

0026

CO-OP MINING COMPANY

P.O. Box 1245
Huntington, Utah 84528



ACT/05/025 #2
(801) 748-5238
Coal Sales (801) 748-5777

June 3, 1985

State of Utah Dept. of Health
Brent C. Bradford
Executive Secretary
Utah Air Conservation Committee
P.O. Box 4550
Salt Lake City, Utah 84145-0500

RE: Co-Op Mining Co. Letter of 5/24/85
Renewal & Modification Emissions
Control

Dear Mr. Bradford:

Co-op Mining requests to modify Approved Air Pollution Plan of Dec. 20, 1983, Ref. Condition #3.

Attached is an inventory of projected emissions based on an increase in production from 200,000 tons per year to 400,000 tons per year. I have also included supporting data and calculations for your review.

Co-Op appreciates your past cooperation and will look forward to your comments and recommendations.

Due to the above mentioned request, the inventory for 1984 has been completed and is within the plus-minus range of 5%.

Sincerely,

A handwritten signature in black ink, appearing to read "Melvin A. Coonrod". The signature is written in a cursive, flowing style with a large loop at the end.

Melvin A. Coonrod
Permitting & Compliance

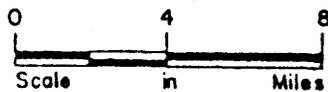
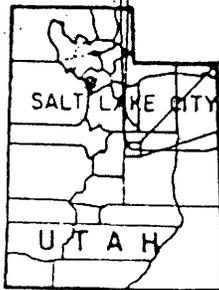
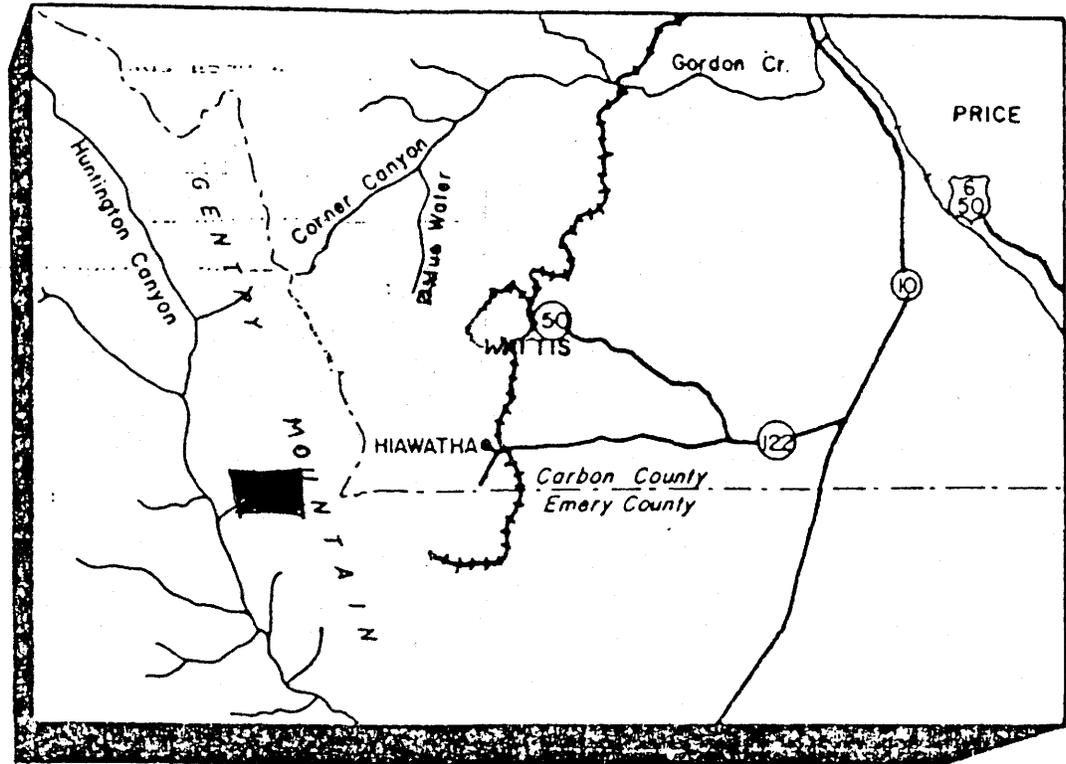
MC/njc

Attachment

CO-OP MINING COMPANY
BEAR CANYON MINE
MODIFICATION TO AIR POLLUTION CONTROL PLAN OF
12/20/1983

Submitted 6/3/1985

Melvin A. Coonrod



(ENLARGED VIEW)

