

A. General

1. No anomalies, missing data or monitoring changes were know to occurred during 1994.
2. Corrective actions were taken to install perimeter markers at the portal sites in Quitchupah Canyon as in accordance with NOV 94-46-2-1.

B.

Water Monitoring Data:

1. Mine Discharge data is included in the data base.
2. Spring flow data is included in the data base.
3. Surface Water flow data is included in the data base.

STATE OF UTAH
DEPARTMENT OF HEALTH
BUREAU OF WATER POLLUTION CONTROL
P.O. BOX - 16690
SALT LAKE CITY, UTAH 84116-0690

AUTHORIZATION TO DISCHARGE UNDER THE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with provisions of the "Utah Water Pollution Control Act", Title 26, Chapter 11, Utah Code Annotated 1953, as amended, the "Act"

SOUTHERN UTAH FUEL COMPANY

is authorized to discharge from it's Convulsion Canyon mine located

approximately six and one half (6.5) miles north of Salina Canyon (Interstate Highway 70), up Convulsion Canyon, Sevier County, Utah, with the outfalls located at latitude 38° 54' 54" and longitude 111° 24' 57", latitude 38° 54' 52" and longitude 111° 24' 58", and 38° 57' 26" and longitude 111° 23' 06".

to

Quitcupah Creek and East Spring Canyon a tributary of Quitcupah Creek

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein.

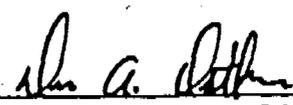
This permit shall become effective on

May 1, 1991.

This permit and the authorization to discharge shall expire at midnight,

April 30, 1996.

Signed this 25th day of April 1991


Authorized Permitting Official
Executive Secretary
Water Pollution Control Committee

C. Summarized Water Monitoring Data:

Summaries of the water monitoring data are contained on the diskette located in Section B. of this report.

- D. **Precipitation or Other Climatological Data:**
Climatological data is submitted as Lotus files on the included diskette.

E. Subsidence Monitoring Report:

1. A brief description of the monitoring of subsidence above the SUFCO Mine is given in the subsidence report.
2. The displacement over the mining areas is shown on Maps 1 and 2.
3. The control grid for the photogrammetric survey is shown on Map 1. Map 1 also shows the cumulative displacement observed. Map 2 shows the subsidence in reference to the underground workings.

1994 SUBSIDENCE REPORT

SOUTHERN UTAH FUEL COMPANY

MINE NO. 1

by

DALL DIMICK

CHIEF SURVEYOR

INTRODUCTION

Southern Utah Fuel Company's 1994 subsidence report is an update of annual subsidence data which has been accumulated since 1976. Prior to 1985, the data was derived from conventional survey methods. Since then, photogrammetric surveys have been employed to monitor the ground movement.

During 1985, the entire Southern Utah Fuel Company (SUFCO) property was flown to establish a set of baseline photography and a grid of surface elevations. Where possible, an elevation was photogrammetrically determined on an approximate 200 foot grid. These original x, y and z locations serve as a comparative base for determining ground movement in the succeeding years.

Once each year another set of aerial photography is obtained. A new elevation is then found at the same x and y coordinates as all the originals. The new, or current, elevations are compared to the originals and the difference between the two is used to generate a contour map. The result is the subsidence contour map included with each annual subsidence report.

Two maps accompany this report. Map 1 is the main subsidence map showing surface control monuments, overburden contours, subsidence contours and surface tension cracks. Map 2 is a current mine map with the subsidence map superimposed.

SUBSIDENCE HISTORY

SUFCO began operations which cause surface subsidence in June, 1976. Continuous miners were used to extract coal from pillars which were developed as part of a retreating panel. The panels were approximately 650 feet wide and varied in length up to 2,500 feet. The average mining height approached 11 feet and the extraction ratio averaged about 80%.

The resulting subsidence from these continuous miner panels averaged 4 feet in the plateau areas where overburden was 900 feet thick. In areas where panel boundaries were outside the escarpment and beyond the Castlegate Sandstone, subsidence increased with decreasing overburden thickness. The maximum subsidence measured to date, 8.5 feet, occurred in one of these areas. The overburden was only 600 feet thick.

Retreat mining continued in this manner until October, 1985, when a retreating longwall system was added. Longwall panels have ranged from 550 feet to 710 feet wide and up to 6,500 feet in length. Mining heights have varied from 9.5 feet to 12 feet.

