Docket No. 40-8768
PDR

Return to
D. CRAMER
396-55

KERR-McGEE NUCLEAR CORPORATION
KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

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

encls. 2

Fee Exempt.
10049
Add'l info

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:

	Uranium Concentration mg/l		
Report Date	Minimum	Maximum	Average
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 ±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.

Carbonates: 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 ± 1 mg/l uraium 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.

Carbonates: 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 ±8 mg/l.