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UNITED STATES  
DEPARTMENT OF THE INTERIOR

IN REPLY REFER TO  
U-062453

Office of Geological Survey Supervisor  
Conservation Division  
2040 Administration Building  
1745 West 1700 South  
Salt Lake City, Utah 84104-3885

January 6, 1982

Mr. Dick Allred  
Fishlake National Forest  
55 South 100 East  
Richfield, Utah 84701

Dear Mr. Allred:

SUFCO is currently mining coal on Federal lease U-062453 and a set of submains (Five North) is being driven north towards the old Quitchumpah mine entries. Retreat mining will begin in February in the area between Five North and the North Fork of Quitchumpah Creek. Reference maps showing this area and the mining sequence by month were provided you by SUFCO with a copy of a letter sent to Jim Smith, State Division of Oil, Gas, and Mining dated December 18, 1981.

The area to be mined is, for the most part, under cliffs and slopes paralleling the North Fork of Quitchumpah Creek. The company mining plan, under review by the Office of Surface Mining and the State, provide for only first mining in this area to avoid cliff and slope disturbance. Stipulations now being made a part of new leases, lease term readjustments, and mine plan approvals do allow some flexibility for surface disturbance in noncritical areas.

The Geological Survey is concerned about the coal resource that will not be recovered if only first mining is carried on in this area. We propose that; no mining be allowed within 100 feet of the outcrop in the North Fork of Quitchumpah Creek, only first mining be allowed within about 600 feet of the outcrop, and that pillar recovery be allowed in the remaining area. We estimate that as much as 200,000 tons of additional coal could be recovered by allowing some pillar recovery in this section of the mine.

It is inevitable that some surface disturbance will result from second mining. However, the question is, will the additional revenue to the Federal, State, and local Governments and the recovery of a valuable energy resource offset surface values that may be lost by mining this additional coal? It is important to note that a decision must be made as soon as possible as retreat mining must begin in this area in a matter of weeks. We are informed that monitoring stations would be installed as soon as weather permits.

I would be happy to further discuss this proposal with you at your earliest convenience.

Jackson W. Moffitt  
District Mining Supervisor

cc: Denver  
K. Frame, SUFCO ✓



**Southern Utah  
Fuel Company**

P.O. Box P  
Salina, Utah 84654  
(801) 529-7428  
(801) 637-4880 (Mine)

**Subsidiary of  
Coastal States  
Energy Company**

January 18, 1982

Mr. Gordon Whitney  
U. S. Department of the Interior  
Geological Survey  
Area Mining Supervisor  
2040 Administration Building  
1745 West 1700 South  
Salt Lake City, Utah 84104

Dear Gordon:

An updated plan for the 5N area is enclosed. This plan still projects mining to progress from north to south in the area with the use of two double wide mining panels. The barrier and 5N pillars will be extracted as part of this mining plan. A detailed mining sequence map for these panels is also enclosed. Although ventilation is going to be tricky, we believe this method will allow us to mine the coal in two passes to maximize seam height recovery.

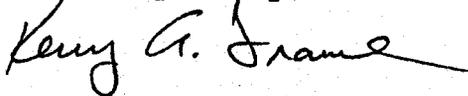
You are working with the Fishlake Forest Service to set up an experimental, full-extraction mining area under the Quitcupah Canyon walls. If we try this in 5N, I would anticipate that the southernmost of the two double wide panels would be the best location. Under those circumstances we could use our regular second mining methods and would have to drive a third set of panel entries along the north side of the 3E barrier. Mining in these panels will not start until late this year and therefore, subsidence monuments could be installed this summer well in advance of underground activity.

At the present time, we are not sure how we would use our pillaring method to mine in excess of 12 feet high. We look forward to discussing this problem with Boyd McKean during his February visit. It could be we should try the experiment (second mining under the canyon) where the coal is thinner, such as along the east side of 3N.

Gordon Whitney  
January 18, 1982  
Page 2

Second mining will not be possible in any event in block A (the northernmost block of 5N) and therefore, we will start the retreat out of 5N from the north end using first mining methods.