FIGURE 1-1
LOCATION MAP

CO-OP MINING COMPANY
 EMERY COUNTY

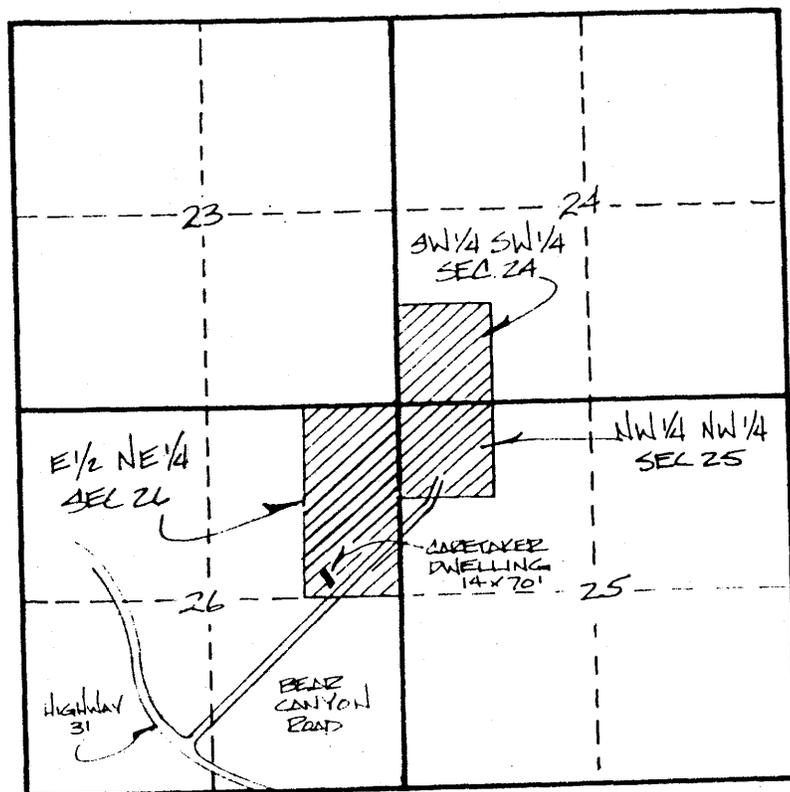
PROPERTY DESCRIPTION

THE SW¹/₄ OF THE SW¹/₄, SECTION 24,
T. 16 S., R. 7 E., S1B & M.

THE NW¹/₄ OF THE NW¹/₄, SECTION 25,
T. 16 S., R. 7 E., S1B & M.

THE EAST 1/2 OF THE NE¹/₄, SECTION 26,
T. 16 S., R. 7 E., S1B & M.

CONTAINING 160 ACRES TOTAL



T. 16 S., R. 7 E., S1B & M

KEY MAP

Fig 1-2

EXISTING ENVIRONMENT

The climate of the Bear Canyon Mine area is typical of subalpine areas in the central region of Utah. In general, the summer season is short with maximum temperature reading ($^{\circ}$ F) in the 80's and minimum readings in the 40's. Fall and spring seasons are erratic in nature with snow precipitation occurring as early as September and as late as the first part of June. Winters in this subalpine area are often severe, with recorded temperatures of -20° F. or below at times. Major snowfalls occur in the months of December, January, and February. Snow frequently remains on the ground from November until April in depths varying up to 6 ft. Winds are generally light to moderate with average speeds below 20 m.p.h. The prevailing wind direction within the general area of the mine site is from the southwest. Winds are generally parallel to the canyons except during storm periods. Wind speed varies from canyon to canyon.

Estimated annual average background total suspended particulate (TSP) in rural, central Utah is approximately 20 ug/m^3 (AeroVironment 1977). Because of the proximity to the existing mine, background TSP could be higher than the average background total for typical rural areas.

Precipitation

Precipitation varies greatly in the vicinity of the Bear Canyon Mining Permit area due to the Manti-Lasal Mountain Range. Local factors

affecting precipitation in the lease area are altitude, topography, and geographic location relative to the west-to-east storm track. The normal annual precipitation at the center of the permit area is approximately 8 inches to 10 inches greater than it is near the office area.

The annual precipitation recorded at Hiawatha Station is 13.18 inches. An isohyetal map from the Hydrologic Atlas of Utah shows an annual precipitation of 22 inches at the center of the permit area. Approximately 16 inches or 73% of this precipitation occurs as snow from October to April. The other 6 inches or 27% occurs from May to September as rainfall. Snow accumulation averages 4.5 feet; a maximum snow depth of 6 feet to be expected.

