UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

In the matter of

SEQUOYAH FUELS CORPORATION and GENERAL ATOMICS

(Gore, Oklahoma Site Decontamination and Decommissioning Funding)

Docket No. 40-8027-EA

Source Material License No. SUB-1010

January 18, 1993

REPLY AFFIDAVIT OF TIMOTHY P. BROWN

I, Timothy P. Brown, depose and say:

1) The purpose of this affidavit is to respond to the statements made by Bert J. Smith and Kenneth J. Schlag in their affidavits of January 7, 1994, and January 10, 1994, respectively. These affidavits attempt to support the affidavit of John S. Dietrich (December 3, 1993), and attack my affidavit of December 27, 1994. Mr. Smith's Affidavit fails to present any concrete evidence which refutes conclusions reached in my affidavit, while Mr. Schlag's affidavit contains errors regarding the current EPA Drinking Water Regulations and statements in my affidavit. Paragraphs 2-11 address the Affidavit of Bert J. Smith while paragraphs 12-14 address the Affidavit of Kenneth Schlag.

2) In paragraph 7 of my affidavit, I stated that Mr. Dietrich's conclusion that groundwater does not flow toward Mr. Henshaw's property "is based on measurements at the groundwater's upper surface in the immediate vicinity of the waste ponds, as described in paragraph 8 of his affidavit." According to Mr. Smith, this statement is "incomplete" because "Mr. Dietrich's conclusion is also based upon the extensive studies that were summarized in the documents referred to in paragraph 7 of the Dietrich Affidavit." (Smith Affidavit, paragraph 5). However, Mr. Dietrich's conclusion, as stated in paragraph 8 of his affidavit, was clearly based on the potentiometric maps he specifically cited in that paragraph. Thus , my statement was not incomplete.

3) In paragraph 7 of his affidavit, Mr. Smith states that the Dietrich affidavit "dealt with groundwater flow at the fertilizer pond area because that is the area of industrial

activity at SFC's site which is closest to Mr. Henshaw's property, and because any groundwater flow to the south from the processing areas north of the fertilizer pond area would become part of, and follow the same pathway as, the groundwater flow under the pond areas." He relies on Attachments 3 and 4 of his affidavit to reach this conclusion. However, as discussed in my affidavit (paragraph 8), insufficient data exist to reliably conclude that flow toward Mr. Henshaw's must necessarily pass directly through this small area nor that deeper pathways do not exist which could lead to the Henshaw property. There may exist other flow paths that have not been tested by SFC.

4) According to Mr. Smith, Attachments 3 and 4 of the Dietrich affidavit "show that the groundwater flow beneath the fertilizer pond area is generally westward and away from Mr. Henshaw's property." However, Attachments 3 and 4 do not support this assertion. First, they show groundwater flow in at least one other direction: in the southeast portion of the small area portrayed by these maps, flow is directed southerly. Second, as discussed in my previous affidavit at paragraph 7, these maps cover too small an area to reliably show groundwater flow in the entire area that potentially affects Mr. Henshaw's property. For instance, although the maps show groundwater flow in a southerly direction, it is impossible to tell what the flow field does south of the area. What little information is provided in Attachments 3 and 4 shows a rather complicated potentiometric surface. Thus, it is impossible to reliably predict where contaminants entering the groundwater will travel, based on this very small picture.

5) In paragraph 8 of his affidavit, Mr. Smith claims that groundwater flow in the processing area north of the fertilizer ponds "radiates westward, northwestward, and southwestward from the topographically high area occupied by the main process building." In making this statement, Mr. Smith effectively concedes that he oversimplified when he stated in the preceding paragraph that groundwater flow in the area is "generally westward." In truth, as Mr. Smith acknowledges, groundwater flow radiates from the process area in an arc of at least 180 degrees. Moreover, other maps prepared for SFC by Mr. Smith's company, but not cited by him here, show that the radial flow is even broader than he describes, and includes southerly flow. See Figures 72 and 73 of the FEI (Attachments 1 and 2). Finally, as stated by Mr. Smith, the main processing building is in a "topographically high area", (Smith Affidavit, paragraph 8). It is common for such topographic highs to radiate flow in all directions. Thus, none of the information cited by Mr. Smith establishes that groundwater cannot flow toward Mr. Henshaw's property from the process area; and indeed SFC's own data indicates that groundwater flows in a southerly direction.

6) In paragraph 7 of my affidavit, I stated that the area examined by SFC was too small to reliably predict the direction of contaminated groundwater flow from the SFC site. Mr. Smith responds that "extensive investigations performed during the FEI, based upon historical information regarding facility activities, did not identify any other areas that needed to be investigated", (Smith Affidavit, paragraph 9). Thus, according to Mr. Smith, "groundwater flow in other areas could not bring contamination to Mr. Henshaw's property." This conclusion is not supported by SFC's own studies of the site. As discussed above and in my previous affidavit at paragraph 7, available groundwater mapping of the SFC site shows that the hydrogeology of the area is complex, including the presence of a fault that transects the site. Thus, small areas cannot be used to

predict groundwater flows over the larger area. The "200 groundwater monitoring wells" and "hundreds of soil samples" referred to in Mr. Smith's affidavit do not provide information about the direction of groundwater flow away from the process and fertilizer pond areas, but rather depict the current level of contamination in a given location. Thus they cannot be relied on to rule out further study and/or predict the movement of contaminant plumes outside this local area.

7) In paragraph 10, Mr. Smith claims that the geology of the SFC site "has been defined in detail" and that the relationships between geological units are "neither unpredictable nor overly complex." However, the FEI study, which Mr. Smith managed, attempted very little definition of the geology outside the immediate processing area. In fact, the FEI acknowledges that in spite of numerous soil and lithological borings done in the processing area, "some difficulty was encountered in correlation of lithological data south of the Decorative Pond" (FEI at page 206). The Decorative Pond is located south of main processing area and within the area which has been studied. Further, as discussed in my previous affidavit at paragraph 7(a), FEI Figures 48 through 54 show stratigraphic relationships which would be quite difficult to predict outside of the processing area.

