D'APPOLONIA

CONSULTING ENGINEERS, INC.

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PROJECT SUPERVISOR

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Project No. NM80-740

Mr. Jim Olsen
L Bar Uranium Operations
SOHIO Western Mining Company
P.O. Box 25201
Albuquerque, NM 87125

Inspection Report
2nd Quarter 1983
Tailings Dam, L Bar Uranium Operations
Seboyetta, New Mexico

Dear Mr. Olsen:

The inspection of the L Bar Uranium Operations tailings dam for the second quarter of 1983 has been completed and the results are reported below. The inspection consisted of a visual inspection of the dam and related facilities and an assessment of the monitoring data and dam stability.

Visual Inspection

On June 1, 1983 I inspected the tailings dam and the related facilities. The mine and mill remained shut down and no tailings have been discharged into the pond during this quarter. The minimum beach width from the upstream crest of the second raise to the water surface of the pond was measured in early May at 230 feet by SOHIO personnel. Although the beach width was not measured during this inspection, it exceeds the 230 feet determined by the last measurement. Based upon the measured pond surface and minimum crest elevations determined by Koogle and Pouls Engineering, Inc. survey conducted on May 26, 1983, the freeboard is 7.21 feet. The freeboard gauge is now out of water and needs to be reset to the minimum crest elevation of 6199.80 feet.

Compared to the first quarter of 1983, precipitation at the site has been considerably less in the second quarter. However, residual effects of the heavy snowfall of the winter are still observable in the piezometers and the pond level. On the other hand, all slopes and travel surfaces on the dam are dry and in good condition. The cleanup activities and grading recommended in the first quarter inspection report have been accomplished during the second quarter.

The first and second tailings raises of the dam and the starter dam and beach are all in good condition. Surfaces are dry and well maintained with no rutting, rilling, or other signs of erosion. The front slope surfaces are all stable and spring vegetation growth is being established to further stabilize these surfaces. The front slope of the starter dam has heavy spring vegetation growth. Some of the brush will probably need to be cut during the next quarter in order to control the depth of root penetration into the slope. No new erosion in the front slope of the starter dam was observed.

A chemical binder has been applied to the surfaces of the first and second tailings raises. This binder apparently has been effective in controlling wind erosion and in maintaining a smooth, stable surface.

The toe ditch has been cleaned out and regraded by dozer, and the culverts through the access ramps to the horizontal drain collector tanks which were previously silted in have been cleared. Consequently, the toe ditch and culverts under the ramps are clear and provide effective drainage.

Horizontal drains continue to function. Through this quarter the total discharge of the horizontal drainage system has declined from approximately 15 gallons per minute to about 12.8 gallons per minute. The yield of the individual drains have all declined, with those on array No. 20 having declined the most in the last quarter (a total dropoff in discharge of 1.25 gallons per minute). The magnitude and pattern of drain discharge decline indicates that the system remains functional and that the phreatic surface continues to drop gradually.

Only one finger drain, No. 7, is producing a seep. All other finger drains appear to be dried up.

The sump pumps are operative and on automatic controls. The sump tanks and drains are clear of obstruction and functioning normally. The interceptor/diversion ditches north and south of the dam have been regraded by dozer and are smooth and free of obstruction. The ground cover of vegetation is being established in both channels, which will improve channel bed stability.

The saddle dam is in good condition, with spring growth providing additional erosion protection.

Overall, the visual inspection indicates that the tailings dam and related facilities are in excellent condition and are being well maintained.

Assessment of Monitoring Data

Movement points on the dam were surveyed by Koogle and Pouls Engineering on March 26, 1983. The survey data indicate changes in the movement points in the range of 0.06 feet or less in the horizontal directions and 0.05 feet or less in the vertical direction. When compared with the previous quarter's survey data, all movements are random, indicating no systematic or consistent movement trends. The changes in monitoring point coordinates are all very small and within the expectable range of measurement error. Consequently, no significant displacements are indicated by the movement points.

Piezometer readings were taken monthly during this quarter. The overall trend in the piezometers continues to indicate a gradual lowering of the phreatic surface. Most piezometers show a decline of up to several tenths of a foot. A few piezometers show slight increases in elevation of up to several tenths of a foot. However, none of the rises in these piezometers are systematic over the last few months, and up-and-down fluctuations are typical for all of these piezometers showing recent increases. Therefore, measurement error and/or seasonal fluctuations are probably responsible for these slight rises. The exception to this is piezometer No. 5, which has shown an increase of 1.7 feet over the last quarter. This piezometer is located near the south beach, where a trickle system has been in operation this quarter for the disposal and evaporation of mine water. This local recharging of the beach area is probably responsible for the anomalous increase in the reading at piezometer No. 5.

Stability Assessment

The movement point data and piezometer readings, as well as the visual inspection, indicate that the tailings dam remains stable with no significant change in the factors of safety during this quarter. The stability parameters for the second quarter of 1983 are at least as good, and in some cases better, than those of the previous quarter. Therefore, the calculated factors of safety determined in the last numerical stability analysis performed in the fourth quarter of 1981 remain applicable for this quarter. The minimum factors of safety for the dam are considered to be:

- Static factor of safety, 1.7 +
- Pseudo-static factor of safety, 1.2 +
- Static factor of safety with liquifaction, 1.7+

These safety factors exceed the minimum values required by the State Engineer. Consequently, we conclude that the stability of the dam remains adequate during this quarter.

If you have any questions or comments concerning this report, please contact me.

Yours very truly,

Alan K. Kuhn

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AKK:rp

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