Subsidence above the longwall panels has averaged 4 feet; but the overburden thickness has been as much as 1,800 feet. The Maximum measured subsidence caused by longwall mining is seven feet. This occurred in an area outside the escarpment very similar to the one mentioned above for the continuous miner panel.

1994 SUBSIDENCE

The 1994 subsidence map (Map 1) was updated using data from current photogrammetric monitoring. Each subsidence area is labeled as an independent block. A brief description of each follows:

AREA 1

This was SUFCO's first subsidence area. Undermining began in June, 1976, and continued into 1979. The area is composed of five continuous miner panels which averaged 650 feet in width. Mining height averaged 11 feet with about an 80% extraction ratio.

Maximum subsidence ranged from 4.5 feet to 8.5 feet. It was first detected in 1976 and continued until 1985. No surface movement was detected in this entire area from 1986 to 1989. Area 1 was not monitored for the 1990 subsidence report and will remain dormant unless a need arises. Photographic coverage, however, has been maintained so that the area can be monitored if necessary.

AREA 2

This is another continuous miner area. The panels here were irregular shaped and the extraction ratio was modest. Undermining ceased in 1984.

Maximum subsidence has been measured at 2 feet. The area has been stable since 1985 and has not been monitored since 1989. The same condition as mentioned in Area 1 applies here.

AREA 3

This area is another continuous miner section, but the extracted area is a portion of mains with protective barriers instead of a panel. Coal recovery was moderate with mined areas which were subcritical. Undermining ceased in 1983.

Maximum subsidence was measured at 2 feet. Because of the limited extraction and subcritical areas, the subsidence occurred slowly with small changes noticeable until 1987. The area appeared stable in 1988 and 1989. It has not been monitored since 1989.

AREA 4

This subsidence area is comprised of three continuous miner panels. The mining height averaged 11 feet with a good extraction ratio. Undermining ceased in 1985.

Maximum subsidence was 5 feet with no detectable change in 1989. This area was monitored again in 1993 and 1994 with no detectable changes.

AREA 5

The four continuous miner panels which make up this area were mined from September, 1978, to November, 1981. Mining height averaged 11 feet with an 80% extraction ratio.

Maximum subsidence was 5 feet with no detectable changes from 1985 through 1989. This area has not been monitored since 1991, and will also remain dormant. As with Areas 1 through 4, photographic coverage has been maintained so that monitoring can be done if necessary.

AREA 6

Area 6 is SUFCO's first longwall induced subsidence area. It is comprised of nine longwall panels varying from 540 feet to 700 feet in width and 1,700 feet to 3,900 feet in length. Also, there is a section of recovered mains between two of the longwall blocks. Undermining began in Area 6 during October, 1985, and continued through the mains recovery in March, 1990.

Maximum subsidence measured in areas bounded by the plateau is five feet. There is a location on the map which shows seven feet; but this area is outside the escarpment where the overburden is only 600 feet thick. The subsided escarpment is intentional and is part of a study agreed upon by SUFCO, the Division of Oil, Gas and Mining, the Bureau of Land Management and the U. S. Forest Service. This particular section of escarpment was removed from the "no subsidence zone" to study the effects of longwall mining on the escarpment.

Area 6 will be monitored for several more years. No changes were detected in 1993 or 1994.

AREA 7

Area 7 was originally planned for no subsidence. Pillars were made to support the overburden but began to fail in the north end in 1984 when the underground workings were flooded. The failures progressed towards the south and by 1986, subsidence was detected over the area.

The map shows up to seven feet of subsidence. There has been no additional subsidence movement detected since 1988.

AREA 8

Undermining this area began in June, 1983, and was sporadic until 1992. Continuous miners were used with extraction ratios over 90% and average mining heights of 10 feet. This is still an active area and will be for several more years. Maximum subsidence to date is five feet. No noticeable vertical movement was detected in 1994.

AREA 9

This area is a longwall mining area which is composed of four panels. The first began in June, 1989 and the block was finished in January 1992. The mining height averaged about 11 feet and the maximum subsidence shown to date is five feet.

AREA 10

Area ten is a new longwall mining block which began in January 1992. The entire surface area above this block was digitized for base-line elevations during 1991. Maximum subsidence shown to date is four feet. This area will be active for several more years.

The experimental mining practice area discussed under "Area 8" was extended, with regulatory approval, to the east side of the canyon under the Southwest corner of "Area 10". An extensive premining survey of this location was conducted late in 1992. A detailed survey of the post-mining subsidence effects was provided in the 1993 report.

