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Docket File No. 40-3453
04003453013E

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WMUR: PJG
Docket No. 40-3453
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MEMORANDUM FOR: Docket File No. 40-3453

FROM: Peter J. Garcia, Jr., Project Manager
Operating Facility Section II, WMUR

SUBJECT: ATLAS GROUNDWATER STUDY, AMENDMENT NO. 8
TO SUA-917

Docket File 40-3453
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By letter dated April 6, 1982, Atlas Minerals submitted a report discussing the findings from Phase I of their ongoing hydrology study at the Moab Mill. By letter dated June 9, 1982, Atlas submitted a proposal for Phase II of the study. The proposed program as well as the results of the Phase I program were discussed at a meeting held at the site on April 14, 1982 involving H. Pettengill, NRC, and NRC consultant Dr. Roy Williams. Dr. Williams' comments on both subjects are provided in letters dated April 16, 1982 and April 27, 1982. The purpose of this amendment is to revise the groundwater monitoring program at the Moab Mill to incorporate the new wells drilled for the study and to require a water balance study for the site.

The Phase I program consisted of a deep boring drilled between the southeastern corner of the tailings impoundment and the Colorado River and extensive geophysical logging of the hole. The major findings of the Phase I work are summarized below:

- (1) Bedrock at the site exists at a depth greater than 400 feet.
- (2) A dense brine, not associated with tailings pond seepage, underlies the tailings pond starting at a depth between 55 feet and 140 feet.
- (3) There is very little grain size stratification in the material at the site.
- (4) Water quality data from monitor wells between the tailings pond and the river indicate the presence of seepage.

The findings indicate that seepage occupies the alluvial fill aquifer between the water table and the brine interface beneath the tailings pond. The seepage does not penetrate into the brine due to the greater

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density of the brine. The staff and Dr. Williams are in agreement with the above findings and conclusions.

Information not yet available concerning the seepage situation at the site is as follows:

- (1) The depth to the brine interface
- (2) The background water quality at the site
- (3) The rate of seepage from the tailings impoundment

The proposed Phase II program would attempt to provide the missing information. A well will be drilled between existing wells MW1 and MW2 for the purpose of locating the brine interface. Two piezometers will be installed in this well, one immediately above the interface and the other at a shallower depth to be determined during drilling. The wells will be designated ATP-2-D-82 and ATP-2-S-82, respectively. A well, designated ATP-3-82, will be drilled upgradient of the tailings pond to attempt to determine background water quality in the alluvial aquifer. In addition, Atlas proposes to drill two new wells at the same locations and approximate depths as existing wells MW1 and MW2. This is to allow comparison between data from the old wells and data from new wells which are properly installed and sealed from surface infiltration. The proposed program discussed above is acceptable to the staff and should provide the missing data specified in Items (1) and (2) above. The staff will require that the Phase II drilling program be completed by September 1, 1982, and that well installation data, including boring logs, be submitted to NRC by October 1, 1982.

The staff will require that Well ATP-3-82, the background well, be sampled monthly for the first three months and quarterly thereafter. This is to allow an early accurate determination to be made of background concentrations. The staff feels quarterly sampling of the other new wells is adequate since they are in the vicinity of wells which are sampled regularly as part of Atlas' required groundwater monitoring program. The staff will require that all samples be analyzed for Unat, Ra-226, Th-230, Pb-210, Po-210, Cl, SO₄, NO₃, As, Se, TDS, conductivity, and pH. These parameters should enable an accurate determination to be made of the impact of seepage from the tailings impoundment on the underlying aquifer.

The staff feels, and Atlas agrees, that a water balance study is the best method available to attempt to quantify seepage from the tailings pond. Atlas proposed, however, that the decision regarding the implementation

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of a water balance study be postponed until a review of the results of the Phase II drilling program indicate the need for the study. The staff feels, however, that the current rate of seepage from the tailings impoundment is an extremely important consideration for any future decision regarding the need for seepage control measures. The staff will therefore require that a water balance study be performed and the results submitted to NRC for review by March 1, 1983.

Based on the above, the staff recommends that Source Material License SUA-917 be amended by adding Condition No. 53 to read as follows:

53. The licensee shall install new monitoring wells ATP-2-S-82, ATP-2-D-82, and ATP-3-82 at the locations shown on Plate 1 of the report submitted by letter dated June 9, 1982. Approximate depths for the wells shall be as shown on Table 1 of the June 9, 1982 submittal. In addition, the licensee shall install two new wells at approximately the same locations and depths as existing wells MW1 and MW2. All new wells shall be installed by September 1, 1982 and well installation data, including borehole logs, shall be submitted to the Uranium Recovery Licensing Branch by October 1, 1982.

The licensee shall sample Well ATP-3-82 monthly for the first three months and quarterly thereafter. All other new wells shall be sampled quarterly. All samples shall be analyzed for Unat, Ra-226, Th-230, Pb-210, Po-210, Cl, SO₄, NO₃, As, Se, TDS, conductivity, and pH. Data from the groundwater sampling program specified above shall be included in the reports required by Condition Nos. 43 and 47 of this license.

In addition, the licensee shall submit for NRC review by March 1, 1983 the results of a water balance study for the tailings impoundment. This submittal shall include all assumptions and calculation used in the study.

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This amendment was discussed via telecon between Richard Blubaugh, Atlas,
and myself on July 29, 1982.

Original signed by

Peter J. Garcia, Jr. Project Manager
Operating Facility Section II
Uranium Recovery Licensing Branch
Division of Waste Management

Original signed by

Approved by:

H. J. Pettengill, Section Leader
Operating Facility Section II
Uranium Recovery Licensing Branch
Division of Waste Management

Case Completed: 04003453013E

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