8) In paragraph 12, Mr. Smith discounts the significance of the fault zone which runs through the SFC site. Mr. Smith claims that because the fault lies to the southeast of the processing area and fertilizer ponds, "groundwater will not flow in the direction of that fault, and therefore will not be affected by that fault." As discussed above and in my previous affidavit, Mr. Smith has provided no technical basis for such an unequivocal statement regarding the direction of groundwater flow from the process and fertilizer pond areas. The study done by Mr. Smith's company itself indicates the significance of the faulted zone. The FEI (page 210) states that the fault zone contains the "only local area capable of supporting a marginal well." A productive well here is possible because the faulted zone, with it's highly fractured rock, provides a zone of high porosity and high conductivity capable of delivering relatively large amounts of water to wells drilled within it. This high porosity and conductivity will also cause the fault to act as a "conduit" of high velocity and flux within the groundwater flow field, attracting flow from the surrounding less fractured zones. It is well known that such faulted and fractured zones within bedrock often form dominant features in groundwater flow regimes, setting up major conduits, and sources or sinks, exerting important effects relevant to flow and transport on the local flow field. Yet Mr. Smith is willing to discount the faulted zone's effects on transport at SFC with almost no data collected relating to this important feature. His conclusion has no basis.

9) In my previous affidavit, I stated that Mr. Dietrich's affidavit failed to address the possibility that deeper levels of groundwater may flow toward Mr. Henshaw's property; and that none of SFC's reports provide any data for depths greater than 40-50 feet (paragraph 7(d)). Mr. Smith asserts in response that "The FEI and Addendum investigations showed that most of the contamination at the site was in the upper groundwater horizon (shallow shale/terrace) and generally lower levels of contamination occurred in the deeper sandstone/shale groundwater horizon (Attachments A-6 and A-7)." Accordingly, he states that "this information was sufficient to convince the investigators that the possibility of significant contamination in even lower zones was

unlikely and investigation to deeper zones was unnecessary", (Smith Affidavit paragraph 13). However, Mr. Smith's assertions are directly contradicted by SFC's own documents. First, contrary to Mr. Smith's statement, Figure 78 (Smith Attachment A-7), of the FEI shows high levels of uranium (i.e., greater than 10,000 ug/l) in the deep sandstone/shale unit, including a plume in the northwest area of the site which does not appear in the plume map for the hydrologic unit above (Figure 77, Smith Attachment A-6). Moreover, it can be seen from Mr. Smith's Attachments A-2 and A-4 that soil uranium concentrations diminish with depth. Yet, very high contaminant levels are seen in the upper bedrock immediately below the soil. If the investigators had assumed no contamination below the soil horizon, based on this apparent trend, then they would never have measured the contamination which exists in the bedrock. But there is also evidence that contamination with the bedrock does not diminish with depth. For example, examination of Table 29 of the FEI (Attachment 3) shows lithological boring analyses which do not support the conclusion that contamination diminishes with depth. Hole BH-12A shows constant high levels of nitrate and uranium down to 32 ft. BH-26A shows high nitrate and uranium levels to 35 ft with uranium values increasing with depth. Boring BH-43A indicates that the highest nitrate values were found at the bottom near 38 ft. BH-71A shows its second highest fluoride and nitrate analysis at the base near 28 ft. BH-76A has its highest nitrate level at its base near 44 ft. BH-81A has this same feature as does BH-82A and 83A, which reaches 52 ft. depth. More such data could be cited. In short, data from the FEI does not support the contention that contamination has not reached deeper levels than SFC has examined.

10) In my previous affidavit at paragraph 7(d), I stated that a 400-foot well in the processing area was a potential conduit for groundwater contamination to reach deeper levels. Mr. Smith responds that this well "appeared to be properly drilled, completed, and plugged, and it was concluded that it could not have been a conduit for contaminants to migrate into deeper zones" (paragraph 14). However, he presents no details or references regarding the completion and plugging of the well, or any explanation of how it was concluded that it could not be a conduit to deeper levels.

11) Mr. Smith claims that SFC did conduct water testing at depths below 40-50 feet, and cites an area-wide "groundwater quality survey" conducted in May of 1991 (paragraph 15). However, none of the wells in question were documented in the FEI as having been designed or approved to be used as water quality monitoring wells by the NRC or the state of Oklahoma. There are no well logs, nor is there sufficient completion information to judge the quality of information obtained in this landowner-requested analysis (see FEI at page 187). Thus, this survey data does not provide reliable evidence from which to draw conclusions about groundwater movement or quality.

12) In paragraph 4 of his Affidavit, Mr. Schlag concedes that SFC's raffinate exceeds EPA Drinking Water Regulations (Maximum Contaminant Levels, or MCL's) for cadmium and nitrate. In addition, these MCL's are exceeded in surface water and groundwater. Specifically:

a) From the 1989 Completion Report for cadmium:

on 6/89 well RHMW-3 recorded 0.01 mg/L
on 8/89 surface water location FP-2 recorded 0.02 mg/L.

The EPA MCL for cadmium is 0.005 mg/L (Phase II Regulations, promulgated 1-30-91 and 7-1-91), not 0.01 mg/l as stated by Mr. Schlag.

b) From the <u>1989 Completion Report</u> for nitrate (MCL: 10 mg/L):

on 4/89 - surface water # FP-2 showed 10.4 mg/L
on 4/89 - surface water # FP-3 showed 14.5 mg/L.

Mr. Schlag also acknowledged that gross alpha has exceeded the MCL (paragraph 6).

13) From the <u>1989 Completion Report</u> for uranium (MCL: 0.02 mg/L):