DRAW ANGLE SURVEYS

Several draw angle surveys have been performed during the past years. Completed surveys have been over continuous miner areas and have been oriented both parallel and perpendicular to the long axis of the panel. The average of all measurements is 15°. Individual measurements ranged from 10° to 21°.

SUBSIDENCE TENSION CRACKS

Tension cracks have occurred above most of the subsidence areas. Most have been located by survey and are plotted on Map 1. Their lengths vary from a few feet to nearly two hundred feet. Most are oriented either parallel to the natural jointing pattern or to the boundaries of the underground excavation. Vertical displacement along the cracks is uncommon and horizontal displacement varies from hairline to several inches in width.

The U. S. Forest Service completed a tension crack study in 1978. They monitored twenty-two different cracks (located in Area 1) with widths varying from 1/8 inch to six inches. Results show that most cracks self-heal, or close, from 13% to 100% of their original width.

DD:kb

F. **Vegetation Data or Revegetation Success Monitoring:**

1. The second lift of the Waste Rock Disposal Site was monitored for vegetation success during 1994. A report of Dr. Welsh's findings is included.
2. The hillside area immediately above the ROM stockpile was reseeded in accordance with an approved plan. Plans are to over-plant shrubs on the hillside during the spring of 1995. Four drill sites were reclaimed and reseeded during 1994 in accordance with the approved plan.

ENDANGERED PLANT STUDIES, INC.

129 North 1000 East

Orem, Utah 84057

(801 225-7085)

11 October 1994

Mr. Keith Zobel
Southern Utah Fuel Company
397 South 800 West
Salina, Utah 84654

Dear Keith:

With the help of Ronald J. Kass, the waste rock disposal vegetation analysis has been completed and the report is enclosed with this letter. The project was completed following guidelines used previously in the 1992 survey of the site. The report includes the results of the 1992 surveys as well as that of the 1994 season.

Progress towards a more nearly natural vegetation is evident from the current year's work, but it is still far from being like the reference area.

The report includes the suggestion that the basin-lifting technique used on the current lift might best be altered by over-drilling it with additional grasses and shrubs to provide additional competition to the Russian thistle. That plant seems to have thrived in the basins, where additional water was available for rapid and large growth. A subtle flattening of the basins might encourage plants other than the Russian thistle.

If we can be of further help, please contact me. Sorry for the long turnaround on this report. Perhaps in subsequent years we can get an earlier start.

Again, please accept my thanks for our long and continuing working relationship.

Sincerely yours,



Stanley L. Welsh
President

enc: invoice

Vegetation Monitoring
of the
Waste Rock Disposal

Prepared for:

Southern Utah Fuels Company
P.O. Box 719
Helper, Utah 84526

Attention: Mr. Keith Zobell

Prepared by:

Stanley L. Welsh and Ronald J. Kass
Endangered Plant Studies, Inc.
129 North, 1000 East
Orem, Utah 84057

October 3, 1994

INTRODUCTION

This report describes the September 27, 1994 monitoring of Southern Utah Fuels Company (SUFCO) waste rock disposal site. Sampling was conducted by Drs. Stanley L. Welsh and Ronald J. Kass of Endangered Plant Studies (EPS). Vegetation sampling was conducted to obtain monitoring data for the 1994 monitoring program described in the SUFCO waste rock mining and reclamation plan (MRP) Table 4.6.3-1. The waste rock reference site, used as a vegetation standard for final reclamation of the waste rock site, was established and sampled in 1992.

For purposes of comparison the results of the 1992 survey of the Waste Rock Disposal Site and Reference Area are included. The waste rock reference site will serve as a vegetation standard during final reclamation of the waste rock site. Its location was determined by Division of Oil, Gas and Mining (DOG M) reclamation specialist, Paul Baker and EPS during the 1992 investigation.

Methods

Sampling was conducted according to Division of Oil Gas and Mining (DOG M) vegetation guidelines (February 1992). Percent cover was estimated by the ocular method for the waste rock site. Sampling procedures were discussed with Paul Baker (Reclamation specialist DOG M) in 1992. Shrub density was determined during the 1992 survey, and was not sampled again in 1994. Inclusion of the 1992 results is for comparison.

