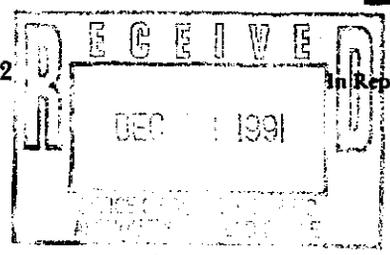
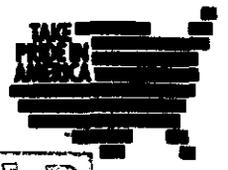


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United States Department of the Interior

OFFICE OF SURFACE MINING
RECLAMATION AND ENFORCEMENT
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202



December 5, 1991

MEMORANDUM

TO: Donna Griffin, Natural Resources Specialists
Albuquerque Field Office

THROUGH: Charles Harrison, Chief *Charles Harrison*
Engineering Support Section

FROM: Alan Wilhelm, Mining Engineer *alan Wilhelm*
Engineering Support Section

SUBJECT: Potential Subsidence Impacts - Belina Mine, Valley
Camp of Utah, Act/007/001, Carbon County, Utah

In response to the United States Forest Service, (USFS) concern regarding the planned mining of the Lower O'Connor Seam under the Boardinghouse Canyon and the associated stream, the Western Service Center has performed a brief technical review regarding this subject.

Mining in the Upper O'Connor Seam appears to have taken place under portions of the Boardinghouse stream that lies within USFS lands, see Plate 1. As depicted on Plate 2, this area has experienced various types of subsidence disturbance as a result of past mining activity. Most of this disturbance has occurred where overburden thickness is less than 500 feet.

The Belina Mine has requested that it be allowed to mine the Lower O'Connor Seam for an area that includes the Boardinghouse creek. A great portion of this area is on USFS land, see Plates 3 and 5. In its request to mine this area Belina contends that the Boardinghouse creek is not a perennial stream and does not have to include a subsidence buffer zone in its mine plan for this area.

Currently both the USFS and the Bureau of Land Management (BLM) are conducting studies as to whether Belina should be allowed to mine this area. These studies are scheduled to be completed within the next sixty days. A meeting between BLM, USFS and the State of Utah Division, of Oil, Gas and Mining (DOGM) is to take place shortly thereafter to decide if Belina will be allowed to mine under the Boardinghouse creek and if so with what stipulations.

If the above agencies agree that the Boardinghouse creek is not a perennial stream then no special criteria should be imposed on Belina with regards to subsidence. Should the studies conclude that the Boardinghouse creek is a perennial stream then special care should be taken to protect this stream from the effects of subsidence.

The most damaging subsidence disturbance that could affect the creek is for a sink hole to develop in the stream bed. This could lead to a loss of surface water to subsurface features.

Belina has contracted with an outside consultant to address the possible subsidence impacts that could result in the Boardinghouse creek area as a result of its proposed mine plans. In this report entitled "Subsidence Potential over two-seam Developments" by Kenneth C. Ko & Associates, Inc., it is stated that full seam recovery should not be employed in creek areas where overburden depth is less than 200 feet where plug-type subsidence is the issue. Studying past subsidence, in relation to overburden thickness, reveals that sink holes have occurred in areas where overburden depths have been as great as 450 feet, see Plate 2. All of the creek channel located in the review area has an overburden depth of less than 500 feet, see Plate 4.

Should it be determined that the Boardinghouse creek is a perennial stream then any plan to mine under this area must include a buffer zone under the creek, especially where overburden depths are less than 500 feet. The angle of draw used to determine this buffer zone should be 35 degree from vertical unless Belina can technically demonstrate that a draw angle less than this will not impact the creek.

If you should have any questions regarding this matter, you may contact Alan Wilhelm at FTS 564-2735.

Attachments