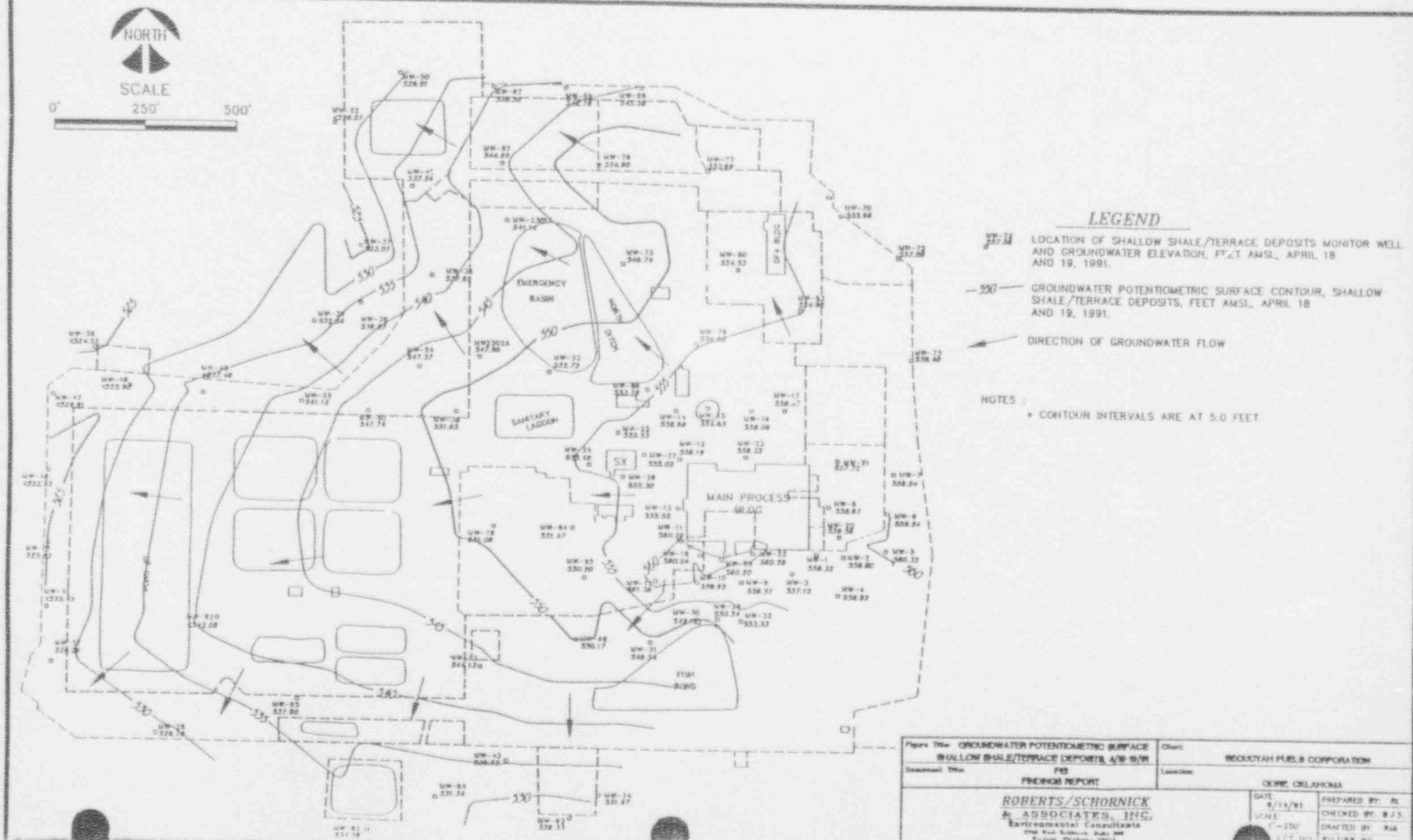
on 10/89 - well RHMW-6 showed 0.013 mg/l

This data was mistakenly identified as above the MCL in my affidavit while the <u>1989 Completion Report</u> shows that it is in fact 65% of the EPA standard.

14) In paragraph 6 of his Affidavit Mr Schlag states that comparison of groundwater contaminant levels with the Drinking Water Standard is irrelevant since "the water in this area is not a useful drinking water supply". I disagree. The fact that the surface and upper groundwater in this area exceeds EPA's MCL's indicates the presence of significant contamination in the groundwater. Whether or not it is currently used as drinking water, this water will likely impact Mr. Henshaw's potential water supply and deeper groundwater zones as it percolates deeper, reaching the lower zones and mixing with clean water. Thus, the presence of significant levels of contaminants in the surface and upper groundwater provides a reliable indicator that Mr. Henshaw's property will likely be affected by the surrounding spreading of the raffinate "fertilizer".

Date: 1/20/94 ______________________
Timothy P. B[illegible]

SHERRIE A. HARRINGTON
NOTARY PUBLIC—MINNESOTA
DAKOTA COUNTY
My Commission Expires Feb. 21, 1997


NORTH
SCALE
0'
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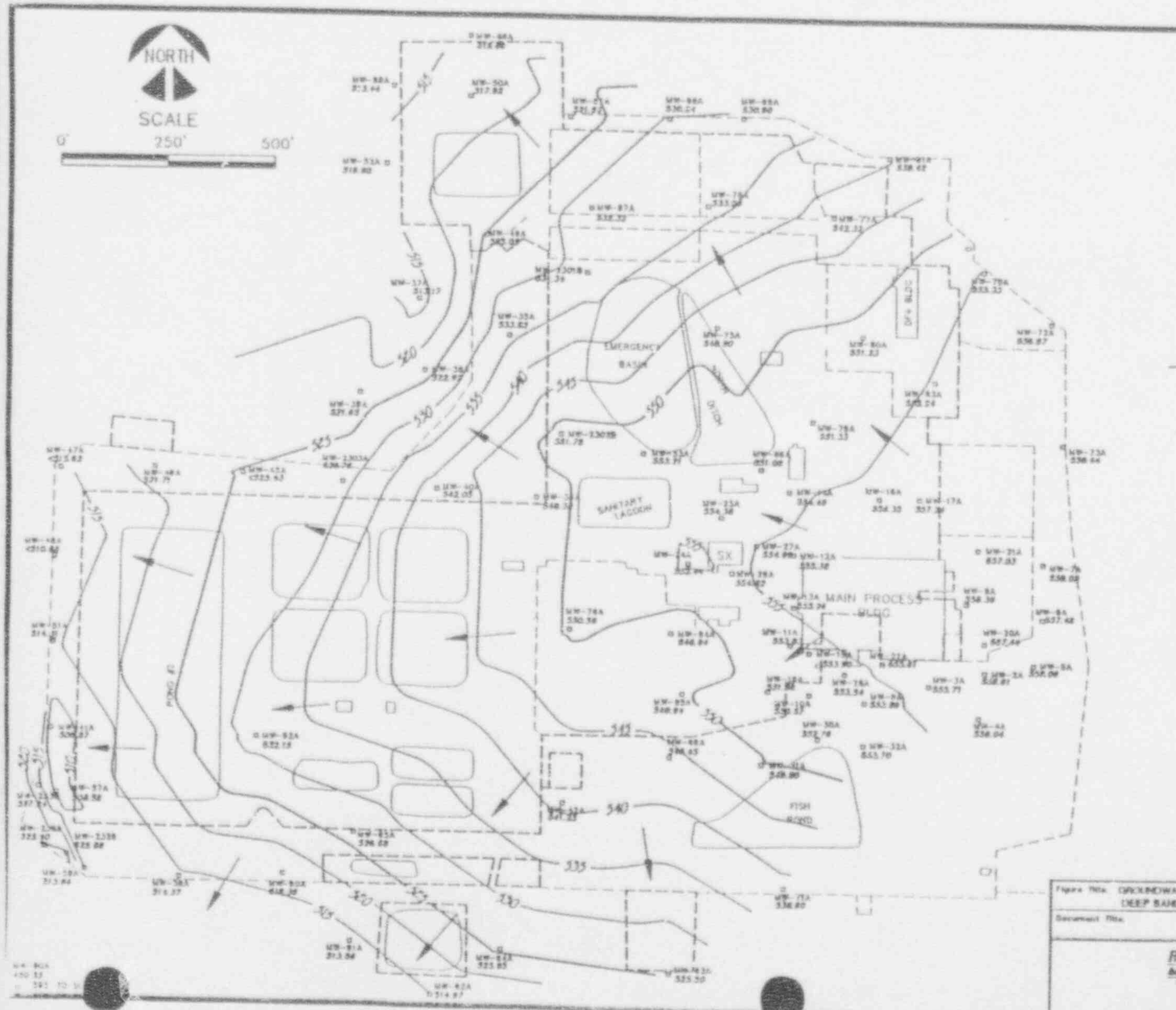
EMERGENCY BASIN
NORTH DITCH
SANITARY LAGOON
SX
MAIN PROCESS BLDG
FISH POND
LEGEND
LOCATION OF SHALLOW SHALE/TERRACE DEPOSITS MONITOR WELL AND GROUNDWATER ELEVATION, FEET AMSL, APRIL 18 AND 19, 1991.
550 GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR, SHALLOW SHALE/TERRACE DEPOSITS, FEET AMSL, APRIL 18 AND 19, 1991.
DIRECTION OF GROUNDWATER FLOW
NOTES :
• CONTOUR INTERVALS ARE AT 5.0 FEET.
Figure Title: GROUNDWATER POTENTIOMETRIC SURFACE SHALLOW SHALE/TERRACE DEPOSITS, 4/18-19/91
Document Title: FIS FINDINGS REPORT
Client: SEQUOYAH FUELS CORPORATION
Location: GORE, OKLAHOMA
ROBERTS/SCHORNICK & ASSOCIATES, INC.
Environmental Consultants
DATE 8/14/91
SCALE 1"=250'
PREPARED BY: RL
CHECKED BY: BJS
DRAFTED BY:
FIGURE NO.

