

Docket File 40-8728
LFMB/DCS/PDR
Region IV
SWastler
WDEQ
State Health Office
URFO r/f

40-8728/SLW/83/12/13/0

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JAN 03 1984

URFO:SLW
Docket No. 40-8728
04008728

MEMORANDUM FOR: Docket File No. 40-8728

FROM: Sandra L. Wastler, Project Manager
Licensing Branch 1
Uranium Recovery Field Office, Region IV

SUBJECT: REQUEST FOR SURFACE DISCHARGE OF EVAPORATION POND
WATER AT THE TETON R&D LEUENBERGER SITE

Discussion

By letter dated November 21, 1983, Teton Exploration Drilling Company, Inc. (Teton) requested that their Source Material License SUA-1373 be amended to allow surface discharge of all water presently contained within the south Leuenberger solar evaporation pond and, thereby eliminating the present license requirement to take pond water samples, pond level measurements and leak detection system checks. The purpose of Teton's proposed amendment is to eliminate the potential for pond leakage during the current inactive period at the site and to reduce potential site hazards by disposing of the pond sludge and possibly the old liners at a licensed disposal facility. The staff's evaluation and recommendations on the licensee's request is discussed below.

As discussed in the November 26, 1982 memorandum to the files, the licensee has concluded all research and development activities and cleaned up the Leuenberger site. The water in the south solar evaporation pond resulted from the final ground-water restoration at the Leuenberger site and cleanup activities. The water originated from site ground water and does not contain process water or brines from R&D operations. The applicant has treated the pond water with barium chloride in order to reduce the level of radium to dischargeable levels. Water samples taken after treatment show pond water quality to be within livestock use category (see Enclosure 1). Teton proposes a one-time surface discharge from NE $\frac{1}{4}$ of Section 14, T34N, R74W, Converse County,

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Wyoming, at a controlled discharge flow of 50-100 gallons per minute (gpm). The controlled discharge will allow Teton to keep the surface discharge from leaving the UNC Teton R&D site.

Conclusions

Due to the facts that the surface discharge will be maintained onsite, any ponded water available to livestock or wild animals is within the livestock use category of water quality, and the licensee is required by license condition to conduct a final radiation survey at site, the NRC staff considers the environmental impact of the proposed surface discharge to be minimal. Based on the current conditions at the site, as discussed in the licensee's letter dated November 21, 1983, and the November 26, 1982 memorandum to Docket File 40-8728, the staff concludes that the proposed surface discharge from the south Leuenberger solar evaporation pond is acceptable and recommends amending SUA-1373 to delete license conditions 23 and 32.

15/
Sandra L. Wastler, Project Manager
Licensing Branch 1
Uranium Recovery Field Office
Region IV

Approved by:

15/
Edward F. Hawkins, Acting Chief
Licensing Branch 1
Uranium Recovery Field Office, Region IV

