



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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September 9, 1991

TO: File

FROM: David Darby, Geologist *DD*

RE: Amendment, Mining Beneath Stream Buffer Zone, Upper  
Huntington Creek, Skyline Mine, ACT/007/005, Utah  
Fuel Company, Carbon County, Utah, Folder #2.

## Summary

Three separate plans for mining within the stream buffer zone have submitted by Utah Fuel Company and reviewed and by the Regulatory Authority since June 4, 1990. An amendment submitted June 4, 1990 proposed development of a single five-entry main system (the West Mains) under the stream buffer zone to cross under Huntington Creek to conduct exploration of possible faulting near the western boundary of the Skyline leasehold. Another approval was granted to allow development of mains to access coal reserves in a longwall panel, shown in Figure 1.

An approval was granted on October 22, 1991 which gave Utah Fuel Company permission to develop mine entries under sections of perennial streams using "non-subsidence control room and pillar mining". The approval was subsequently retracted on February 8, 1991 to give the U.S. Forest Service an opportunity to comment on issues for which they had concerns. The Forest Service provided comments on February 6, 1991 and on June 13, 1991 to Skyline's April 1, 1991 and May 13, 1991 amendments, which proposed mining methods under stream buffer zones.

To date there is no standing approval to conduct entry development under any other parts of stream buffer zones without prior review and approval by the Regulatory Authority.

A review of Utah Fuel's current proposed amendment dated May 13, 1991 and the U.S. Forest Service's comments bring to light the following concerns.

## **Analysis**

The amendments proposed for mining beneath stream buffer zones have indicated that full support mining will be implemented to protect stream channels and their buffer zones.

Although the amendments of October 12, 1990 and May 13, 1991 identify that no mining caused subsidence under any stream buffer zones will take place, the amendments fail to provide the means to be used to protect the stream channels and buffer zones from longterm subsidence.

The Kenneth C. Ko report submitted by Utah Fuel Company presents the subsidence potential with regard to development of the West Mains and for mining a single coal seam. The report does not encompass subsidence probabilities from multiple seams. The report is designed to analyze the mechanics and properties of the pillar, roof and floor, not to the effects on surface lands, overburden and ground water from extensive panel layout or multiple seam mining.

Outlined in paragraph three of page 5 of the Kenneth C. Ko Report, "it is pointed out that a situation in which longwall panels are mined out adjacent to the Mains, the results of the finite element analysis provided a clear message that subsidence is probable". Longwall panels will be developed in the vicinity of the entries which increase the lithostatic load on the pillars, even more so with multiple seam mining conditions.

## **Recommendation**

The longstanding concern by the Division and the U.S. Forest Service for perennial stream and habitat protection from subsidence needs to be addressed more completely before permission is granted to mine under perennial stream channels and buffer zones.

Prior to approval of mine development within stream buffer zones or under Electric Lake, the applicant will be required analyze for and develop a comprehensive geotechnical and rock mechanic study within the envelope of renewable resources on the minesite including especially perennial streams and springs and buffer zones.

The applicant will also be required to comply with the concerns of the U.S. Forest Service's June 13, 1991 comments.

dwd/DD

cc. B-Team

**Chronology of Amendments  
for Mining Under the Stream Buffer Zone**

Most of the correspondence in this chronology refer to engineering design changes presented for mining under stream channels. Other noted memos specify amendments which detail encroachment on the buffer zone to meet active mining conditions.

June 4, 1990 **Braxton from Utah Fuel Company**

Submitted information and Geotechnical Study (Kenneth C. Ko Report, May 9, 1990) to support plans for developing a 5-entry mains system under Huntington Creek, intended for exploration of reserves.

Aug. 7, 1990 **Braxton from Utah Fuel Company**  
(Rec'd)

Aug. 13, 1990 (This memo pertains to a proposed mine plan change.)  
Designs submitted to encroach on buffer zone to negotiate fault. A request to mine entries beneath all perennial stream buffer zones using pillar sizes no smaller than 75 by 75 ft. (95 by 95 ft. centers). Figures submitted showing planned encroachments on buffer zone.

Jun. 4, 1990 **Braxton from Utah Fuel Company**  
(Rec'd)

Aug. 27, 1990 Submitted geotechnical study by Kenneth C. Ko and Assoc. to substantiate amendment proposal to mine under Huntington Creek (West Mains).

Sept. 26, 1990 **Darby from Mark Bunnel, Utah Fuel Company**  
(Rec'd)

Sept. 28, 1990 Revised Figure 1 which shows encroachment into stream buffer zone to negotiate fault near longwall panel. Previously submitted Figure 1 of Aug. 1, 1990 submittal did not show change in pipeline.

Oct. 12, 1990 **DOGM from Utah Fuel Company**

Amendment submittal regarding page 4-78 which request development of mains under Huntington Creek and full support room and pillar mining under upper Huntington Creek, Bolger Creek, South Fork of Eccles Creek and Electric Lake buffer zones with pillar sizes no smaller than 75 by 75 ft. (95 by 95 ft. centers). Full extraction mining under buffer zones must first be approved by DOGM and FS.

Oct. 12, 1990 **Daron from Mark Bunnel, Utah Fuel Company**

Request for permit amendment to change type of mining allowed under upper Huntington Creek, Bolger Creek, South Fork Creek, and Electric Lake Buffer Zones. Based on Kenneth C. Ko report.

Oct. 22, 1990 **Memo to File from Darby**

(This memo pertains to a mine plan change) Recommended approval to conduct mining of West Mains and part of access entries described in amendment of Sept. 26, 1990.

Nov. 14, 1990 **Zumwalt, Utah Fuel Company from Daron**

Submittals of Aug. 27, and Sept 28, 1990 found to be complete by Darby.

Dec. 11, 1991 **Daron from Utah Fuel Company**

Utah Fuel addressed concerns regarding the amendment to page 4-78.

Jan. 31, 1991 **Zumwalt and other agencies from Daron**

Final approval plans for mining under a stream buffer zone

Feb. 6, 1991 **Braxton from U.S. Forest Service**

Objection of approval (Jan. 22, 1991) for amendment submitted October 12, 1990 and December 11, 1990. Comments identifying concerns with plans to mine under the stream buffer zone.

- Feb. 8, 1991 **Zumwalt Utah Fuel Company from Daron**  
Retraction of January 21, 1991 approval for  
mining beneath stream buffer zone.
- May 6, 1991 **Daron from Glen Zumwalt, Utah Fuel Company**  
Amended pages 4-77, 4-77a, 4-77b and 4-78  
were submitted to address Forest Service  
concerns of February 6, 1991.
- May 13, 1991 **Review Agencies from Daron**  
Transmittal letters to review agencies.  
Submittal is dated April 1, 1991 and amends  
MRP pages 4-77, 4-77a, 4-77b and  
Map 4.17.1-1.
- June 13, 1991 **Braxton form U.S. Forest Service**  
Comments identifying concerns with plans to  
mine under the stream buffer zone.