ATTACHMENT 2



LEGEND

- LOCATION OF DEEP SANDSTONE/SHALE MONITOR WELL AND GROUNDWATER ELEVATION, FEET AMSL, APRIL 18 AND 19, 1991
- GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR, DEEP SANDSTONE/SHALE UNIT, FEET AMSL, APRIL 18 AND 19, 1991
- DIRECTION OF GROUNDWATER FLOW

NOTE

- CONTOURS INTERVALS ARE AT 5.0 FEET

Figure Title: GROUNDWATER POTENTIOMETRIC SURFACE DEEP SANDSTONE/SHALE, 4/18-19/91	Client: SEQUOYAH FUELS CORPORATION
Document Title: FEI FINDINGS REPORT	Location: GORE, OKLAHOMA

ROBERTS/SCHORNICK & ASSOCIATES, INC.
Environmental Consultants

DATE 8/14/91	PREPARED BY RL
SCALE 1"=250'	CHECKED BY BJS
	DRAFTED BY RWL
PROJECT NO. 87-101	FIGURE NO. 73

TABLE 29: SOIL ANALYTICAL DATA FROM DRILLED BOREHOLES
UNIT AND GROUNDWATER INVESTIGATIONS
SEQUOYAH FUELS CORPORATION

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
BH-1	S-1	0.0 - 0.5	9/24/90	16.3	NA	NA
(MW-1)	S-2	0.5 - 1.0		29.4	NA	NA
	S-3	1.0 - 1.5		8.9	NA	NA
	S-4	1.5 - 2.0		6.7	NA	NA
	S-5	2.0 - 2.5		<5.0	NA	NA
	---	2.5 - 5.0		NR	NA	NA
	S-6	5.0 - 5.5		<5.0	NA	NA
	S-7	5.5 - 6.0		<5.0	NA	NA
	S-8	6.0 - 6.5		<5.0	NA	NA
	S-9	6.5 - 7.0		<5.0	NA	NA
	S-10	7.0 - 7.8		6.8	NA	NA
	---	7.8 - 10.0		NR	NA	NA
	S-11	10.0 - 10.5		5.3	NA	NA
	S-12	10.5 - 11.0		<5.0	NA	NA
	S-13	11.0 - 11.5		<5.0	NA	NA
	S-14	11.5 - 12.0		<5.0	NA	NA
	S-15	12.0 - 12.5		<5.0	NA	NA
	S-16	12.5 - 13.0		<5.0	NA	NA
	S-17	13.0 - 13.5		<5.0	NA	NA
	S-18	13.5 - 14.0		<5.0	NA	NA
	---	14.0 - 15.0		NR	NA	NA
	S-19	15.0 - 15.5		<5.0	NA	NA
	S-20	15.5 - 16.0		<5.0	NA	NA
	S-21	16.0 - 16.5		<5.0	NA	NA
	S-22	16.5 - 17.0		<5.0	NA	NA
	S-23	17.0 - 17.7		<5.0	NA	NA
				82.7% RECOVERY	NA	NA
BH-2	S-1	0.0 - 0.5	9/24/90	14.1	NA	NA
(MW-8)	---	0.5 - 5.0		NR	NA	NA
	S-2	5.0 - 5.5		<5.0	NA	NA
	S-3	5.5 - 6.0		<5.0	NA	NA
	S-4	6.0 - 6.5		<5.0	NA	NA
	S-5	6.5 - 7.0		<5.0	NA	NA
	S-6	7.0 - 7.5		<5.0	NA	NA
	S-7	7.5 - 8.0		<5.0	NA	NA
	S-8	8.0 - 8.5		<5.0	NA	NA
	S-9	8.5 - 9.0		<5.0	NA	NA
	S-10	9.0 - 9.2		<5.0	NA	NA
	S-10, DUP	9.0 - 9.2		<5.0	NA	NA
	---	9.2 - 10.0		NR	NA	NA
	S-11	10.0 - 10.5		<5.0	NA	NA
	S-12	10.5 - 11.0		<5.0	NA	NA
	S-13	11.0 - 11.5		<5.0	NA	NA
	S-14	11.5 - 12.0		<5.0	NA	NA
	S-15	12.0 - 12.5		11.1	NA	NA