Enclosure: As stated

Case Closed: 04008728

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SWastler/lv

EHawkins

83/12/28

1/3/84

CLIENT: UNC-TETON EXPLORATION DRILLING, INC. - ANALYTICAL DATA REPORT
 LEVENBERGER IN-SITU PROJECT POND TREATMENT

FINAL REPORT DATE: 10/24/83

FINAL SAMPLES RECEIVED: 9/23/83

SAMPLE #	001	002	024	025	026	027	028	MEAN	STD DEV
SAMPLE DATE	6-9-83	6-9-83	9-7-83	9-23-83	9-23-83	9-23-83	9-23-83		
SAMPLE NAME	H POND	S POND	H POND	S POND	S POND	S POND	S POND		
B.T.*	B.T.*	B.T.*	D.T.*	SE*	NW*	SW*	NE*		
PARAMETERS									
HCO3	421.4	188.6	259.6	275.7	294.3	230.4	272.3	283.2	10.8
CO3	29.1	4.3	35.5	31.2	25.0	25.9	32.2	28.6	3.7
CL	779	809	949.5	1003	1028	1020	1013	1017	9.4
SO4	441	441	471	477	469	499	477	477.8	8.6
CH	4.1	60.5	29.9	29.7	30.1	30.2	30.3	30.1	0.3
NC	43.5	42.2	48.5	51.0	52.0	50.0	51.0	51.0	0.9
HA	801	687	835	842	839	839	835	839	2.9
K	19	19.5	25.0	23.6	24.0	23.6	23.6	23.7	0.2
ANIONS REQ	39.01	35.21	42.03	43.67	44.40	44.58	44.05		
CATIONS REQ	39.14	36.91	42.48	42.95	42.93	42.76	42.67		
ION BALANCE %	99.63	95.40	98.94	102.15	103.43	104.26	103.22		
ALK CACO3	392.2	151.8	272	278	283	281	277	279.8	2.8
COND UNHO/CN	3880	3547	4225	4257	4183	4257	4257	4238	37
TPS @ 180C	2318	2120	2638	2618	2793	2818	2940	2819	17
CALC TDS	2326	2157	2524	2598	2613	2623	2598	2608	12
PH	8.81	8.42	8.95	8.90	8.89	8.87	8.88		
AL	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
NH4 AS N	<0.05	<0.05	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NA
HS	0.075	0.030	<0.005	0.006	0.006	<0.005	0.005	0.006	0.0006
BA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
B	0.11	0.14	0.14	0.15	0.13	0.16	0.14	0.15	0.01
CD	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
CR	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA
CU	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01
FE	0.26	0.32	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA
PB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA
MN	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA
HC	0.0013	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA
NO	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
NI	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	NA
NO2	0.007	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA
NO3	0.04	0.03	0.06	<0.01	0.05	0.06	<0.01	0.04	0.03
SE	0.089	0.043	0.028	0.031	0.027	0.028	0.022	0.027	0.004
U	1.76	3.24	3.30	3.13	3.17	3.22	3.25	3.19	0.05
V	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
ZH	0.04	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
RA-226 WAMCO	128	354	59	1.5	0.7	1.1	0.7	1.0	0.4
RA-PRECISION	+/-10	+/-26	+/-3	+/-0.4	+/-0.3	+/-0.4	+/-0.3		
TH-230 WAMCO	12.4	40	2.7	4.4	2.3	1.6	0.4	2.2	1.7
TH-PRECISION	+/-2.8	+/-7.1	+/-1.2	+/-1.6	+/-1.3	+/-1.1	+/-0.8		
RA-226 CEP				<0.6	<0.6	<0.6	<0.6	<0.6	NA
RA-PRECISION				HA	NA	NA	NA		
TH-230 CEP				4.5	<0.1	<0.1	<0.1	1.2	2.2
TH-PRECISION				+/-1.0	NA	NA	NA		

SAMPLES 001-3.002 COMPOSITE POND SAMPLES TAKEN PRIOR TO TREATMENT - 6/9/83
 SAMPLE 024 COMPOSITE NORTH POND SAMPLE TAKEN AFTER SOUTH TO NORTH TRANSFER/TREATMENT-SAMPLES 025-028 SOUTH
 POND GRAB SAMPLES TAKEN AT POND CORNERS AT VARIOUS DEPTHS-MEAN COLUMN REFERS TO MEAN OF 9/23 S POND SAMPLES

ALL VALUES REPORTED IN MG/L EXCEPT RA-226 & TH-230 (ppb)

Water
 Drinking
 250.00
 6.5-8.5
 800
 250
 CL Std
 SE
 Domestic

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URFO:SLW
 Docket No. 40-8728
 SUA-1373, Amendment No. 8

Teton Exploration Drilling, Inc.
 P.O. Drawer A-1
 Casper, Wyoming 82602

Gentlemen:

Pursuant to Title 10, Code of Federal Regulations, Part 40, and your submittal of November 21, 1983, Source Material License No. SUA-1373 is hereby amended to allow a one-time surface discharge of all water presently contained within the South Leuenberger Solar Evaporation Pond and, as a result of this discharge, to delete License Conditions 23 and 32. All other conditions of this license shall remain the same.

The effects of this amendment are to allow UNC Teton to discharge water from the South Leuenberger Solar Evaporation Pond in order to eliminate the potential for pond leakage and to allow disposal of pond sludge and possibly old liners at a license disposal facility.

FOR THE NUCLEAR REGULATORY COMMISSION

15/

R. Dale Smith, Director
 Uranium Recovery Field Office
 Region IV

URFO	URFO <i>EH</i>	URFO <i>ES</i>			
SWastler <i>lv</i>	EHawkins	RDSmith			
83/12/28	1/4/84	1/3/84			

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