UNITED NUCLEAR CORPORATION

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40-4492

August 28, 2000

Dwight Chamberlain, Chief
U.S. Nuclear Regulatory Commission, Region IV
Division of Radiation Safety and Safeguards
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4351

Re: Semi Annual Effluent and Environmental Monitoring
Reports from January to June, 2000

Dear Mr. Chamberlain:

In compliance with our Nuclear Regulatory Materials License No. SUA-1475, Amendment No. 30, conditions Nos. 12 and 30; the attached Effluent and Environmental Monitoring Reports are described and presented as listed below. This applicable and available data will specify the concentration of each principal radionuclide released to unrestricted areas in air particulate and water effluent during the period of January 1, 2000 through June 30, 2000. This data is also reported on the format required in Regulatory Guide 4.14.

Available monitoring data in this report are in the order listed below:

- Environmental Inspection Reports (continued this procedure to show and maintain the integrity of the restricted tailings area).
- Ground Water Results (available data on GW- 3 well).
- Sample Location Maps

Other pertinent monitoring data if available under a Radiation Work Permit (RWP):

- Air Particulate Results
- TLD Gamma Results

Presently, no RWP was issued during this semi-annual monitoring period, thus the above items were not monitored and presented. Additionally, our active radiation monitoring instruments are routinely calibrated and the radiation monitoring program is still in effect and on a stand by status awaiting the final pond closure reclamation activity.

Sincerely,

Max Chischilly Jr.

Max Chischilly, Jr.
Radiation Safety Officer

cc: Ken Hooks, NRC
Steve Cline, GE
Roy Blickwedel, GE

ENVIRONMENTAL INSPECTION REPORTS

ENVIRONMENTAL INSPECTION

DATE: 1-24-00 TIME START: 0900

INSPECTOR: M. Chadilly J. TIME END: 1000

TAILINGS AREA:	OKAY		PROBLEM	COMMENTS
1. Fences	✓			
2. Air Monitors	—	NA	—	DELETED
3. Radiation Warning Signs	✓			
4. Locked Gates	✓			

ACTION TAKEN:

ENVIRONMENTAL INSPECTION

DATE: 2-28-00 TIME START: 1005

INSPECTOR: Max Chischilly Jr. TIME END: 1100

TAILINGS AREA:	OKAY		PROBLEM	COMMENTS
1. Fences	✓			
2. Air Monitors	—	NA	—	deleted
3. Radiation Warning Signs	✓			
4. Locked Gates	✓			

ACTION TAKEN:

ENVIRONMENTAL INSPECTION

DATE: 3-24-00 TIME START: 1000

INSPECTOR: M. Chischilly Jr. TIME END: 1055

TAILINGS AREA:	OKAY	PROBLEM	COMMENTS
1. Fences	✓		
2. Air Monitors	— NA	—	DELETED ITEM
3. Radiation Warning Signs	✓		
4. Locked Gates	✓		

ACTION TAKEN:

ENVIRONMENTAL INSPECTION

DATE: 4-28-00 TIME START: 1440

INSPECTOR: M. Chinchilly Jr. TIME END: 1530

TAILINGS AREA:	OKAY	PROBLEM	COMMENTS
1. Fences	✓		
2. Air Monitors	— NA	—	DELETED
3. Radiation Warning Signs	✓		
4. Locked Gates	✓		

ACTION TAKEN:

ENVIRONMENTAL INSPECTION

DATE: 5-30-00 TIME START: 1015

INSPECTOR: Max Chuchilly Jr. TIME END: 1130

TAILINGS AREA:	OKAY		PROBLEM	COMMENTS
1. Fences	✓			
2. Air Monitors	—	NA	—	DELETED
3. Radiation Warning Signs	✓			
4. Locked Gates	✓			

ACTION TAKEN:

ENVIRONMENTAL INSPECTION

DATE: 6-27-00 TIME START: 0930

INSPECTOR: May Churchilly Jr. TIME END: 1030

TAILINGS AREA:	OKAY	PROBLEM	COMMENTS
1. Fences	✓		
2. Air Monitors	— NA	—	DELETED
3. Radiation Warning Signs	✓		
4. Locked Gates	✓		

ACTION TAKEN:

GROUNDWATER RESULTS

QUARTERLY LIQUID SAMPLES

Date/Qr.	Location	Type	Radionuclide	Concentration Mg/l	Concentration uci/ml	Error Est. uci/ml	LLD uci/ml
1-4-00	GW-3	Ground	U-Nat(dissolved)		$3.47E^{-8}$		$2.0E^{-10}$
1st Qr.		Waterwell					
			Th-230(dissolved)		$<2.00E^{-10}$		$2.0E^{-10}$
			Ra-226(dissolved)		$5.00E^{-10}$	$3.00E^{-10}$	$2.0E^{-10}$
			Pb-210(dissolved)		$< 1.00E^{-9}$		$1.0E^{-9}$
			PO-210(dissolved)		$<1.00E^{-9}$		$1.0E^{-9}$

UNC Field Data: PH(STD. Units) = 6.6

Cond.(U MHOS) = 4,840

Water Depth (Ft.) = 51.4

Temp. (°C) = 13.8

COMMENTS:

QUARTERLY LIQUID SAMPLES

Date/Qr.	Location	Type	Radionuclide	Concentration Mg/l	Concentration uci/ml	Error Est. uci/ml	LLD uci/ml
5-15-00	GW-3	Ground	U-Nat(dissolved) or total		$3.85E^{-8}$		$2.0E^{-10}$
2nd Qr.		Waterwell					
			Th-230(dissolved) or total		$< 2.00E^{-10}$		$2.0E^{-10}$
			Ra-226(dissolved) or total		$< 2.00E^{-10}$		$2.0E^{-10}$
			Pb-210(dissolved) or total		$< 1.00E^{-9}$		$1.0E^{-9}$
			PO-210(dissolved) or total		$< 1.00E^{-9}$		$1.0E^{-9}$

UNC Field Data: PH(STD. Units) = 6.57

Cond.(U MHOS) = 4,810

Water Depth (Ft.) = 52.0

Temp. (°C) = 16.1

COMMENTS:

ENERGY LABORATORIES
Billings • Casper • Gillette
Helena • Rapid City

ENERGY LABORATORIES, INC.

SHIPPING: 2393 SALT CREEK HIGHWAY • CASPER, WY 82601
MAILING: P.O. BOX 3258 • CASPER, WY 82602
E-mail: energy@trib.com • FAX: (307) 234-1639
PHONE: (307) 235-0515 • TOLL FREE: (888) 235-0515

UNC MINING AND MILLING: CHURCHROCK OPERATIONS
GROUNDWATER MONITORING PROGRAM: SOUTHWEST ALLUVIUM MONITOR WELLS

WELL ID:	GW-3	GW-3	GW-3	GW-3
LABORATORY ID:	99-35515	99-33595-007	30143-7	00-32838-1
SAMPLE DATE/TIME:	07-13-99	10-05-99 @ 12:05	01-04-00 @ 14:25	05/15/00 00:00
DATE RECEIVED:				05/18/2000
REPORT DATE:	August 17, 1999	November 16, 1999	February 22, 2000	June 20, 2000
QUARTER REPRESENTED:	Third '99	Fourth '99	First 2000	Second 2000
UNC SUBMITTAL #:	TE-5-7-99	TE-7-10-99	TE-1-1-2000	TE 5-5-2000