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
	S-11	9.5 - 10.0		<5.0	535.0	6.1
	---	10.0 - 15.0		NR	NA	NA
	S-13	15.0 - 15.5		<5.0	511.0	5.3
	S-14	15.5 - 16.0		<5.0	NA	6.4
	S-15	16.0 - 16.5		<5.0	537.0	6.3
	S-16 SPIKE	16.5 - 17.0		<5.0	NA	6.4
				96.9% RECOVERY		
BH-12A (MW-23A)	S-1	20.0 - 22.0	11-08-90	91.0	298.0	466.0
	S-2	22.0 - 24.0		33.0	249.0	489.0
	S-3	24.0 - 26.0		151.0	237.0	448.0
	S-4	26.0 - 28.0		72.0	171.0	363.0
	S-5	28.0 - 30.0		196.0	264.0	565.0
	S-6	30.0 - 32.0		29.0	145.0	497.0
BH-13 (MW-20)	---	0.0 - 0.3	10/2/90	NR		
	S-1	0.3 - 0.5		<5.0	291.0	51.9
	S-2	0.5 - 1.0		17.0	246.0	44.4
	S-3	1.0 - 1.8		6.4	NA	104.4
	---	1.8 - 5.0		NR	NA	NA
	S-4	5.0 - 5.5		<5.0	NA	82.0
	S-5	5.5 - 6.0		<5.0	240.0	39.6
	S-6	6.0 - 6.5		<5.0	NA	16.3
	S-7	6.5 - 7.0		<5.0	432.0	4.5
	S-8	7.0 - 7.5		<5.0	NA	0.5
	S-9	7.5 - 8.0		<5.0	581.0	1.0
	S-10	8.0 - 8.5		<5.0	NA	1.7
	S-11	8.5 - 9.0		<5.0	464.0	2.2
	S-12	9.0 - 10.0		NR	NA	NA
	S-13	10.0 - 10.5		<5.0	486.0	2.2
	S-14	10.5 - 11.0		<5.0	NA	3.0
	S-15	11.0 - 11.5		<5.0	546.0	4.3
	S-16	11.5 - 12.0		<5.0	NA	4.3
	S-17	12.0 - 12.5		<5.0	552.0	6.0
	S-18	12.5 - 13.0		<5.0	NA	5.7
	S-19	13.0 - 13.5		<5.0	622.0	8.0
				86.4% RECOVERY		
BH-13A (MW-20A)	S-1	18.7 - 20.0	10/7/90	<5.0	NA	NA
	S-2	20.0 - 22.0		<5.0	NA	NA
	S-3	22.0 - 24.0		<5.0	NA	NA
	S-4	24.0 - 26.0		<5.0	NA	NA
	S-5	26.0 - 27.0		<5.0	NA	NA
	S-6	27.0 - 29.0		<5.0	NA	NA
	S-7	29.0 - 31.0		<5.0	NA	NA
	S-8	31.0 - 33.0		<5.0	NA	NA

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
(MW-24)	S-2	0.5 - 1.0		6.9	NA	NA
	S-3	1.0 - 1.5		<5.0	NA	NA
	S-4	1.5 - 2.0		<5.0	NA	NA
	---	2.0 - 5.0		NR	NA	NA
	S-5	5.0 - 5.5		5.7	NA	NA
	S-6	5.5 - 6.0		<5.0	NA	NA
	S-7	6.0 - 6.5		<5.0	NA	NA
	S-8	6.5 - 7.0		8.6	NA	NA
	---	7.0 - 10.0		NR	NA	NA
	S-9	10.0 - 10.5		<5.0	NA	NA
	S-10	10.5 - 11.0		<5.0	NA	NA
	S-11	11.0 - 11.5		<5.0	NA	NA
	S-12	11.5 - 12.0		<5.0	NA	NA
	S-13	12.0 - 12.5		<5.0	NA	NA
	S-14	12.5 - 13.0		<5.0	NA	NA
	S-15	13.0 - 13.5		<5.0	NA	NA
	S-16	13.5 - 14.0		<5.0	NA	NA
	S-17	14.0 - 14.5		<5.0	NA	NA
	S-18	14.5 - 15.0		<5.0	NA	NA
	S-19	15.0 - 15.5		<5.0	NA	NA
	S-20	15.5 - 16.0		<5.0	NA	NA
	S-21	16.0 - 16.5		<5.0	NA	NA
	S-22	16.5 - 17.0		<5.0	NA	NA
	S-23	17.0 - 17.5		<5.0	NA	NA
	S-24	17.5 - 18.0		<5.0	NA	NA
				83% RECOVERY		
BH-26A (MW-24A)	S-1	26.0 - 28.0	11-07-90	<5.0	442.0	52.1
	S-2	28.0 - 30.0		<5.0	322.0	25.3
	S-3	30.0 - 32.0		17.0	372.0	206.0
	S-4	32.0 - 34.0		14.0	353.0	158.0
	S-5	34.0 - 35.5		19.0	405.0	179.0
BH-27 (MW-25)	S-1	0.0 - 0.5	10/3/90	1211	438.0	21.8
	S-2	0.5 - 1.0		4503	NA	22.1
	---	1.0 - 5.0		NR	NA	NA
	S-3	5.0 - 5.5		7940	472.0	696.0
	S-4	5.5 - 6.0		6621	NA	867.0
	S-5	6.0 - 6.5		3800	455.0	677.0
	S-6	6.5 - 7.0		2545	NA	664.0
	S-7	7.0 - 7.5		2100	504.0	471.0
	S-8	7.5 - 8.0		828	NA	377.0
	---	8.0 - 10.0		NR	NA	NA
	S-9	10.0 - 10.5		54.0	592.0	42.0
	S-10	10.5 - 11.0		11.0	NA	35.0
	S-11	11.0 - 11.5		8.3	550.0	150.0
	S-12	11.5 - 12.0		7.0	NA	143.0

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
	S-5	2.0 - 2.5		22.0	88 88.0	11.8
	S-6	2.5 - 2.95		NA	NA	NA
	S-7	5.0 - 5.5		<5.0	882.2	5.2
	S-8	5.5 - 6.0		NA	NA	NA
	S-9	6.0 - 6.5		<5.0	535.1	6.9
	S-10	6.5 - 7.0		NA	NA	NA
	S-11	7.0 - 7.25		<5.0	636.2	7.5
BH-43A (MW-38A)	S-1	8.3 - 10.0	11-02-90	<5.0	355.0	81.2
	S-2	10.0 - 12.0		NA	NA	NA
	S-3	12.0 - 14.0		<5.0	262.0	21.3
	S-4	14.0 - 16.0		NA	NA	NA
	S-5	16.0 - 18.0		<5.0	276.0	28.8
	S-6	18.0 - 20.0		NA	NA	NA
	S-7	20.0 - 22.0		<5.0	320.0	41.0
	S-8	22.0 - 24.0		NA	NA	NA
	S-9	24.0 - 26.0		<5.0	456.0	52.2
	S-10	26.0 - 28.0		NA	NA	NA
	S-11	28.0 - 30.0		<5.0	317.0	69.7
	S-12	30.0 - 32.0		NA	NA	NA
	S-13	32.0 - 34.0		<5.0	350.0	74.5
	S-14	34.0 - 36.0		NA	NA	NA
	S-15	36.0 - 38.0		<5.0	424.0	102.0
	S-16	38.0 - 40.0		NA	NA	NA
BH-44 (MW-34T)	S-1	0.0 - 0.5	10-30-90	<5.0	377.0	11.4
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1.5		<5.0	372.7	2.6
	S-4	5.0 - 5.5		NA	NA	NA
	S-5	5.5 - 6.0		<5.0	333.4	6.0
	S-6	6.0 - 6.5		NA	NA	NA
	S-7	6.5 - 7.0		<5.0	464.1	4.4
	S-8	7.0 - 7.5		NA	NA	NA
	S-9	7.5 - 8.0		<5.0	595.9	6.0
	S-10	8.0 - 8.5		NA	NA	NA
	S-11	10.0 - 10.5		<5.0	237.9	9.3
BH-45 (MW-39)	S-1	0.0 - 0.5	10-31-90	19.0	308.3	31.9
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1.5		<5.0	373.1	23.4
	S-4	1.5 - 2.0		NA	NA	NA
	S-5	2.0 - 2.5		<5.0	409.7	8.2
	S-6	2.5 - 3.0		NA	NA	NA
	S-7	3.0 - 3.7		<5.0	544.3	2.3
BH-45A (MW-39A)	S-1	9.0 - 10.0	11-02-90	<5.0	206.0	9.8
	S-2	10.0 - 12.0		NA	NA	NA