Temperature

Temperature is seasonally variable and highly influenced by elevation. January temperatures vary from a mean minimum of approximately 13° F. to a mean maximum of approximately 30° F. to a mean maximum of 82° F. (Jeppson et al., 1968). The average annual temperature is 45° F. July is the warmest month (average 69° F.) and January, the coldest (average 23° F). Wide daily temperature ranges are caused by relatively strong daytime warming and rapid nighttime cooling.

Evaporation and Relative Humidity

Potential evaporation is about 40 inches per year. Transpiration is less than 18 inches per year. Relative humidity ranges from a summer average of 45% to a winter average of 85%.

Wind Direction and Velocity

In general, winds are light to moderate with average speeds below 20 mph*. Wind speed varies from canyon to canyon. At the Bear Canyon Portal area, the average wind speed is estimated at 10 mph, directed from west-southwest. Tornadoes are very rare, but strong winds may occur particularly in these mountain passes and canyons. The highest gust in the vicinity of the mine site is expected to be more than 100 mph. The gust would occur under extremely unstable conditions with active fronts.

Air Quality

The permit area has been designated a Class II area for purposes of prevention of significant air quality deterioration. Particulates are the only pollutant that would contribute to air pollution as a result of mining activities. Increases in other pollutants such as sulfur dioxide, nitrogen oxides, carbon monoxide, and photochemical oxidants would be negligible.

*Arlo Richardson, Utah State climatologist at Utah State University

An annual average background level for total suspended particulates (TSP) in rural, central Utah areas of 20 micrograms per cubic meter (ug/m^3) has been estimated (AeroVironment, 1977). This is a significantly below the Federal Secondary Standard of $60 \text{ ug}/\text{m}^3$. Because of proximity to existing mines, background TSP levels at the site would be expected to be higher than average for rural areas. The short term (24 hours) National Ambient Air Quality Standard (NAAQS) can be exceeded in rural Utah as a result of windblown dust. TSP data from three monitoring stations are shown on Table 1-1. The background visual range was estimated to be 37 miles (60 km) based on the background TSP estimate (AeroVironment, 1977).

EFFECTS OF THE MINING OPERATION ON AIR QUALITY

Estimate of Uncontrolled Emissions

The following sources of dust emissions have been identified: (1) top-soil storage, (2) access road, and (3) coal handling facilities. Table 1-2 shows an uncontrolled emission factor for each process operation. A total of 134.84 ton/yr of uncontrolled emissions is estimated from the mining activities at the maximum coal production rate of 400,000 ton/yr.

TABLE 1-1

TSP Readings at Stations Near the Lease Area

Location	Period of Observation	Maximum ¹ 24-hour Average	AGM ² (ug/m ³) ³
Price	6/75 - 12/75	181	72
Huntington Canyon	1975	191	22
Bear Creek Canyon	1974	222	21

¹ National Ambient Air Quality Standards for maximum 24-Hour particulate concentrations are 150 mg/m³ and 260 ug/m³ for the secondary and primary standards, respectively.

² National Ambient Air Quality Standard for the annual geometric mean (AGM) is 60 ug/m³ for the primary standard.

Source: Adapted from Table 11-13 on page 11-37 of the Draft Environmental Statement Development of Coal Resources in Central Utah, prepared by the U.S. Department of the Interior.

Description of Control Measures - Fugitive Dust Control Plan

The following sections describe in detail the fugitive dust control measures that are in effect for the mine plan for each of the listed sources.

Topsoil Storage Pile

The operator currently implements a revegetation program on the existing topsoil stockpile. Revegetation of stockpile areas is initiated after topsoil has been replaced.

Access Roads

Control measures most appropriate in the suppression of access road fugitive dust, at present involves the spraying of the road 2 times during each 8 hour shift whenever precipitation is less than .05 inches per day when dust is a factor.

A road grader is used periodically to remove accumulations of spilled materials from the roadbeds. Vehicular speed is limited to a maximum of 30 mph.

Coal-Handling Facilities

Principal sources of fugitive dust emissions related to the coalhandling facilities have been identified as; (1) conveyor, (2) crusher

building, and (3) coal storage. The proposed control measures for each of these sources are discussed individually below.

Conveyors

Conveyors housing the main belts from the mine portals to the run of mine coal intermediate stockpile are covered. Transfer points in the raw coal/crusher area contain water sprays. The conveyor discharge height is minimized.

Crusher Building

The primary crusher is enclosed and contains water sprays. Crushed coal is transported to the storage area by conveyor.

Coal Storage Pile

The coal storage pile is periodically sprayed with water and/or non-toxic dust suppressants. The orientation of the coal pile is placed in such an area to protect from the prevailing wind direction to minimize the wind erosion.

Estimate of Controlled Emissions

Emissions have been estimated for the maximum projected coal production of 400,000 ton per year. The major portion of this coal will be transported via conveyor and truck.