Major Ions	Method	Units	Reporting Limit	Results	Results	Results	Results
Calcium	EPA 200.7	mg/L	0.05	824	702	760	755
Magnesium	EPA 200.7	mg/L	0.01	259	219	239	241
Sodium	EPA 200.7	mg/L	0.05	205	217	169	211
Potassium	EPA 200.7	mg/L	0.10	12.3	7.5	9.2	8.0
Bicarbonate	SM 2320-B	mg/L	0.10	1170	1170	1170	1174
Sulfate	EPA 200.7	mg/L	1.0	1830	1680	1760	1830
Chloride	EPA 200.7	mg/L	1.0	126	123	106	127
Ammonium as N	SM4500 NH3-G	mg/L	0.05	0.09	14.8	< 0.05	0.15
Nitrate + Nitrite as N	EPA 353.2	mg/L	0.10	119	99.0	113	119
Non-Metals							
Total Dissolved Solids	SM 2540-C	mg/L	1.0	4610	4660	4680	4780
pH	SM 4500-H-B	std. units	0.10	7.90	7.34	7.83	7.71
Trace Metals							
Aluminum	EPA 200.8	mg/L	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arsenic III	SM 3114C	mg/L	0.001	< 0.001	< 0.001	< 0.001	0.001
Beryllium	EPA 200.8	mg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cadmium	EPA 200.8	mg/L	0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cobalt	EPA 200.8	mg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Lead	EPA 200.8	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Manganese	EPA 200.8	mg/L	0.01	1.69	2.03	1.78	1.87
Molybdenum	EPA 200.8	mg/L	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	EPA 200.8	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Selenium IV	SM 3114C	mg/L	0.001	< 0.001	< 0.001	0.001	0.001
Vanadium	EPA 200.8	mg/L	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Radiometrics							
Uranium	EPA 200.8	mg/L	0.0003	0.0047	0.0569	0.0513	0.0568
Radium 226	EPA 903.0	pCi/L	0.2	< 0.2	0.6	0.5	< 0.2
Radium Error Estimate ±					0.2	0.3	
Radium 228	EPA 904.0	pCi/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Radium Error Estimate ±							
Thorium 230	EPA 907.0	pCi/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Thorium Error Estimate ±							
Lead 210	NERHL-65-4	pCi/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Lead Error Estimate ±							
Polonium 210	RMO-3008	pCi/L	1.0	< 1.0	N/R	< 1.0	< 1.0
Polonium Error Estimate ±							
Gross Alpha	EPA 900.1	pCi/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0
G. Alpha Error Estimate ±							
Trace Organics							
Chloroform	EPA 601	µg/L	1.0	< 1.0	< 1.0	2.0	< 1.0
Quality Assurance Data			**Target Range**				
Anion		meq		69.4	64.7	66.9	69.4
Cation		meq		72.1	64.2	65.6	67.3
SM A/C Balance		%	-5 - +5	1.96	-0.43	-0.98	-1.55
Calc TDS		mg/L		4370	3993	4131	4288
TDS A/C Balance		dec. %	0.80 - 1.20	1.05	1.17	1.13	1.11

