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MAY 15 1986

URFO:RFB
Docket No. 40-8681
04008681760E

MEMORANDUM FOR: Docket File No. 40-8681

FROM: Randall F. Brich, Project Manager
Licensing Branch 1
Uranium Recovery Field Office, Region IV

SUBJECT: REVIEW OF ENVIRONMENTAL MONITORING DATA FOR UMETCO
MINERALS CORPORATION WHITE MESA MILL FOR THE PERIOD
FROM JULY 1, 1985 THROUGH DECEMBER 31, 1985

By letter dated March 30, 1986, Umetco Minerals Corporation (Umetco) submitted environmental monitoring data for the third and fourth quarters of 1985 as required by License Condition Nos. 18 and 24 of Source Material License SUA-1358 and 10 CFR 40.65. This memorandum presents the URFO staff review of the subject data with respect to past data and applicable standards.

Stack Sampling

In conformance with License Condition No. 24, quarterly measurements were performed on the yellowcake stack for U-nat, Ra-226, Th-230 and Pb-210. Emission concentrations were less than 1 percent of the restricted area MPC for Ra-226, while U-nat, Th-230 and Pb-210 concentrations were 4,530, 161 and 25 percent of their respective restricted area MPC.

In addition, semiannual ore stack sampling was performed on the demister and grizzly stacks in accordance with License Condition No. 24. Demister Ra-226 emission concentrations were less than 4 percent of the restricted area MPC, while respective U-nat, Th-230 and Pb-210 concentrations were 71, 32 and 5 percent of their MPC values. Ore stack emission concentrations for Ra-226, U-nat, Th-230 and Pb-210 were 75, 57, 835 and 16 percent of their respective restricted area MPC. The licensee failed to submit the associated LLDs as required by License Condition No. 24.

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The licensee was reminded of the need to submit the appropriate LLDs with the next environmental monitoring report.

The reported values are consistent with values measured at the mills. Review of air particulate data reveals that boundary concentrations are well below the respective MPCs. Since installation of the new scrubber in the yellowcake drying area, it can be expected to see an increase in yellowcake stack U-nat values.

Radon

Monthly data was collected from five environmental monitoring stations and from one background location. The highest average value for the second half of 1985 was 0.20 pCi/l at station BLV-5. The background station (BLV-3) averaged 0.11 pCi/l for the same period. No trends were observed apart from the typical annual winter peaks. The licensee did not report an LLD for this analysis although a statistical test performed at the 99.5 percent confidence level indicated no monitoring station measured significant concentrations above background. The licensee had been reminded during review of the previous environmental report that the radon LLD represented a required piece of data. During a telephone conversation with Mr. S. L. Schierman it was learned that the LLD had been obtained from the vendor lab, but was inadvertently omitted. Therefore, the LLD will be reported with the next environmental monitoring report. The staff notes that these values seem quite low for ambient levels. A review of the licensee's radon detector calibration should be conducted during the next regularly scheduled inspection.

Direct Radiation

Quarterly TLD readings were recorded at five monitoring stations. The maximum exposure rate of 26.78 mR/qtr occurred at station BLV-5 located near the southeast tailings area. The maximum average exposure was also reported for this station at 25.15 ± 7.3 mR/qtr, while the background station reported an average of 20.54 ± 2.58 mR/qtr. These values are slightly lower than the average measured since 1981 of 22.45 ± 3.81 mR/qtr for background and 25.9 ± 3.6 mR/qtr for the highest station.

Vegetation Samples

Samples were collected at three locations and analyzed for Ra-226 and Pb-210 at the required frequency and sensitivity. No discernible trend is apparent based on review of the data.

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Soil Samples

Soil samples are collected on an annual frequency. Since the results of soil sampling were reported in the previous monitoring report, no reporting is necessary for this period.

Groundwater Monitoring

Samples are collected from 12 wells around the tailings impoundment and mill site. Four wells were dry and could not be sampled. Quarterly samples are collected and analyzed for U-nat, sulfate, chloride, temperature, specific conductance and pH, while Ra-226, Pb-210, Th-230 and TDS, sodium, and arsenic are collected and analyzed semiannually in accordance with License Condition No. 24. All wells exhibited an increase in chloride concentration with the exception of well No. 3. Since the increased chloride concentration was measured at both the baseline and culinary wells, it is probably a natural phenomenon. Since the wells' open interval is between 80 to 100 feet beneath the surface of the ground and the cells' leak detection system consistently confirms the absence of pond seepage, it is most likely due to natural causes. In any event, the situation should be scrutinized closely during review of future monitoring reports. No other trends were apparent.

Surface Water

These samples are collected quarterly in accordance with License Condition No. 24 of SUA-1358 at Cottonwood and Westwater Creeks, which are located west of the mill. Samples are analyzed for U-nat, Th-230, Ra-226, Pb-210 and Po-210. Reported concentrations were at or near the LLDs which were in accordance with License Condition No. 24. No apparent trends were noticed.

Air Particulates

Air samples were collected and analyzed quarterly for U-nat, Th-230, Ra-226 and Pb-210 at five air monitoring stations at the required sensitivity. Concentrations did not exceed 0.4 percent of the respective maximum permissible concentrations for unrestricted areas.

Meteorological Data

Meteorological data was collected and presented by the licensee. Data was provided in graphical and tabular formats. Analysis of the wind,

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atmospheric stability and precipitation events were included. Total suspended particulate concentrations at the site were all below the 24 hour state and federal secondary standard of 150 ug/m³. The highest concentration measured was 57 ug/m³ on November 9, 1985, while the geometric mean for this reporting period was 16.0 ug/m³ which was well below the federal and state annual standard of 60 ug/m³.

Conclusion

The licensee reported all the environmental monitoring data required by License Condition Nos. 18 and 24 for the second half of 1985. Again, an LLD was not provided for environmental radon measurements. The staff discussed this matter with the licensee via telecon on April 24, 1986. The licensee obtained an appropriate LLD from the vendor, but failed to include it in this report. It was agreed that an LLD for radon and stack sampling parameters would be included in the next semiannual monitoring report. No significant changes from previous reports were observed in the licensee's submittal of March 20, 1986.

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Randall F. Brich, Project Manager
Licensing Branch 1
Uranium Recovery Field Office
Region IV

Approved by:

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Edward F. Hawkins, Chief
Licensing Branch 2
Uranium Recovery Field Office, Region IV

Case Closed: 04008681760E

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