Percent cover estimates

A 75 m tape was stretched across the longest axis of the waste rock site. Random numbers were generated and the corresponding numbers were used to locate the 1m² quadrats along the 75 m transect. After sampling 17 quadrats, sample adequacy was computed; minimal sample size for the waste rock site was N=9. A t-value=1.645 and d-value=0.1 were used as coefficients to calculate sample adequacy.

Shrub density

To estimate shrub density of the Waste Rock reference site during 1992, a 75 m tape was stretched across the longest axis of the site. Random numbers were generated and the corresponding numbers were used to locate the point-quarter sample point along the 75 m transect. The sample point was divided into four sections and mean shrub distance was calculated for all shrubs species. Sample adequacy was calculated and N=27 sample points were required. A t-value=1.645, and d-value=0.1 were used as coefficients to calculate sample adequacy.

Results

Waste Rock Monitoring 1994

Total mean plant cover (Table 1) was $x = 59.4\%$ ($S = 10.6$). Approximately 30.3 % of the total were grasses, accounting for 42.7 % of species composition. Forbs accounted for 27.0 %, with 18.9 % of forb cover represented by Russian thistle (Table 1). We suspect that pitting, the procedure to improve moisture regimes by creating disk-shaped pits in the soil surface, is responsible for the high percentages of Russian thistle. We also suggest that sampling be accomplished in late June or early July when grasses and forbs are flowering, and when vegetative biomass is at or near maximum production. We suspect vegetative cover will be 10% higher, and species richness higher if sampled during the above mentioned times.

We observed some shrub establishment on the waste rock site, mainly sapling-sized big rabbitbrush, and a few big sagebrush and Utah serviceberry seedlings. As DOGM suggests (R645-301-341.210), shrubs may be difficult to establish because of large wintering deer herds favoring newly established shrubs. We did observe signs of deer browsing on the newly established shrubs.

Waste Rock Monitoring 1992

This area was reseeded much prior to this investigation with the recommended seed mixture in Table 4.6 1-1 of the MRP. Total mean plant cover (Table 2) was $\bar{x} = 56.3\%$ ($S = 11.7$) and approximately 80 % of the species percent composition was reseeded grasses (Table 1). We do suggest that sampling be accomplished in late June or early July when grasses and forbs are flowering, and when vegetative biomass is at or near maximum production. We suspect vegetative cover will be 10-20% higher and species richness will be higher if sampled during the above mentioned times.

Comparison of 1992 and 1994 results

Total mean plant cover was not especially different in 1994 from that of the 1992 season. The composition was rather dramatically different, however. Grasses comprised almost 80 % of the percent composition in 1992, and only about 43 % in 1994. A large change in Russian thistle cover and composition is indicated between the two years, i.e., 3.4 % cover and 6.1 % composition in 1992 and 18.9 % cover and 31.8 % composition in 1994.

Our 1992 samples did not detect any shrub cover nor did we observe any shrubs growing on the Waste Rock site. The 1994 survey detected both Utah serviceberry and Rubber rabbitbrush in the plots, and seedlings of big sagebrush were noted outside the plots.

Waste Rock Reference 1992

Total mean plant cover (Table 3) for the Waste Rock reference site was $\bar{x} = 67.2\%$ ($S = 9.1$) (Table 2). Shrubs composed 54.7 % and grasses 45.0 % of the percent species composition. Mean distance per shrub was 0.51, yielding a value of 7,935 shrubs/acre. We estimated by ocular reconnaissance that approximately 70 % of the total shrubs/acre (5,555) are little rabbitbrush and approximately 30 % (2380) are sagebrush. We also recommend that this area be sampled in late June or early July to approach a more accurate estimate of mean cover and species composition.

Discussion

The reclaimed lift surveyed in the 1994 survey had been subjected to a different reclamation technique than utilized prior to the 1992 survey. A basin-lifting technique was utilized to prepare an indented surface. The surface thus presented allowed for concentration of water into rather small areas, possibly contributing to the establishment of robust plants of Russian thistle. The concentrated water might have also resulted in growth of shrubs, which are still not apparent on the previously revegetated lift. Grasses apparently did not respond equally well to the indented surface technique, although there was greater diversity of grass species than previously. Perhaps the best approach is to use the indented basin technique and to have the seeds drilled over the indented surface, thus flattening it somewhat. The Russian thistle might then have a more difficult time competing with grasses and shrubs for limited moisture.

The Waste Rock Disposal Area revegetation is progressing, but is still a distance away from approaching the cover and composition of the reference area.