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
BH-70 (MW-61)	S-1	0.0 - 0.5	12-04-90	<5.0	128.0	5.2
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1 3		<5.0	280.0	5.2
BH-70A (MW-61A)	S-1	6.0 - 8.0	12-11-90	<5.0	364.0	7.1
	S-2	8.0 - 10.0		<5.0	400.0	8.5
	S-3	10.0 - 12.0		<5.0	455.0	8.8
	S-4	12.0 - 14.0		<5.0	425.0	10.1
	S-5	14.0 - 16.0		<5.0	312.0	19.2
	S-6	16.0 - 18.0		<5.0	323.0	26.0
	S-7	18.0 - 20.0		<5.0	630.0	65.1
	S-8	20.0 - 21.0		<5.0	666.0	163.2
BH-71 (MW-62)	S-1	0.0 - 0 5	12-05-90	<5.0	215.0	7.0
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1.5		<5.0	129.0	23.5
	S-4	1.5 - 2.0		NA	NA	NA
	S-5	2.0 - 2 5		<5.0	340.0	16.8
	S-6	2.5 - 3.0		NA	NA	NA
	S-7	3.0 - 3.5		<5.0	152.0	11.5
	S-8	3.5 - 4.0		NA	NA	NA
	S-9	4.0 - 4.5		<5.0	161.0	9.9
	S-10	4.5 - 5.0		NA	NA	NA
	S-11	5.0 - 5.5		<5.0	239.0	9.6
	S-12	5.5 - 6.0		NA	NA	NA
	S-13	6.0 - 6.5		<5.0	332.0	12.4
	S-14	6.5 - 7.0		NA	NA	NA
BH-71A (MW-62A)	S-1	10.0 - 12.0	12-11-90	<5.0	422.0	105.3
	S-2	12.0 - 14.0		<5.0	425.0	65.0
	S-3	14.0 - 16.0		<5.0	447.0	42.8
	S-4	16.0 - 18.0		<5.0	355.0	91.0
	S-5	18.0 - 20.0		<5.0	617.0	103.6
	S-6	20.0 - 22.0		<5.0	425.0	201.1
	S-7	22.0 - 24.0		<5.0	537.0	301.7
	S-8	24.0 - 26.0		<5.0	485.0	212.6
	S-9	26.0 - 28.0		<5.0	607.0	213.2
BH-72 (MW-63)	S-1	1.0 - 1.5	12-05-90	35.0	4215.0	36.5
	S-2	1.5 - 2.0		NA	NA	NA
	S-3	2.0 - 2.5		54.0	380.0	19.4
	S-4	2.5 - 3.0		NA	NA	NA
	S-5	3.0 - 3.5		13.0	269.0	7.6
	S-6	4.0 - 4.5		NA	NA	NA
	S-7	4.5 - 5.0		<5.0	393.0	12.0
	S-8	5.0 - 5.5		NA	255.0	NA

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
BH-75A (MW-71A)	S-1	6.0 - 8.0	12-12-90	<5.0	746.0	100.3
	S-2	8.0 - 10.0		<5.0	635.0	50.4
	S-3	10.0 - 12.0		<5.0	226.0	56.0
	S-4	12.0 - 14.0		<5.0	434.0	110.9
	S-5	14.0 - 16.0		<5.0	287.0	63.9
	S-6	16.0 - 18.0		<5.0	501.0	105.4
	S-7	18.0 - 20.0		<5.0	370.0	132.5
	S-8	20.0 - 22.0		<5.0	494.0	132.1
	S-9	22.0 - 24.0		<5.0	408.0	117.3
	S-10	24.0 - 26.0		<5.0	591.0	245.4
	S-11	26.0 - 27.0		<5.0	624.0	115.4
BH-76 (MW-66)	S-1	0.0 - 0.5	12-07-90	7.8	224.0	5.1
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1.5		<5.0	267.0	8.3
	S-4	1.5 - 2.0		NA	NA	NA
	S-5	2.0 - 2.5		<5.0	336.0	8.8
	S-6	2.5 - 3.0		NA	NA	NA
	S-7	4.0 - 4.5		<5.0	703.0	6.5
	S-8	4.5 - 5.0		NA	NA	NA
	S-9	9.0 - 9.5		<5.0	839.0	12.4
	S-10	9.5 - 10.0		NA	NA	NA
	S-11	10.0 - 10.5		<5.0	512.0	16.3
	S-12	10.5 - 11.0		NA	NA	NA
	S-13	11.0 - 11.5		<5.0	472.0	21.9
	S-14	11.5 - 12.0		NA	NA	NA
	S-15	12.0 - 12.5		<5.0	641.0	21.3
	S-16	12.5 - 13.0		NA	NA	NA
	S-17	13.0 - 13.5		<5.0	589.0	15.9
	S-18	13.5 - 14.0		NA	NA	NA
	S-19	14.0 - 14.5		<5.0	631.0	23.3
	S-20	14.5 - 15.0		NA	NA	NA
	S-21	15.0 - 15.5		<5.0	449.0	18.7
	S-22	15.5 - 16.0		NA	NA	NA
	S-23	16.0 - 16.5		<5.0	595.0	16.6
	S-24	16.5 - 17.0		NA	NA	NA
	S-25	17.0 - 17.5		<5.0	611.0	15.9
	S-26	17.5 - 18.0		NA	NA	NA
BH-76A (MW-66A)	S-1	20.0 - 22.0	12-12-90	<5.0	481.0	12.8
	S-2	22.0 - 24.0		<5.0	746.0	17.2
	S-3	24.0 - 26.0		<5.0	363.0	29.5
	S-4	26.0 - 28.0		<5.0	353.0	56.9
	S-5	28.0 - 30.0		<5.0	342.0	50.8
	S-6	30.0 - 32.0		<5.0	308.0	55.5
	S-7	32.0 - 34.0		<5.0	384.0	74.3
	S-8	34.0 - 36.0		<5.0	368.0	76.5