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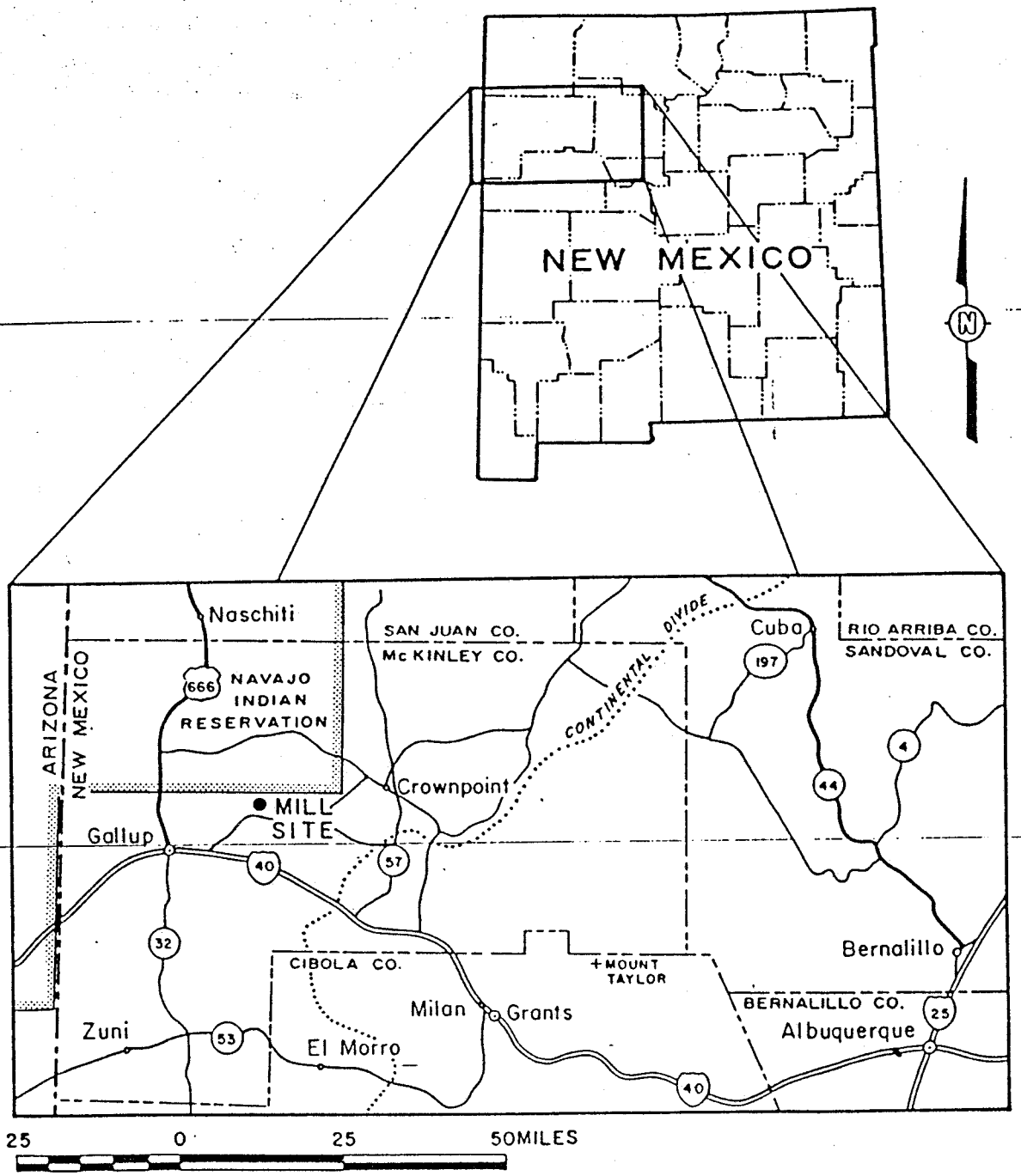
COMPLETE ANALYTICAL SERVICES