Table 1. Percent cover and species composition of waste rock monitoring site. 26 September 1994.

	% cover	% composition
Bare ground	28.6	
Litter	12.2	
<u>Grasses</u>		
Bromus marginatus	6.1	10.2
Elymus cinereus	4.3	7.2
Elymus spicatus	1.7	2.8
Elymus lanceolatus	10.9	18.3
Dactylis glomerata	4.8	8.0
Elymus smithii	1.7	2.8
Agropyron cristatum	0.5	0.8
Stipa hymenoides	0.3	0.5
Grass totals	30.3	42.7
<u>Forbs</u>		
Achillea millefolium	0.2	0.3
Heliomeris multiflora	0.5	0.8
Melilotus officinalis	0.4	0.7
Penstemon palmerii	2.6	4.4
Sasola tragus	18.9	31.8
Linum perenne	4.4	7.4
Forb totals	27.0	45.4
<u>Shrubs</u>		
Amelanchier utahensis	1.0	1.7
Chrysothamnus nauseosus	1.1	1.8
Shrub totals	2.0	3.5
Totals	59.4	100.0

Table 2. Percent cover and species composition of Waste Rock monitoring site. 27 August 1992.

	% cover	% composition
Bare ground	35.4	
Litter	8.3	
<u>Grasses</u>		
Bromus marginatus	5.4	9.6
Elymus cinereus	4.4	7.8
Elymus spicatus	25.5	45.3
Elymus lanceolatus	9.7	17.2
Poa pratensis	0.06	0.1
<u>Forbs</u>		
Achillea millefolium	0.06	0.1
Atriplex rosea	0.2	0.3
Eriogonum racemosum	0.06	0.1
Heliomeris multiflora	0.2	0.3
Kochia scoparia	0.2	0.3
Melilotus officinalis	6.9	12.3
Penstemon strictus	0.2	0.3
Polygonum aviculare	0.06	0.1
Sasola tragus	3.4	6.1
Totals	56.3	100.0

Table 3. Percent cover and species composition of Waste Rock reference site. 27 August 1992.

	% cover	% composition
Bare ground	8.8	
Litter	24.0	
<u>Grasses</u>		
Agropyron cristatum	12.5	18.7
Elymus smithii	16.0	23.9
Elymus spicatus	1.1	1.6
Poa pratensis	0.5	0.8
<u>Forbs</u>		
Eriogonum racemosum	0.2	0.3
<u>Shrubs</u>		
Artemisia tridentata	21.8	32.4
Chrysothamnus vicidiflorus	15.0	22.3
Totals	67.2	100.0

G.

Annual Impoundment Certification:

The annual impoundment certifications for the mine site and waste rock disposal site sedimentation ponds are included. No sign of instability, structural weakness or other hazardous condition were observed.



Coastal
The Energy People

December 20, 1994

Mr. Lowell Braxton
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Mr. Braxton:

Enclosed are annual certification reports for Southern Utah Fuel Company's Minesite Sedimentation Pond, Waste Rock Disposal Site, and the associated Waste Rock Sedimentation Pond.

These certifications are being submitted prior to SUFCO's Annual Report as required by R645-514.

Sincerely,
SOUTHERN UTAH FUEL COMPANY

Wesley K. Sorensen, P.E.
Technical Services Manager

WKS:kb

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Southern Utah Fuel Company

A SUBSIDIARY OF THE COASTAL CORPORATION

397 SOUTH 800 WEST • SALINA UT 84654 • 801/637-4880 • FAX 801/534-3296

ANNUAL WASTE ROCK DISPOSAL SITE
CERTIFICATION -- 1994

An inspection of Southern Utah Fuel Company's Waste Rock Disposal Site was made by Wesley K. Sorensen, P.E. on December 19, 1994.

The active area pad of the third cell has approximate dimensions of 240 ft x 75 ft. Underground development waste is end dumped from 10 wheel dump trucks in piles about 3.5 ft high. These piles are leveled with a D-7 or D-8 Cat dozer. The resulting lift thickness is 18-24 inches. The dozer and loaded trucks are routed over the pad to compact the lift.

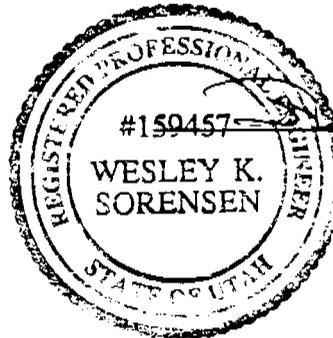
Final and intermediate construction slopes were at or less than the designed 1v:2h. Slopes are constructed such that water cannot pond against the toe.