Based on the control practice outlined in the EPA Region VIII Interim Policy paper on the Air Quality Review of Surface Mining Operation, the estimated total controlled emission is estimated at approximately 18.44 ton per year. Table 1-3 shows the estimated emissions by applying BACT to the uncontrolled emission estimates of Table 1-2.

Estimated Cost of Emission Control

The estimated cost of emission control consists of equipment capital cost and operating cost. Equipment capital cost includes installed cost for water spray equipment, enclosures,, telescoping chutes, and conveyor cover. The operating cost includes direct costs of utilities, maintenance, and operating labor for chemical dust suppressants.

The existing emission controls are covers for conveyor, silo and stacking tube, and treated coal haul road. The conveyor cover was installed at \$15,000 and the stacking tube cover cost about \$4,000. A water-spray truck cost about \$20,000.

The operating cost for soil stabilization depends on the kind of product used as dust suppressant. The manufacturer estimates that treatment cost varies from \$300 to \$1,000 per acre depending on the size of the project, rate of dilution, and distance from the source of supply. For the Co-Op Mining lease area, the application of a product such as Coherex from May to October would cost about \$5,000. Therefore, \$39,000 is estimated for capital cost, and \$5,000 is estimated for annual operating cost for emission control.

CLIMATOLOGICAL AND AIR QUALITY MONITORING

The annual precipitation within the lease area ranges from 13 inches near the mine office to 15 inches at the center of the lease area. Since the precipitation varies significantly within the lease area, the Co-Op Mining Company is planning to install a precipitation gauge and will monitor it routinely. The monitoring result will be reported to USGS and USFS.

Air quality is being monitored at the lease area by UP&L through Utah State University. Particulates are the only pollutant that might impact air quality at the mine area. Increases in concentrations of other pollutants such as sulfur dioxide, nitrogen oxide, carbon monoxide, and photochemical oxidants would be negligible. The main source of TSP would be coal particles which would settle out within short distances (one mile or less) downwind.

The mining operation would not be a "major source" under the prevention of significant deterioration (PSD) regulations because total annual controlled emissions of particulate matter are expected to be less than 250 ton per year. Therefore, the requirement for a PSD permit and for air quality monitoring is not anticipated, based on the July 7, 1980 PSD Regulation 40 CFR, Parts 51, 52, 53, and 124.

Table 1-2

Co-Op Mining Company - Dust Control (Bear Canyon)

Storage Pile (Coal)

Average size of pile 5,000 T. (10,000 T. Capacity - Normally less than 1,000 T.)

Put through 400,000 T. per year

$$D = 9.125$$

$$s = 20$$

d = 175 (Hiawatha weather station - 151 days snow cover
39 additional days .01 inches or more of rainfall)

$$e = .05 \frac{20}{1.5} \frac{175}{235} \frac{15}{15} \frac{9.125}{90} = .0525 \times 400,000 \text{ T.} = 10.50 \text{ T. per year}$$

Control - Coal is sprayed with water as it is being mined in order to meet underground dust control requirements. Additional spray equipment is installed at the storage site to use as needed.

Crushing (Primary only) 400,000 T. X .02 = 8,000# = 4 T. per year

Control - Enclosed and water sprays

Screening 400,000 T X .1 = 40,000# or 20 T. per year

Control - Bag house or water sprays

Conveyors and transfer points 400,000 T X .2 = 80,000# or 40 T. per year

Control - Enclosed and water sprays

Roads (Haul) s = 15
S = 20
W = 190

$$E = 5 \times .47945 = 2.39725 \text{ @ } 38666.66 \text{ miles per year} = 46.34 \text{ T. per year}$$

Control - water spray

Roads (access) s = 15
S = 10
W = 190

$$E = 2.5 \times .479452 = 1.1986 \text{ 6000 miles per year or } 4.00 \text{ T. per year}$$

Table 1-2 cont.

Control - Water spray

Product removal 400,000 T. per year X .05 = 10 T. per year

Control - Water Spray

Table 1-3

Co-Op Mining Company - Dust Control (Bear Canyon)

	<u>Uncontrolled</u>	<u>Factor</u>	<u>Controlled</u>
Haul Roads	46.34 tons/year	85%	6.95 tons/year
Access Roads	4.00 "	85%	.60 "
Coal Storage	10.5 "	50%	5.25 "
Conveyors	40. "	99%	.4 "
Crusher	4. "	99%	.04 "
Screens	20. "	99%	.2 "
Product Removal	10. "	50%	5.0 "
	<hr/>		<hr/>
TOTAL	134.84 tons per year		18.44 tons per year