



**ALAN D. COX**  
**PROJECT MANAGER - GRANTS**

August 10, 2004

Mr. Bill Von Till, Site Manager  
c/o Document Control Desk  
Chief of Fuel Cycle Facilities Branch (Mailstop T8-A33)  
Division of Fuel Cycle Safety and Safeguards  
Office of Nuclear Materials Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike  
Two White Flint North  
Rockville, MD 20852-2738

**Re: Grants Reclamation Project**  
**Docket No. 40-8903**  
**License No. SUA-1471**

**Status of Reversal Wells S1 and S2**

Dear Bill:

This letter is intended to provide information regarding the current status of the ongoing fresh water injection program activities at the Grants site and present conditions regarding several aquifer gradient reversal wells utilized to monitor alluvial groundwater conditions surrounding the tailings piles. These reversal wells are intended to assure that conditions are maintained such that contamination from the tailings piles continue to be contained during ongoing groundwater remediation / restoration.

As you will recall, a 2000 foot long injection line was installed approximately 6 ft below the land surface on west side of the Large Tailings Pile (LTP) in 2003. Injection into this line was initiated on August 25, 2003. Figure 1 shows the location of the injection line as a green line. Water has been injected into three of the six ports along the injection line. Blue dots show the three locations where water is injected into the line. Figure 1 also shows the water-level rise for several monitoring wells near the injection line since the start of injection to the first week of August of 2004. This figure shows that water-level rise adjacent to the line ranges from nearly 4 feet at well BC to slightly greater than 8 feet at well S11 after approximately one year of injection. Slightly larger water-level rise has occurred in the northern portion of the injection line due to a larger percentage of the water being delivered to that portion of the line. The present injection rate into the line is approximately 160 gpm.

Gradient reversal is presently monitored in wells S1 and S2; locations of these wells are shown on Figure 1. Each of these two reversal wells are a similar distance from the injection line. The water-level rise that has occurred in wells S1 and well S4 have been slightly higher than that in reversal well S2. Reversal wells SO and SP are also shown on Figure 1 with reversal well SO being closer to the injection line.

Figure 2 shows the water-level elevations in the two 'S' pair of reversal wells with S2 and SO being further from the collection wells near the tailings. This figure shows that the reversal between wells SO and SP has been maintained throughout the rise in water levels caused by the injection into the new line. Initially, the water-level elevation in reversal well S2 was also greater than the water-level elevation in well

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S1 but these two levels have merged recently due to a slightly greater water-level rise in well S1 than in well S2.

The water level rises from the injection line have caused the reversal pair S1 and S2 to be rendered ineffective as reversal wells. This reversal pair needs to have one well near the injection and one well near the collection wells similar to the License change that was made in the KZ and DZ reversal pair. At present, the location of the S1 and S2 pair result in a cross-gradient orientation. Homestake has initiated the weekly water-level measurements of well S5 along with wells S1 and S2 so wells S5 and S2 can be used to monitor reversal in this area. Homestake would like to make this adjustment in the reversal monitoring the next time other changes in the License Conditions are made. In the meantime, the addition of well S5 in the monitoring program will effectively monitor aquifer gradient reversal in this area.

Thank you for your time and attention on this matter. Please contact me if you would like to discuss this information relative to reversal wells S1 and S2, or any other aspects of the ongoing fresh water injection program at the Grants site.

Sincerely yours,



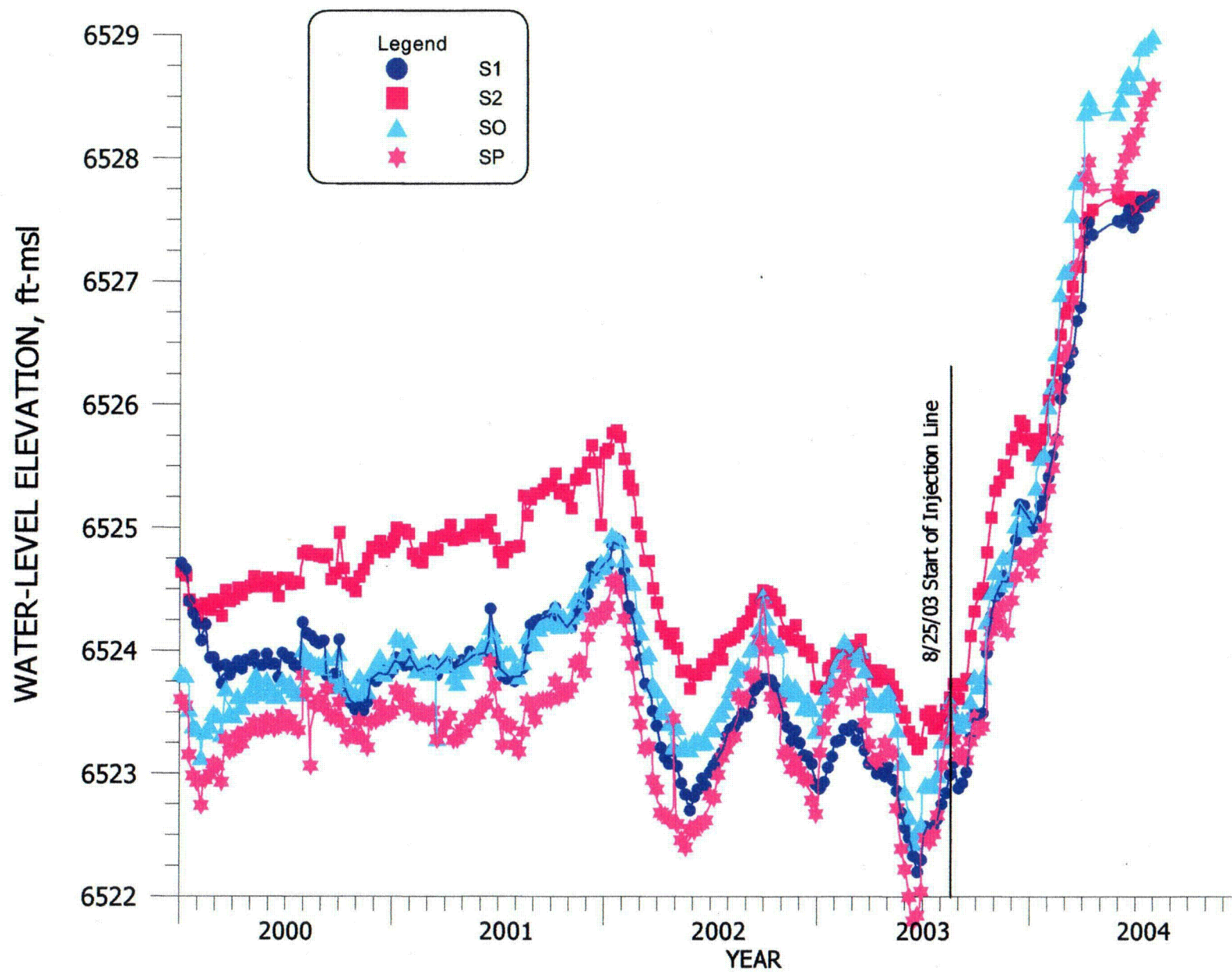
HOMESTAKE MINING COMPANY OF CALIFORNIA  
Alan D. Cox  
Project Manager

Enclosure(s)

cc: K. Myers, NM Environment Dept., Santa Fe (via separate cover letter)

R. Chase, SLC  
G. Hoffman, HYDRO-Engineering





**FIGURE 2. WATER-LEVEL ELEVATION FOR WELLS S1, S2, SO AND SP.**