

Docket No. 40-8768  
PDR



**KERR-McGEE NUCLEAR CORPORATION**

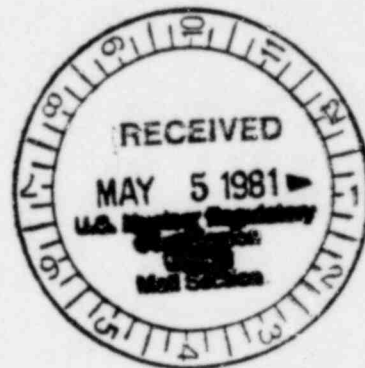
KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

Return to  
D. CRAMER  
396-55

May 1, 1981



John Linehan  
Nuclear Regulatory Commission  
Mail Stop 483 SS  
7915 Eastern Ave.  
Silver Springs, MD 20910



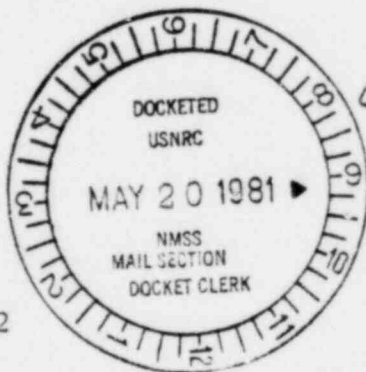
Docket No. 40-8768  
Kerr-McGee Q Sand In Situ Project

Dear Mr. Linehan:

Per your request, attached are two(2) copies each of data on uranium concentrations in the water discharged from the Bill Smith mine water treatment system (NPDES permit No. WY-0022411) and a summary of the anticipated impact of the Q sand project on the total discharge.

Sincerely,

W.J. Shelley, Vice President  
Nuclear Licensing and Regulation  
Environment and Health Management



WJS:kb

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See Exempt.  
10049  
Add'l info

8106010692

BILL SMITH MINE WATER DISCHARGE  
Q SAND IN SITU PILOT PROJECT  
CONVERSE COUNTY, WYOMING

Uranium concentrations in the Bill Smith mine water at the discharge point, NPDES permit WY 0022411, are as follows:

<u>Report Date</u>	<u>Uranium Concentration mg/l</u>		
	<u>Minimum</u>	<u>Maximum</u>	<u>Average</u>
Jan 22, 1979	0.42	0.53	0.46
Apr 16, 1979	0.28	0.45	0.38
Jul 16, 1979	0.28	0.39	0.35
Oct 23, 1979	0.30	0.50	0.37
Jan 18, 1980	0.25	0.36	0.31
Apr 23, 1980	0.24	0.34	0.29
Jul 28, 1980	0.22	0.97	0.33
Oct 27, 1980	0.20	0.30	0.25
Jan 26, 1981	0.18	0.31	0.23

IMPACT OF Q SAND ISL PROJECT  
NPDES DISCHARGE CONCENTRATION  
BILL SMITH MINE FACILITY  
CONVERSE COUNTY, WYOMING

Although the Bill Smith mine water quality may vary with time, the effect of the Q sand project on the Bill Smith mine water treatment system is expected to be as follows

Two (2) Gallons Per Minute Bleed Stream

Uranium: When the 2 gpm of water containing  $\pm 1$  mg/l uranium is routed to the mine water treatment ponds for radium removal, it will mix with about 1700 gpm of Bill Smith mine water containing about 0.3 to 0.4 mg/l uranium. The net effect will not be detectable in the discharge stream.

Sodium: The 2 gpm bleed stream is expected to contain about 500 mg/l sodium and increase the sodium level in the total discharge about 0.5 mg/l to about 28 mg/l.

Carbo-  
nates: The 2 gpm bleed stream is expected to contain about 1500 mg/l carbonates and increase the level of the carbonates in the total discharge by about 1.5 mg/l to about 190 mg/l.

Chloride: The 2 gpm bleed stream is expected to contain about 150 mg/l chloride and increase the chloride level in the total discharge less than 0.5 mg/l for a total concentration of about 6 mg/l.

Fifty (50) Gallons per minute restoration stream

Uranium: The water will be processed through the IX unit prior to discharge; therefore, it will contain  $\pm 1$  mg/l uranium and will increase the uranium level in the total discharge about 0.02 mg/l to about 0.4 mg/l.

Sodium: The 50 gpm stream is expected to contain about 380 mg/l sodium and increase the sodium level in the total discharge stream by about 10 mg/l to near 40 mg/l.

Carbo-  
nates: The 50 gpm stream is expected to contain slightly over 1000 mg/l carbonates and increase the carbonate level in the total discharge by about 25 mg/l to about 215 mg/l.

Chloride: The 50 gpm stream is expected to contain about 100 mg/l chloride and increase the chloride level in the total discharge by about 3 mg/l to  $\pm 8$  mg/l.