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
	S-9	36.0 - 38.0		<5.0	289.0	62.5
	S-10	38.0 - 40.0		<5.0	431.0	137.3
	S-11	40.0 - 42.0		<5.0	529.0	148.4
	S-12	42.0 - 44.0		<5.0	722.0	156.9
BH-77 (MW-67)	S-1	1.0 - 1.5	12-07-90	<5.0	341.0	10.5
	S-2	1.5 - 2.0		NA	NA	NA
	S-3	2.0 - 2.5		<5.0	543.0	13.3
	S-4	2.5 - 3.0		NA	NA	NA
	S-5	3.0 - 3.5		<5.0	388.0	18.1
	S-6	3.5 - 4.0		NA	NA	NA
	S-7	4.0 - 4.5		<5.0	360.0	15.4
	S-8	4.5 - 5.0		NA	NA	NA
	S-9	5.0 - 5.5		<5.0	320.0	17.6
	S-10	5.5 - 6.0		NA	NA	NA
	S-11	6.0 - 6.5		<5.0	326.0	15.6
	S-12	6.5 - 7.0		NA	NA	NA
	S-13	7.0 - 7.5		<5.0	348.0	22.6
	S-14	7.5 - 8.0		NA	NA	NA
	S-15	8.0 - 8.5		<5.0	343.0	19.6
	S-16	8.5 - 9.0		NA	NA	NA
BH-77A (MW-67A)	S-1	12.0 - 14.0	01-11-91	<5.0	338.0	11.0
	S-2	14.0 - 16.0		<5.0	559.0	24.5
	S-3	16.0 - 18.0		<5.0	487.0	35.3
	S-4	18.0 - 20.0		<5.0	314.0	99.6
	S-5	20.0 - 22.0		<5.0	99.0	41.1
	S-6	22.0 - 34.0		<5.0	177.0	75.9
	S-7	24.0 - 26.0		<5.0	197.0	74.2
	S-8	26.0 - 28.0		<5.0	495.0	91.3
	S-9	28.0 - 30.0		<5.0	564.0	110.0
	S-10	30.0 - 32.0		<5.0	332.0	96.4
	S-11	32.0 - 34.0		<5.0	287.0	96.3
	S-12	34.0 - 36.0		<5.0	613.0	139.5
	S-13	36.0 - 38.0		<5.0	611.0	97.5
BH-78 (MW-68)	S-1	0.5 - 1.0	12-07-90	<5.0	510.0	68.5
	S-2	1.0 - 1.5		NA	NA	NA
	S-3	1.5 - 2.0		<5.0	194.0	17.0
	S-4	2.0 - 2.5		NA	NA	NA
	S-5	2.5 - 3.0		<5.0	119.0	14.1
	S-6	3.0 - 3.5		NA	NA	NA
	S-7	4.0 - 4.5		<5.0	204.0	16.7
	S-8	4.5 - 5.2		NA	NA	NA
BH-78A (MW-68A)	S-1	12.0 - 14.0	01-14-91	<5.0	330.0	3.1
	S-2	14.0 - 16.0		<5.0	495.0	5.5

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
	S-8	22.0 - 24.0		<5.0	432.0	110.0
	S-9	24.0 - 26.0		<5.0	284.0	77.5
	S-10	26.0 - 28.0		<5.0	381.0	78.0
	S-11	28.0 - 30.0		<5.0	295.0	88.0
BH-81 (MW-70)	S-1	0.0 - 0 5	12-10-90	5.6	736.0	55.5
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1.5		<5.0	795.0	28.8
	S-4	1.5 - 2.0		NA	NA	NA
	S-5	2.0 - 2 7		<5.0	798.0	14.3
	S-6	4.0 - 4.5		NA	NA	NA
	S-7	4.5 - 5.0		<5.0	691.0	10.2
	S-8	5.0 - 5.5		NA	NA	NA
	S-9	5.5 - 6.0		<5.0	806.0	5.8
	S-10	6.0 - 6.5		NA	NA	NA
	S-11	9.0 - 9.5		<5.0	1151.0	16.2
	S-12	9.5 - 10.0		NA	NA	NA
	S-13	10.0 - 10.5		<5.0	1266.0	17.9
	S-14	10.5 - 11.0		NA	NA	NA
BH-81A (MW-70A)	S-1	18.0 - 20.0	01-11-91	<5.0	324.0	33.4
	S-2	20.0 - 22.0		<5.0	466.0	10.8
	S-3	22.0 - 24.0		<5.0	808.0	10.2
	S-4	24.0 - 26.0		<5.0	801.0	19.9
	S-5	26.0 - 28.0		<5.0	368.0	63.1
	S-6	28.0 - 30.0		<5.0	331.0	53.2
	S-7	30.0 - 32.0		<5.0	323.0	60.9
	S-8	32.0 - 34.0		<5.0	329.0	120.4
	S-9	34.0 - 36.0		<5.0	483.0	64.5
	S-10	36.0 - 38.0		<5.0	319.0	63.8
	S-11	38.0 - 40.0		<5.0	414.0	89.6
	S-12	40.0 - 40.5		<5.0	562.0	153.2
BH-82 (MW-72)	S-1	0.0 - 0.5	12-10-90	12.0	599.0	89.1
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1.5		<5.0	160.0	17.6
	S-4	1.5 - 2.0		NA	NA	NA
	S-5	4.0 - 4.5		<5.0	174.0	4.8
	S-6	4.5 - 5.0		NA	NA	NA
	S-7	5.0 - 5.5		<5.0	357.0	9.1
	S-8	5.5 - 6.0		NA	NA	NA
	S-9	6.0 - 6.5		<5.0	376.0	9.5
	S-10	9.0 - 9.5		NA	NA	NA
	S-11	9.5 - 10.0		<5.0	647.0	6.5
	S-12	10.0 - 10.5		NA	NA	NA
	S-13	10.5 - 11.0		<5.0	525.0	14.5
	S-14	11.0 - 11.5		NA	NA	NA