Yours very truly,



Kerry A. Frame  
Chief Engineer

KAF:dlj

Enclosure

xc: Darrel Hintze

UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Manti-LaSal National Forest  
599 West Price River Drive  
Price, Utah 84501

2820

March 15, 1982



Mr. Gordon Whitney  
Minerals Management Service  
2040 Administration Bldg.  
1745 West 1700 South  
Salt Lake City, Utah 84101

Dear Mr. Whitney:

As per our telephone conversation concerning mining adjacent to Quitchumpah Creek, Section 32, T21S, R5E, on Coastal States Energy Company Federal Lease 062453, we concur to this proposal if the following stipulations can be met:

1. Lease stipulations 5 and 6 (archeology and paleontology) must be met. We understand that the possibility for archeologic sites in this vicinity does exist. An investigation and clearance for these resources needs to be completed prior to disturbance.
2. A monitoring program needs to be instigated. If this area is to be used as a study area, some method of analyzing the degree of disturbance and impact of that disturbance should be set up. We agree that the area could and should be examined for impacts as a trial situation. The best method for doing this on an area basis is to target and photograph the ground using aerial photography. Since the area is small, the expense and degree of difficulty to achieve data for both baseline information and any resulting subsidence would be minimal.

It appears that one primary concern would be failure of the toe of the slope as a result of mining. Care would need to be taken by adjusting the mining activity to insure that toe failure would not occur.

If this procedure would be satisfactory to MMS and Coastal States, we will make our people available to work out the details.

Sincerely,

*W. A. Bailey*  
for  
REED C. CHRISTENSEN  
Forest Supervisor





**Southern Utah  
Fuel Company**

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**Subsidiary of  
Coastal States  
Energy Company**

March 22, 1982

Mr. Gordon Whitney  
Minerals Management Service  
1745 West 1700 South  
2040 Administration Building  
Salt Lake City, Utah 84104

Dear Gordon:

The enclosed sheets illustrate why I think we would be better off waiting until later to try pillaring under the walls of Quitcupah Canyon. We have been achieving a mined height of 14.2 feet in 5N. The graph shows this first mining should yield 16,358 tons per acre or 833 tons more than our second mining method would be expected to produce. As long as we can maintain more than 13.5 feet heights on 45 foot centers, we're ahead on a first mining basis.

Since the coal thins to prevent 13 foot heights in the 3N area, I think we should use pillaring methods there. Please call me to discuss this further.

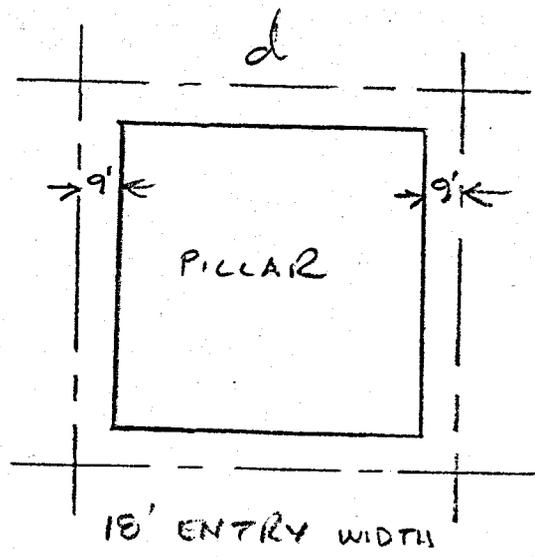
Yours, very truly,

Kerry A. Frame  
Chief Engineer

KAF:d1j

Enclosure

# FIRST MINING RECOVERY



MINED HEIGHT RECOVERY

$$= 1 - \frac{(d-18)^2}{d^2}$$

<u>d</u>	<u>d-18</u>	<u>% RECON.</u>
40'	22'	69.7
45'	27'	64.0
50'	32'	59.0
55'	37'	54.7
60'	42'	51.0
65'	47'	47.7
70'	52'	44.8
75'	57'	42.2
80'	62'	39.9
85'	67'	37.9
90'	72'	36.0
95'	77'	34.3
100'	82'	32.8

22-141 50 SHEETS  
22-142 100 SHEETS  
22-144 200 SHEETS



## SECOND MINING RECOVERY (PILLARING)

By EXPERIENCE AT SUFCO:

MAXIMUM PRACTICAL MINING HEIGHT  
WHILE PILLARING =  $\boxed{11.5'}$

AVERAGE ATTAINABLE RECOVERY OF  
MINED HEIGHT =  $\boxed{75\%}$

= 15,525 TONS / ACRE MAX.

NOTE: THE HISTORIC AVERAGE  
RECOVERY AT SUFCO IN PILLARING  
IS PROBABLY 70-73% OF 11.0'  
OR BETWEEN 13,500 TONS / ACRE  
AND 14,454 TONS / ACRE

# RECOVERY COMPARISON

22-141 50 SHEETS  
22-142 100 SHEETS  
22-144 200 SHEETS



TONS RECOVERED / ACRE

19,000  
18,000  
17,000  
16,000  
15,000  
14,000  
13,000  
12,000  
11,000

10' 11' 12' 13' 14' 15'

FIRST MINING METHOD

MINING HEIGHT

16,358

MINING PERFORMANCE (75% OF 11.5')

