

$$nm = (ts)^2/(d\bar{x})^2$$

Where:

nm = the minimum number of samples needed,

$\bar{x}$ = estimated mean sample,

s = estimated sample standard deviation,

t = value from t table for a given probability level (1.645 for 90% confidence),

d = percent change in the sample mean desired to be detected (0.1 for 10%).

Photo Coverage

Photos will be taken to document the condition of the revegetated sites at the time of evaluation and sampling. One photo of each site will be taken to show overall vegetative condition. Five production quadrat samples will be randomly selected and photographed to further illustrate the vegetation cover and productivity. Photos will be taken prior to clipping.

REPORT PREPARATION

A report will be prepared and submitted to the regulatory authorities by August 22, 1986. The report will detail the methods used to conduct the field evaluations, present data collected during the study, and list conclusions resultant from the data evaluation. A photo log will also be presented as an appendix to the study. An example report table of contents is as follows.

Table of Contents

A. Introduction
B. Methods and Materials
C. Cover Measurements
   1. Utah No. 2 Disturbance
   2. Belina Disturbance
D. Production Measurements
   1. Utah No. 2 Disturbance
   2. Belina Disturbance
E. Conclusions and Discussion
Appendix: Photo Log