No fires have occurred at the site since it was constructed and none were observed during the inspection.

No significant erosion was observed.

A copy of the field notes are attached.

I certify that the above description accurately represents the conditions observed at the Waste Rock Disposal Site during my inspection on December 19, 1994.



Wesley K. Sorensen
Wesley K. Sorensen, P.E.
Registration No. 159457
State of Utah

WKS:kb

Attachment

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SOUTHERN UTAH FUEL COMPANY

Coal Refuse Piles ^{Annual} Quarterly Inspection Report

Inspector Wesley K Sorensen Title PE

Date December 19, 1994 Permit # _____

1. Foundation Preparation (vegetation, topsoil removal?)

Yes No

2. Lift Thickness (inches) 1 1/2 - 2 ft

3. Compaction Yes No

4. Burning (specify extent and location) Yes No

None during year

5. Angle of Slope (degrees) AR 27-30° S-15°-18° W 12-23°

6. Seepage (specify location, color, & appr. volume) Yes No

7. Cracks or Scarps (location and size) Yes No

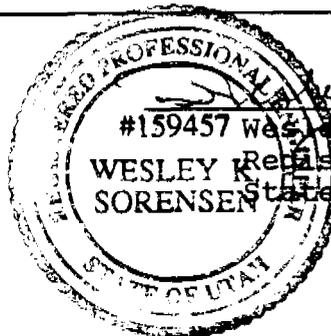
8. Major Erosion Problems (location and extent) Yes No

9. Water Impounding Against Toe Yes No

10. Any appearance of instability, structural weakness or other hazardous conditions Yes No

* where established

Temp 35° snow - 0 - 1 ft



ANNUAL WASTE ROCK SEDIMENTATION POND
CERTIFICATION -- 1994

An inspection of Southern Utah Fuel Company's Waste Rock Sediment Pond and associated Decant Impoundment was made on December 19, 1994 by Wesley K. Sorensen, P.E.

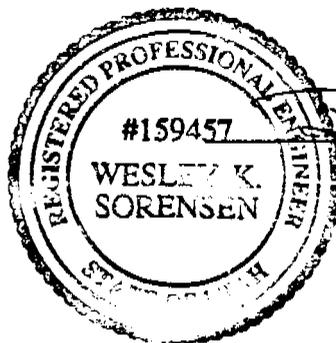
No signs of structural weakness of the sediment pond dam or decant impoundment dam were observed.

The diversion ditches, spillways and decant device are in as-constructed condition and are functional.

The water level in the pond 25 ft north of the decant structure was at 7883.8 ft. The sediment level 25 ft north of the decant structure was at 7883.5 ft. The 60% sediment level for the pond is at 7885.15 ft. At the time of the inspection there was snow and ice in the pond. About 0.73 acre-ft of storage volume was available in the pond. No sediment or water was observed in the decant impoundment.

A copy of the field notes of the inspection are attached.

I certify that the above description accurately represents the condition of the Waste Rock Sedimentation Pond and Decant Impoundment observed during the inspection.



Wesley K. Sorensen
Wesley K. Sorensen, P.E.
Registration No. 159457
State of Utah

WKS:kb

Attachment

2/27/92 MLD

SOUTHERN UTAH FUEL COMPANY

Rock Waste Sediment Pond ^{Annual}~~Quarterly~~ Inspection Report

Inspector Wesley K Sorenson Date 12/19/94

1. Dam Structural Weakness

A. Cracks or scarps on crest Yes No

B. Cracks or scarps on slope Yes No

C. Sloughing or bulging on slope Yes No

2. Major Erosion Problems Yes No

3. Surface Movements of Surrounding Slopes Yes No

4. Visible Sumps or Sinkholes in Slurry Surface Yes No

5. Clogging

A. Spillway channels and pipes Yes No

Free & clear

ANNUAL MINESITE SEDIMENTATION POND
CERTIFICATION -- 1994

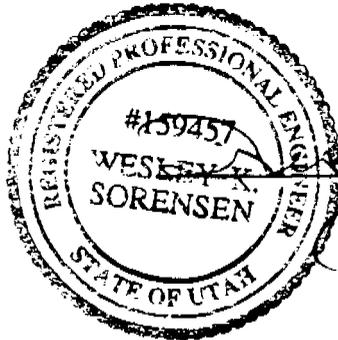
An inspection of Southern Utah Fuel Company's Minesite Sediment Pond was conducted by Wesley K. Sorensen, P.E. on December 19, 1994.