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
	S-15	11.5 - 12.0		<5.0	427.0	7.4
	S-16	12.0 - 12.5		NA	NA	NA
	S-17	12.5 - 13.0		<5.0	600.0	7.0
	S-18	13.0 - 13.5		NA	NA	NA
	S-19	13.5 - 14.0		<5.0	477.0	10.7
	S-20	14.0 - 14.5		NA	NA	NA
	S-21	14.5 - 15.0		<5.0	617.0	21.0
	S-22	15.0 - 15.5		NA	NA	NA
	S-23	15.5 - 16.0		<5.0	588.0	10.0
	S-24	16.0 - 16.5		NA	NA	NA
	S-25	16.5 - 17.0		<5.0	657.0	13.3
	S-26	17.0 - 17.5		NA	NA	NA
	S-27	17.5 - 18.0		<5.0	758.0	12.7
	S-28	19.0 - 19.5		NA	NA	NA
	S-29	19.5 - 20.0		<5.0	531.0	12.5
	S-30	20.0 - 20.5		NA	NA	NA
BH-82A (MW-72A)	S-1	22.0 - 24.0	01-14-91	<5.0	372.0	53.5
	S-2	24.0 - 26.0		<5.0	443.0	57.0
	S-3	26.0 - 28.0		<5.0	578.0	48.3
	S-4	28.0 - 30.0		<5.0	413.0	54.5
	S-5	30.0 - 32.0		<5.0	361.0	57.2
	S-6	32.0 - 34.0		<5.0	445.0	59.9
	S-7	34.0 - 36.0		<5.0	281.0	54.2
	S-8	36.0 - 38.0		<5.0	336.0	111.5
	S-9	38.0 - 40.0		<5.0	310.0	71.5
	S-10	40.0 - 42.0		<5.0	340.0	84.8
	S-11	42.0 - 44.0		<5.0	313.0	71.8
	S-12	44.0 - 46.0		<5.0	489.0	126.43
	S-13	46.0 - 48.0		<5.0	627.0	156.88
BH-83 (MW-73)	S-1	0.0 - 0.5	12-10-90	5.9	154.0	62.5
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1.5		<5.0	118.0	6.4
	S-4	1.5 - 2.0		NA	NA	NA
	S-5	2.0 - 2.5		<5.0	342.0	6.6
	S-6	2.5 - 3.0		NA	NA	NA
	S-7	3.0 - 3.7		<5.0	296.0	15.5
	S-8	4.0 - 4.5		NA	NA	NA
	S-9	4.5 - 5.0		<5.0	228.0	12.0
	S-10	5.0 - 5.5		NA	NA	NA
	S-11	5.5 - 6.0		<5.0	218.0	11.2
	S-12	6.0 - 6.5		NA	NA	NA
	S-13	6.5 - 7.0		<5.0	265.0	8.2
	S-14	7.0 - 7.5		NA	NA	NA
	S-15	9.0 - 9.5		<5.0	523.0	19.0
	S-16	9.5 - 10.0		NA	NA	NA

TABLE 29: CONTINUED

SAMPLE LOCATION	SAMPLE NUMBER	*DEPTH INTERVAL FEET	DATE SAMPLED	URANIUM UG/G	FLUORIDE UG/G	NITRATE UG/G
	S-17	10.0 - 10.5		<5.0	402.0	11.9
	S-18	10.5 - 11.0		NA	NA	NA
	S-19	11.0 - 11.5		<5.0	401.0	7.1
	S-20	11.5 - 12.0		NA	NA	NA
	S-21	12.0 - 12.5		<5.0	396.0	8.6
	S-22	12.5 - 12.8		NA	NA	NA
	S-23	14.0 - 14.5		<5.0	539.0	20.8
	S-24	14.5 - 15.0		NA	NA	NA
	S-25	15.0 - 15.5		<5.0	402.0	20.2
	S-26	15.5 - 16.0		NA	NA	NA
	S-27	16.0 - 16.7		<5.0	572.0	9.3
	S-28	19.0 - 19.5		NA	NA	NA
	S-29	19.5 - 20.0		<5.0	540.0	14.8
	S-30	20.0 - 20.5		NA	NA	NA
	S-31	20.5 - 21.0		<5.0	558.0	14.6
	S-32	21.0 - 21.5		NA	NA	NA
	S-33	21.5 - 22.0		<5.0	523.0	8.8
	S-34	22.0 - 22.5		NA	NA	NA
	S-35	22.5 - 23.0		<5.0	508.0	13.7
	S-36	24.0 - 24.5		NA	NA	NA
	S-37	24.5 - 25.0		<5.0	652.0	15.8
	S-38	25.0 - 25.5		NA	NA	NA
	S-39	25.5 - 26.0		<5.0	527.0	46.9
	S-40	26.0 - 26.5		NA	NA	NA
	S-41	26.5 - 27.0		<5.0	538.0	18.0
BH-83A (MW-73A)	S-1	32.0 - 34.0	01-16-91	<5.0	259.0	62.6
	S-2	34.0 - 36.0		<5.0	244.0	66.0
	S-3	36.0 - 38.0		<5.0	404.0	58.7
	S-4	38.0 - 40.0		<5.0	195.0	53.5
	S-5	40.0 - 42.0		<5.0	199.0	54.2
	S-6	42.0 - 44.0		<5.0	306.0	98.0
	S-7	44.0 - 46.0		<5.0	332.0	81.9
	S-8	46.0 - 48.0		<5.0	327.0	76.7
	S-9	48.0 - 50.0		<5.0	331.0	104.3
	S-10	50.0 - 52.0		<5.0	470.0	110.4
BH-84 (MW-74)	S-1	0.0 - 0.5	12-11-90	5.4	171.0	10.1
	S-2	0.5 - 1.0		NA	NA	NA
	S-3	1.0 - 1.5		97.0	189.0	65.2
	S-4	1.5 - 2.0		NA	NA	NA
	S-5	2.0 - 2.5		182.0	278.0	729.9
	S-6	2.5 - 3.0		NA	NA	NA
	S-7	3.0 - 3.5		<5.0	219.0	42.2
BH-85 (MW-75)	S-1	0.0 - 0.5	12-12-90	650.0	192.0	22
	S-2	0.5 - 1.0		NA	NA	NA

CERTIFICATE OF SERVICE

I certify that on December 30, 1993, copies of the foregoing REPLY AFFIDAVIT OF TIMOTHY P. BROWN were served by first-class mail or as otherwise indicated below on the following:

Office of Commission Appellate Adjudication
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge James P. Gleason
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge G. Paul Bollwerk
Atomic Safety and Licensing Board
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