



May 10, 2000

Ms. Pamela Grubaugh-Littig  
 Utah Division of Oil Gas & Mining  
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 Box 145801  
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Re: N2000-46-1-2

Dear Ms. Grubaugh-Littig

Lodestar has received your letter of April 25, 2000 containing the rationale for not vacating the "failure to repair subsidence" NOV issued April 11, 2000. Had I realized that Inspector Hess had initiated a full review of the facts surrounding the NOV I would have presented the following information sooner so that he would have had time to review the progression of events surrounding the slump. Though belated, Lodestar would like to take this opportunity to provide additional information regarding the facts related to this issue. This letter will first establish the sequence of events when the subsidence began, next comment on the technical memo by Inspector Hess and then comment on the findings letter of April 25<sup>th</sup>.

#### HISTORY

On August 23, 1999 Fire Boss Larry Kulow discovered an area where mud was flowing into the mine. The area was approximately 150 feet in by the portal. Mud was flowing out of the corner at the roof and rib. When discovered, mud had flowed into the 20 foot wide entry for a distance of about 30 feet in by and 20 feet out by. The crack in the roof could not be safely examined close up, but appeared to be only about four feet long and about 2 feet wide. As explained to inspector Hess, safety of the workers was of paramount importance. Cleaning the mud from the area would have exposed the workers to additional hazards. Of the wide range of roof types that can be encountered underground, the most difficult to control is mud. The mud has no structural strength to help support itself and will typically flow around any attempts to contain it. Mine Management made the determination that rehabilitation of the entry was not warranted; especially since the entry had not been used as a travelway for a number of years. The area was dangered off and barriers were constructed to prevent access.

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The ground surface above the mud flow was inspected for signs of piping. The only feature that was found was an old depression that was about 10' x 5' x 3' deep, see Photo 1. The depression appeared to be fairly old since there was vegetation growing in it. The depression also was not in the correct location. It appeared to be from a similar event that had occurred years previously and was about 100 feet outby the mud flow. Given the uncertainty of the location, the entire slope between the two mines was dangered off with danger tape at the top and bottom of the slope.

Approximately three weeks later the mud flow had piped through to the surface. The location was about 100 feet from the small depression at the portal. The new depression was about ten feet in diameter and the bottom could not be seen. Danger tape was installed about 50 feet outside of the limits of the slump. Until the area stabilized it was not safe to get any closer. Access to other portions of the slope was then allowed and the danger tape at the top and bottom of the slope was removed.

Various methods to fill the void were discussed. Using concrete rubble from demolition of the # 1 Mine portals to plug the bottom of the hole and then filling it with dirt was one idea discussed. At the time a major site reconstruction was taking place. The high angle conveyor from #2 Mine and gallery belt from # 1 Mine were being replaced. There were components from both and construction equipment all over the two benches. In the end, it was decided to wait until the construction was completed and then proceed with repair of the slump. The construction of the new belt line was contractually scheduled to be completed by October 30, 1999. The actual completion date for the project was well into January, 2000. By then there was just too much snow on the ground to attempt any repair of the subsidence.

Though the winter was not particularly difficult, there was still between six to ten feet of snow on the level toward the end of the season. Once the ground was frozen and the snow began accumulating in December, it became extremely dangerous to approach the area surrounding the slump. As with glaciers, unseen cracks could develop under a crust of snow. A large dumpster was placed next to the edge of the slope above to eliminate the possibility of pushing snow cleaned from the yard into the area above the slump. Spring thaw began in earnest in mid-March. When Inspector Hess visited the site the ground was essentially bare in those areas with southern exposures. The bulk of the snow that remained was on the north facing slopes and along the berms.

#### TECHNICAL MEMO – APRIL 19, 2000

As Inspector Hess writes in his technical memo of April 19, 2000; "this opening is much larger than the original opening." This is correct. The depression noted in the MSHA form was quite a few years old and was not in the correct location; therefore, the entire slope between the two mines was dangered off at the top and bottom of the slope. As the mud flow into the mine made its way to the surface the danger tape was moved to a location approximately 50 feet outside of the

developing slump; the area that was deemed to be stable. No danger tape was placed closer to the hole. Inspector Hess is correct when he states that the flagging and stakes were in disarray. They had been under six to ten feet of snow.

Inspector Hess notes that he asked me if I could provide documentation of monitoring of the slump. I told him that nothing had been recorded but that just the week previous Mr. Maurice Turpin and I had discussed the method that we would use to repairing the slump when the snow had finished melting. We both felt that it would be unsafe to be working in the area with the accumulations of snow that remained. Inspector Hess was also told that the safety of the miners doing the repair work would be of primary importance. Inspector Hess was invited to check with Mr. Turpin to verify that that conversation had occurred. Other inspections were also being done. Approximately once a week during snowmelt I was personally checking the dimensions of the slump since it appeared that the slump was approaching the safety berm above it and an additional berm would be necessary.

Inspector Hess lists five "conflicting statements."