No signs of structural weakness of the dam or surrounding slopes were observed.

The fill slope above the pond has minor erosion gullies in several locations. No signs of instability of the fill slope were noted.

The water level in the pond during the inspection was 7414.2 ft, which is 4 ft below the standpipe spillway elevation. An additional 0.73 acre-ft of storage volume was available in the pond above the current water level. The sediment level in the pond was at 7405 ft, which was below the 60% sediment level (7408.9 ft). A copy of the field notes are attached.

I certify that the above description accurately represents the condition of the Minesite Sediment Pond as observed during my inspection on December 19, 1994.



Wesley K. Sorensen
Wesley K. Sorensen, P.E.
Registration No. 159457
State of Utah

WKS:kb

Attachment

2/27/92 MLD

SOUTHERN UTAH FUEL COMPANY

Minesite Sediment Pond ^{Annual} ~~Quarterly~~ Inspection Report

Inspector Wesley K Sorinson Date 12/19/94

1. Dam Structural Weakness

A. Cracks or scarps on crest Yes No

B. Cracks or scarps on slope Yes No

C. Sloughing or bulging on slope Yes No

2. Major Erosion Problems Yes No

Minor erosion of fill slope above dam
No significant change from last year

3. Surface Movements of Surrounding Slopes Yes No

4. Visible Sumps or Sinkholes in Slurry Surface Yes No

Ice covered

5. Clogging

A. Spillway channels and pipes Yes No

Functional & in as-design condition

H. Annual Overburden, Spoil, Refuse, Roof, Floor, and Mid-Seam Data:

1. Southern Utah Fuel Company's waste rock disposal site is located 6.4 miles from the minesite in the NW 1/4 of NE 1/4 of Section 18, Township 22 South, Range 4 East, SLB&M. Because no washing of coal is done at the mine refuse material is only produced when rehabilitating old work areas and when doing construction work that requires additional mining height. The refuse produced consists predominantly of coal with a small amount of rock from the first foot of floor rock and the first four feet of roof rock. systematic sampling of roof and floor rock is not done because of the small amount and infrequency in which these materials are encountered.
2. Representative grab samples are taken of all refuse material as it is removed from the mine. The samples are composite on a quarterly basis making for a 50-100 pound sample that is analyzed. Sample preparation includes crushing to 4 mesh and riffing to a representative 5-10 pound size for analysis.
3. Laboratory analysis sheets are included.
4. A summary table of analytical results from the quarterly samples is included.

WASTE ROCK DISPOSAL SITE ANALYSES OF MATERIAL

<u>Qtr</u>	<u>Year</u>	<u>pH of Paste Extract (SU)</u>	<u>Alkaline of Paste Extract (meq/L)</u>	<u>Electrical Conduct. (mmhos/cm)</u>	<u>Water Satur. (wt.%)</u>	<u>Calcium (meq/L)</u>	<u>Magnesium (meq/L)</u>	<u>Sodium (meq/L)</u>	<u>Sodium Absorp. Ratio</u>	<u>Total Sulfur (wt.%)</u>	<u>Total Sulfur A.B. (T/1000T)</u>	<u>Neutral. Potent. (T/1000T)</u>	<u>Total Sulfur A.B.P. (T/1000T)</u>	<u>-Water Soluble- Boron (ppm)</u>	<u>Selenium (ppm)</u>
1	1994	7.0	4.49	5.79	60.50	27.5	11.9	21.20	4.78	0.48	15.0	47.1	32.1	6.45	0.02
2	1994	6.5	4.15	5.18	42.70	28.4	20.4	17.03	3.51	0.41	12.8	122.0	109.0	5.28	0.02
3	1994	7.2	1.68	5.69	41.30	28.1	26.6	11.40	2.17	1.23	38.4	89.3	50.9	5.44	0.04
4	1994	7.3	2.15	91.50	41.20	71.5	27.8	930.00	132.00	0.78	24.4	186.0	162.0	3.72	0.02

- Notes: 1. Absence of a value indicates that the parameter was not analyzed.
2. The detection limit for selenium is 0.02 ppm. Analysis values equal to or less than 0.02 are entered as 0.02.
3. Analytical methods used are those approved by the State of Utah.

