

04006659940E

Petrotomics Company

40-6659

P.O. Box 8509, Shirley Basin, Wyoming 82615 • Telephone: (307) 234-9341

RETURN ORIGINAL TO PDR, HQ.

January 8, 1993

Mr. Ramon E. Hall
 Director
 U.S. Nuclear Regulatory Commission
 Uranium Recovery Field Office
 Region IV
 P.O. Box 25325
 Denver, CO 80225

↑
 DOCKETED
 JAN 13 1993
 USNRC
 MAIL SECTION
 DOCKET CLERK

93 JAN 13 10:03
 RECEIVED
 URFD

Re: Corrective Action. Source Materials License SUA 551

Dear Mr. Hall:

In response to Ms. Cynthia Miller-Corbett's request for additional information concerning the use of additional ground water to be evaporated under the proposed corrective action modification, the following data is furnished.

The average pumping rate that is presented in the corrective action modification proposal of January 1992 is 112 gal/min. For an estimated six year period, the modifications would increase the volume of pumping from the Upper Wind River sand by 353 million gallons of water.

An estimate of the volume of water available in the Wind River aquifers from the Petrotomics area was obtained by taking the average saturated thickness for the aquifer and multiplying it times its areal extent and times a specific yield value of 0.1. Exhibit 6-2 of the 1986 ground-water report presents the western limits of the Main Wind River sand in the Petrotomics area. This western limit has been adjusted for May of 1992, and was used to compute the area of the extent of the saturated Main Wind River sand. The Lower Wind River sand exists and is saturated over the entire Petrotomics area. The area used to calculate the volume for the Lower Wind River sand is within township 27N range 78W, and includes all of sections 4 and 5, the eastern one-quarter of section 6, the east half of the NE quarter of section 7, the north half of sections 8 and 9, and approximately the western one-eighth of section 3. This area is approximately 2300 acres. The portion of this area that is saturated within the Main Wind River sand is 1044 acres. The average saturated thickness for the Main Wind River sand over this area is thought to be approximately 40 feet. A volume of 1.360 million gallons of water was calculated from this

9302180133 930108
 PDR ADDCK 04006659
 C PDR

170018

Mary C. Hood

Add Info

93-0165

DF02

Mr. Ramon Hall
January 8, 1993
Page 2


area, the aquifer thickness, and a specific yield of 0.1. The volume of water estimated in the Lower Wind River sand over this area was estimated to be 6.740 million gallons, with an average saturated thickness of 80 feet used for the Lower Wind River. Therefore, there is an estimated 8.100 million gallons of water available in the Main and Lower Wind River sands in the Petrochemicals area. This is 23 times the volume of water estimated to be removed by the corrective action modifications. The water removed is about 4.4% of the available water.

An estimate of the recharge to the Wind River aquifers over the 2300 acres was obtained by using a recharge rate of $0.2E-4$ feet/day. This recharge rate was obtained from the calibration of a numerical model of Shirley Basin. This equates to an average recharge rate of 10.4 gal/min for this area. Recharge also occurs to the Wind River sands where the Little Medicine Bow River contacts these sands.

Using a recharge rate of 10.4 gal/min, about 65 years would be necessary for replacement of the additional water used. Although a substantial amount of time is required for replacement, the proportion of available water used is small, and would not affect other users. Therefore, the additional use of ground water proposed does not represent an irreversible or irretrievable use of the ground water.

Please contact me if you have further questions.

Sincerely,


R.A. Juday
Supervisor

RJ:bf