1. The entire area was put off limits from the top to the bottom of the slope, not as Inspector Hess assumes, at the perimeter 10 by 5 by 3 foot area. Enclosed is a copy of the sign that was posted. There was no flagging set around the 10' by 5' depression. It was not certain that the depression corresponded with the location of the mud flow. Inspector Hess writes "*... the mine roof should have been dangered off in the mine with additional support set to reduce the possibility of an extension of the area. This is common good sense mining practice,*" The area was and remains dangered off both underground and on surface. Barricade mesh supported by posts was set on the accessible area inby the mud flow. After inspecting the roof control and evaluating the options for plugging the crack, mine management determined not to rehabilitate the area. There was no safe way to stop the mudflow without putting people in jeopardy of getting buried under another mudflow.
2. Mr. Boyack of MSHA indicated that no additional roof support was set to prevent an extension of the area. The evaluation noted in "1" above had determined that the mud was flowing into the mine through a small crack; rather than a general roof failure. The entry had been essentially abandoned for years and only the first 50 feet were being used. It was not possible to set additional roof support on top of the mudflow. To repair the crack, the entire mudflow would have to have been cleaned to allow access. . It was uncertain if additional cracks could be activated while cleaning the mudflow. It was management's determination that installing additional support would be risks and that the fluid mud flow would be difficult to control. When examined by the author on May 2, 2000 the mud flow and crack in the roof were approximately the same size as in September, 1999. There was no noticeable enlargement of the crack.

3. The slump area was dangered off on surface in September of 1999. These stakes and danger tape were installed as soon as the slump piped through to surface and have been in place since October. No danger tape was installed at the edges of the small depression; rather, they were installed in September of 1999. There was no secondary slump.
4. The operator did protect the area from having snowmelt and water from going into the slump. A large dumpster was placed along the berm above the slump to minimize the possibility of pushing snow over the berm above slump. Though not a perfect solution this minimized the amount of snow added to the area. Unfortunately, the six to ten feet of snow that was directly above the slump and the snow on the slope between the slump and the berm above it did drain into the slump. Lodestar could not keep the direct snowfall off of the slope and the slump.
5. The initial mud flow happened on August 23, 1999. The slump made its way to surface within the next three weeks. This was during an major construction project at the mine. As explained earlier in this letter, the high angle conveyor from #2 Mine and gallery belt from # 1 Mine were being replaced. There were components from both projects and construction equipment all over the two mine benches. Management decided to wait until the construction was completed and then proceed with repair of the slump. The construction of the new belt line was contractually scheduled to be completed by October 30, 1999. This left plenty of time to repair the slump before winter. The actual completion date for the project was well into January, 2000. By then there was just too much snow on the ground to attempt any repair of the slump. When the DOGM inspection was being done, the snowmelt was just beginning to subside but the area was still too wet to begin repairs.

Inspector Hess then writes five justifications in his Technical Memo for not vacating the citation.

1. Since the operator "...knew a weakened area existed over the mine..." it was imperative that all miners stay off of the area so that miners do not fall into the slump where it may be bridged over. Lodestar was trying to ensure that would not be put at risk repairing the area too soon.
2. Yes, the soils had been weakened by water saturation. Nearly all of the moisture came from direct precipitation. There was a large dumpster relocated to the area above the slump to eliminate the possibility of pushing snow over the berm.
3. There was no extension of the area where the mudflow existed underground based upon an examination of the area on May 2, 2000. No enlargement of the crack or roof fall had occurred. The memo states " even though the entry was seldom used for access". One of the most dangerous situations that miners can be exposed to is rehabilitation of poor roof. Since the area was not being used, the safest thing is to danger off the area and keep all personnel out. A line of

cribs down the middle of the entry would have required that the mud flow be mucked out. Management did not want to place the miners at risk because of the concern that the vibration caused by cleaning out the mud flow could create another one while miners were in the area.

4. The area was protected from the disposal of excess snow with a large dumpster. Snow that was in the area was the result of direct precipitation on the area.
5. The operator did conduct a careful examination of the original mud flow. The 10' by 5' by 3' depression referred to in the violation is not the same as the slump that the violation cites. The operator determined that the area was not stable or safe within 50 feet of the slump. It was determined that accessing the area from the lower mine bench would damage much more of an area than working from the top. (See Photos 2 and 3) The slope of the ground in the immediate area above the portals ranges from 100% to 50% while access from the top would utilize the mine bench.

Lodestar determined that the safest way to fix the problem was to allow the area to finish sloughing in so that there would be no voids beneath the working area stabilize. As explained to Inspector Hess, the safety of the miners working in the area was the driving factor for the operator's decisions for repair of the area.

Inspector Hess makes the argument that the operator has had seven months to repair the damage to the area. The slump began on August 29, 1999 with the mudflow into the mine. Approximately three weeks later the slump began to show on the surface. During this time the entire mine site was being used as a staging area for the conveyor replacement project. Conveyor components were being removed, stored, fabricated and installed on both levels of the mine site. As explained earlier, the conveyor replacement project that was to be completed in October stretched into January. In January, February, and March, snow accumulations and frozen ground eliminated the possibility of repairing the slump. When Inspector Hess conducted his April inspection spring thaw was in full swing. Granted the slump existed for seven months, but access has been limited by both the activities being conducted on the site and the long cold winter.

## FINDINGS LETTER

The findings letter is essentially a recap of the Inspector Hess's Technical Memo of April 19, 2000. A brief statement of the regarding each point is addressed below.

1. A weakened area did exist. The 10X5x3 foot area was a number of years old.
2. Water saturation of the strata was mainly the result of direct precipitation.
3. There has been no extension of the original crack in the roof. Mine Management determined that it would not be safe to try to plug the hole where mud was flowing into the mine.

4. Measures were taken to prevent snow from being pushed over the berm. Snow present was the result of direct precipitation.
5. No attempt to fill the slump was made because of concern for the safety of people working near the slump.

It is assumed that this explanation of the facts surrounding the slump will result in the vacation of the citation. Please contact Lodestar should you have further questions regarding this matter.

Sincerely,



John M. Walters  
Senior Engineer



PHOTO 1



PHOTO 2



PHOTO 3



PHOTO 1



PHOTO 2



PHOTO 3