I. The list of officers and control information submitted and approved during 1994 is still current.

Coal Annual Reports Review- 1994
Due June 30, 1995

Mine Name Convulsion Canyon #1 Mine (SUFCO)

Date Submitted 4/13/95

Compliance/Permitting _____

Instructions: Please review and verify operational commitments and note. Review annual report, initial and date when reviewed. If deficient, a hindrance violation should be prepared and noted in the inspection report. Please forward to appropriate permitting staff, if necessary, when completed. Inspectors should have all annual reports reviewed by June 30, 1995. Please return the completed form to PGL when completed. These reports will be returned to the Division in Salt Lake for filing in the library. Daron/Joe will assign permitting staff to review. Permitting staff should have all annual reports completed by September 30, 1995. Thank you.

Sections to be reviewed:

Cover Sheet and Mine Sequence Map-Reviewed (Initial/Date) PH/5-1-95

*Data Submitted
4/19/95
PH-5-3-95*

Summarized Water Monitoring Data - Reviewed _____ (Ken)

*Data Submitted
4/19/95
PH/5-3-95*

Precipitation and Climatological Data -Reviewed _____ (Ken)

Subsidence Monitoring Report - Reviewed PH/4/27,28-5/1/95

*Data Submitted
5-3-95/PH*

Vegetation Data/Revegetation Success Monitoring Reviewed _____ (Paul/Susan)

Annual Impoundment Certification - Reviewed PH/5-1-95

*Data Submitted
5-3-95/PH*

Annual Overburden, Spoil, Refuse, Roof, Floor, etc Reviewed _____

*Data Submitted
in 1994
5/3/95 -PH
annrev*

AVS Legal/Financial Update (Fourth Quarter complete)
Reviewed _____ (Pam)

5-3-95 8³² Am.

Post-It™ brand fax transmittal memo 7671 # of pages 1

To <u>Pam</u>	From <u>Peter Hess</u>
Co. <u>SLC/DOGM</u>	Co. <u>PFO/DOGM</u>
Dept. _____	Phone # _____
Fax # _____	Fax # _____



Coastal
The Energy People

April 11, 1995

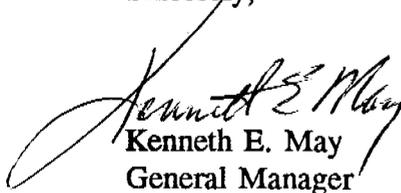
Utah Coal Regulatory Program
Division of Oil, Gas & Mining
Attn: James Carter
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Annual Report for SUFCO Coal Mine

Dear Mr. Carter:

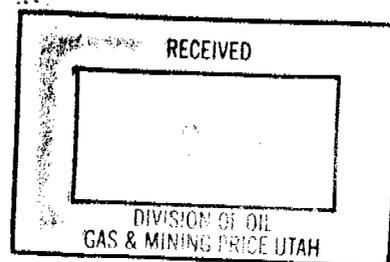
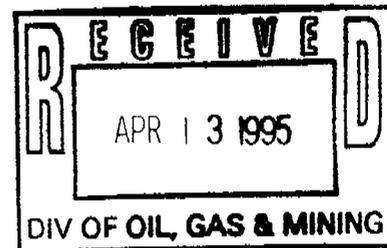
Attached herewith is a copy of the annual report for the Southern Utah Fuel Company coal mine for 1994. The information included is thought to be complete as requested. Questions should be referred to Barry Barnum at (801) 636-2669,

Sincerely,


Kenneth E. May
General Manager

KM/ak

enclosures



Southern Utah Fuel Company

A SUBSIDIARY OF THE COASTAL CORPORATION
397 SOUTH 800 WEST • SALINA UT 84654 • 801-637-4820

COAL MINING AND RECLAMATION OPERATIONS FOR 1994

(Must be submitted to the Division by April 14, 1995)

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
355 West North Temple
Salt Lake City, Utah 84180-1203
(801)538-5340

Permittee: Coastal States Energy Company

Mine Name: SUFCO Mine

Mailing Address: 397 South 800 West, Salina, Utah 84654

Company Representative: Wesley K. Sorensen

Resident Agent: Kenneth E. May

Permit Number: ACT/041/007

MSHA ID Number 42-00089

Date of Initial Permanent Program Permit: May 19, 1987

Date of Permit Renewal: May 1992

Quantity of Coal Mined (tonnage) 1994: 3,569,462