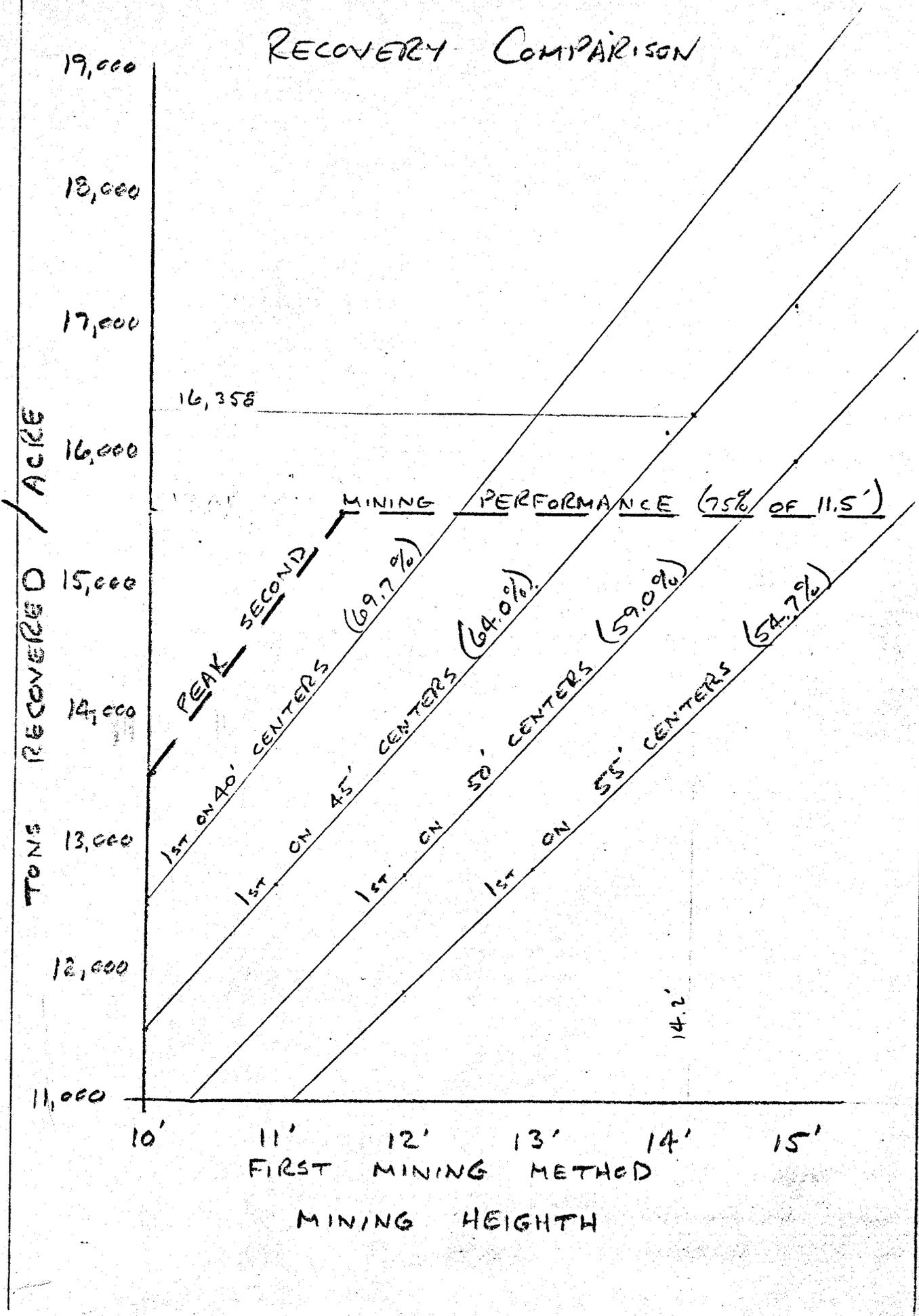
PEAK SECOND  
1st ON 40' CENTERS (69.7%)

1st ON 45' CENTERS (64.0%)

1st ON 50' CENTERS (59.0%)

1st ON 55' CENTERS (54.7%)

14.2'





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Fuel Company**

P.O. Box P  
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**Subsidiary of  
Constal States  
Energy Company**

June 3, 1982

Mr. Gordon Whitney  
Minerals Management Service  
Office of the District Mining Supervisor  
1745 West 1700 South  
2040 Administration Building  
Salt Lake City, Utah 84104

Dear Gordon:

We jointly agreed during the past winter to pursue an experimental mining project using full extraction under the walls of Quitchupah Canyon. Such a program might show that on a large scale, significantly higher recovery of coal reserves can be realized without adversely impacting surface features in the canyon. You proposed that we try a test panel in the 5 North area of our mine in lease U-062453 because our plan projected mining in that area during 1982. We agreed that this would be a likely area. You contacted the Manti-La Sal National Forest to initiate approval for a full extraction experiment in the 5 North area. We call our full extraction method "second mining".

