40-1341

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

5N 157B Lookout Place

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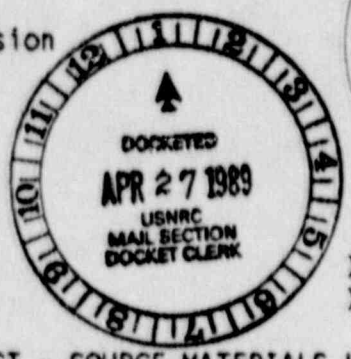
APR 18 1989



Mr. R. Dale Smith
U.S. Nuclear Regulatory Commission
Uranium Recovery Field Office
P.O. Box 25325
Denver, Colorado 80225

Dear Mr. Smith:

In the Matter of) Docket No. 40-1341
Tennessee Valley Authority)

EDGEMONT DECOMMISSIONING PROJECT - SOURCE MATERIALS LICENSE SUA-816 - 10 CFR PART 40 APPENDIX A - GROUNDWATER MONITORING PROGRAM

The Edgemont Uranium Mill Decommissioning Project Source Materials License SUA-816, Amendment 30, requires, by license condition 28, that TVA establish a groundwater monitoring program in accordance with 10 CFR Part 40, Appendix A, and submit the results of this monitoring to the USNRC, Uranium Recovery Field Office, by October 15, 1988. In accordance with this requirement, groundwater monitoring data collected during June through August 1988 were submitted to NRC on October 14, 1988. Well completion diagrams, geologic descriptions, and a location map for the monitoring wells were also provided.

Enclosed is a discussion of groundwater conditions as they relate to the question of whether a continuous saturated aquifer exists across TVA's Edgemont millsite. This discussion is based on the current groundwater monitoring program specified in license condition 28, which was approved by NRC on April 12, 1988, and implemented on June 15, 1988.

If you have any questions regarding this information, please telephone W. M. Belvin at 615/751-2693.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

C. H. Fox, Jr., Vice President
and Nuclear Technical Director

Enclosure
cc: See page 2

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89-0613

U.S. Nuclear Regulatory Commission APR 18 1989

cc (Enclosure):
Mr. C. L. Anderson
Silver King Mines, Inc.
P.O. Box 49
Edgemont, South Dakota 57735

Enclosure
Edgemont Decommissioning Project Millsite
Groundwater Detection Monitoring Program

Introduction

In accordance with NRC's letter dated September 22, 1987, TVA implemented an NRC-approved groundwater detection monitoring program in June 1988, which consisted of three potential background wells and six compliance wells. These wells were located, constructed, and developed as described in TVA's submittal dated October 14, 1988.

Sampling Efforts

Efforts to collect groundwater samples have continued since the initiation of the current program on June 15, 1988. To date, there have been 18 scheduled sample events. Approximately 75 percent of the total possible samples were not collected because of insufficient water volume in most of the wells for sample analysis. Four of the compliance wells have never produced sufficient water to obtain a sample and are essentially dry. A fifth compliance well initially produced water, but has not produced sufficient water for sample analysis since September 14, 1988. Attempts to obtain samples from these wells have continued for each sample event since the initiation of the program (see enclosure). The sixth compliance well located in the margin of the Cheyenne River flood plain approximately 275 feet south of the Cheyenne River, has produced sufficient quantities of water for sample analysis on each sample event to date. Analyses of the samples collected from this well have been supplied to NRC in TVA's October 14, 1988 submittal and the Semiannual Report #12, May 1988 - October 1988, submitted to the NRC on January 27, 1989.

Millsite Hydrogeology

Based on the groundwater well data, a continuous saturated aquifer does not exist within the alluvium across the millsite. The discontinuous nature of the saturated zone results from a combination of hydrogeological factors, including the heterogeneity of the alluvial deposits, irregularities in the surface of the underlying shale which locally rises above the water table, and the generally limited groundwater present in the alluvium. Under these conditions, an effective and meaningful groundwater monitoring program does not appear feasible.

Millsite Reclamation Status

The sand and slime tailings and, consequently, the mill process ponds have been removed from the millsite. This has eliminated the tailings as a potential source of contamination at the millsite and has also reduced the hydrological head provided by the ponds and liquid contained within the tailings. The millsite has been regraded with clean material and recontoured to cause positive surface runoff to Cottonwood Creek and the Cheyenne River, and the area will be revegetated during the spring of 1989. This minimizes the potential for ponding of water on the millsite. By eliminating the water in ponds, revegetating across the millsite and maintaining positive drainage to the river, infiltration of water into the alluvium across the millsite will be minimized.

Surface Water Monitoring

TVA has collected surface water samples from several locations including the Cottonwood Creek upstream of the millsite (Cottonwood Creek Control Station), the Cheyenne River upstream of the millsite (Cheyenne River Control Station), and the Cheyenne River downstream of the millsite (Cheyenne River Effects Station) as a part of the environmental monitoring program that has been reported to the NRC in 12 semiannual reports. These data show no adverse impacts to surface water (Cheyenne River or Cottonwood Creek) from either surface water runoff or groundwater infiltration.

Summary

Because of the hydrogeology of the millsite, additional attempts to sample the compliance wells will most likely continue to show that there is insufficient water for sample analysis. In addition, surface water monitoring conducted to date has not indicated adverse impacts to Cottonwood Creek or the Cheyenne River as a result of groundwater infiltration or surface runoff from the millsite.

The data collected to date from groundwater monitoring indicate that there is not a significant continuous saturated groundwater aquifer within the alluvium across the Edgemont millsite. Based upon this information and existing site conditions, TVA believes that it is not meaningful to conduct a groundwater monitoring program at the millsite.

Groundwater-monitoring Program
Compliance Well Samples Collected

Wells	6/15	6/22	6/29	7/6	7/20	8/1	8/6	8/31	9/14	9/28	10/11	10/25	11/9	11/21	12/6	12/19	1/3	2/13
C-1	Y	Y	Y	Y	Y	Y	Y	Y	Y	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
C-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Legend
Y - sample collected
NA - Insufficient water for adequate sample analysis

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