The 5 North area coal seam thickness is in excess of 17 feet. Pending approval of a full extraction mining experiment, we have been using a first mining method there for five months in the first panel. The method uses two passes to mine a full 17½ feet of coal in some areas, leaving pillars behind for support. The average mined thickness in 5 North has been in excess of 14 feet. Total seam recovery with these mining heights and this method has been better than we would hope to average with second mining methods. Such methods could be expected to yield 75% of a maximum 11 foot mining height regardless of seam thickness. With the first-mining-double-pass method presently in use, we are recovering nearly 1,000 more tons per acre than we could recover with second mining methods.

We therefore now feel that the 5 North area is not the ideal place to try a full extraction experiment under the canyon walls. A better place would be in 3 North where the coal is only 14 to 15 feet thick. The first panel with this thickness would be the third one south of the extreme north central end of lease U-28297 in the Fishlake National Forest. It is presently designed as a first mining panel and is scheduled for 1984 activity. It could easily be modified to be a full extraction panel.

Mr. Gordon Whitney  
June 3, 1982  
Page 2

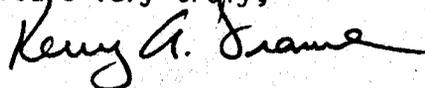
The 3R panel off of 3 North is preferable to 1R or 2R due to the outcrop burn and its affect on a full extraction bleeder system. As you know, MSHA requires a bleeder system to prevent the build up of Methane in second mining areas. The irregular interface between the burn and mineable coal will not allow a properly sized bleeder barrier pillar to be built in advance. For this reason, the areas with less than 14 feet of coal in the northernmost panels of 3 North must be first mined.

We will, if encouraged by the Forest Service's ultimate response to this letter, initiate archeological and paleontology studies over the 3R3N panel discussed above. In addition, we will propose a subsidence monitoring program designed to investigate canyon subsidence impacts. We will probably, contrary to the Forest Service's suggestion, propose a monument and instrument survey program instead of aerial photogrammetric methods to monitor horizontal and vertical movement. We are not in favor of aerial photography for the following reasons:

1. Two photographs would have to be taken on regular intervals. The cost (based on other SUFCo photogrammetric work) for the photography alone would be approximately \$2,500 per measurement. Laboratory work and mapping would add significantly to this cost. It would be cost prohibitive to conduct weekly surveys to monitor the cave process with this method. Field surveying can be done much more frequently and at significantly less cost.
2. Vertical and horizontal accuracies with photogrammetric methods are not as good as we would prefer. At map scales of approximately 1"=400', accuracies are plus or minus one half foot vertical and plus or minus 1.25' horizontal. However, the installation of monuments and use of regular field surveying techniques will permit horizontal and vertical measurements well within one half foot accuracies.

We would like to try a full extraction panel in 3 North where the seam thickness is less than 15 feet. We will be pleased to work with you and the Forest Service to line out the project on an experimental basis. The Utah Division of Oil, Gas and Mining will need to approve the project. With positive feedback from those two agencies, we could possibly start the necessary surface studies in July.

Yours very truly,



Kerry A. Frame  
Chief Engineer

Enclosures



UNITED STATES  
DEPARTMENT OF THE INTERIOR

MINERALS MANAGEMENT SERVICE

Office of the District Mining Supervisor  
2040 Administration Building  
1745 West 1700 South  
Salt Lake City, Utah 84104

June 11, 1982

Mr. Dick Allred, District Ranger  
Fishlake National Forest  
55 South 100 East  
Richfield, Utah 84701

Dear Mr. Allred:

Enclosed is a copy of a mining proposal submitted by Southern Utah Fuel Company involving Fishlake National Forest (sec. 5, T. 22 S., R. 5 E.). The letter is self explanatory and relates to our previous discussions and correspondence dated January 6, 1982, (copy enclosed) concerning the "5 North" area of the Convulsion Canyon mine.

It is our judgment that some surface disturbance will result from second mining in the "3 North" area but any surface values lost might be justified by the additional coal recovered and the resultant revenue gained by Federal, State, and local Governments.

Please review this mining proposal and provide me with your recommendations. If you have any questions, contact myself or Gordon Whitney of this office.

Sincerely yours,

Jackson W. Moffitt  
District Mining Supervisor

Enclosures

cc: Denver w/o enclosures  
Kerry Frame, SUFCo. w/o enclosures ✓