SAMPLING LOCATION MAPS



SOURCE:
URANIMIUM MILL LICENSE
RENEWAL APPLICATION-
ENVIRONMENTAL REPORT.
LICENSE NO. NM-UNC-ML.
JNC 1981

SKETCH 1-1
CHURCH ROCK PROJECT
SITE LOCATION PLAN
16674-000

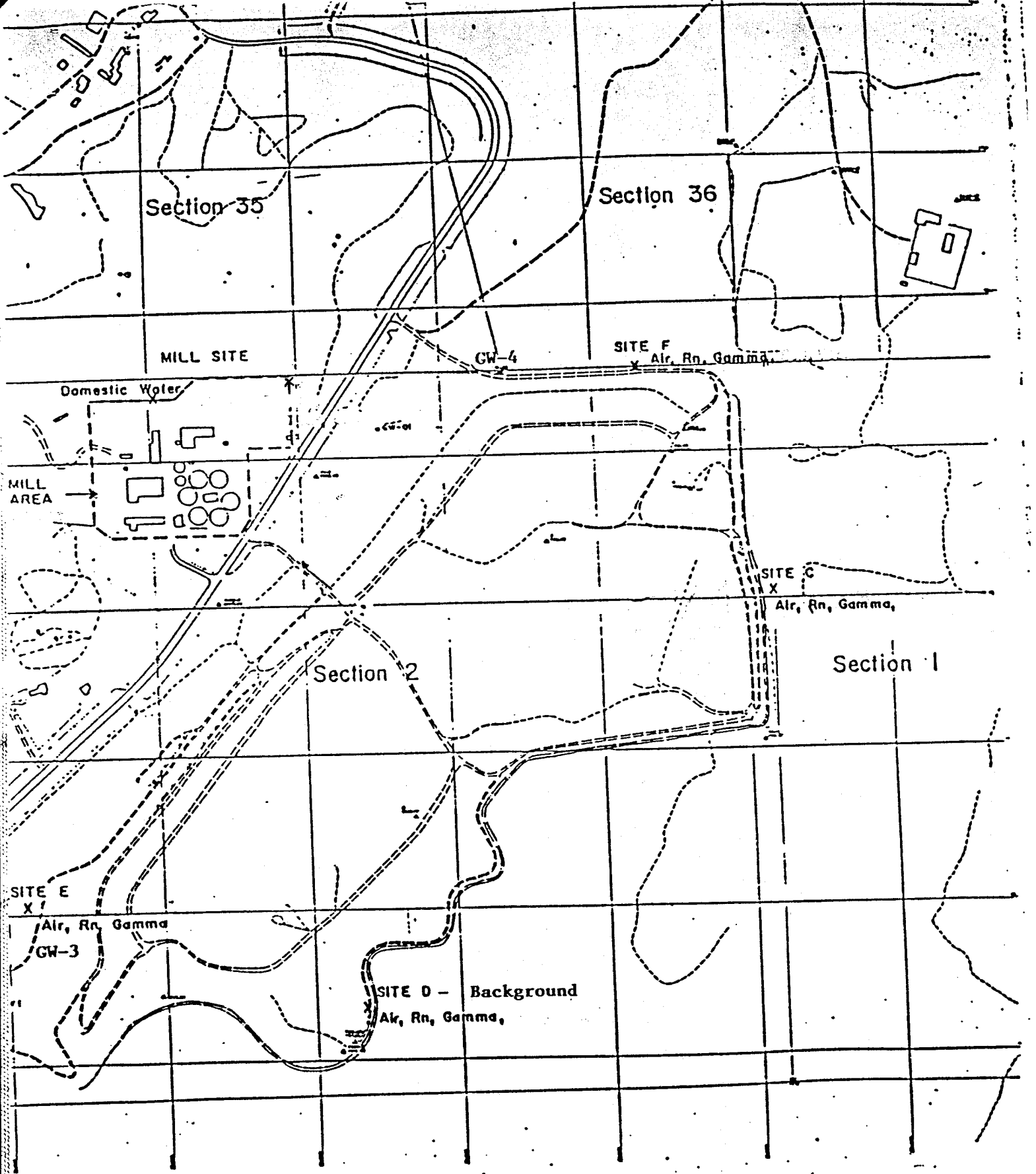
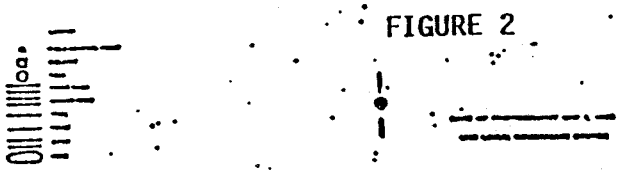
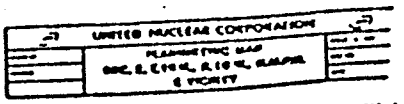

Section 35
Section 36
MILL SITE
GW-4
SITE F
Air, Rn, Gamma
Domestic Water
MILL AREA
SITE C
Air, Rn, Gamma,
Section 2
Section 1
SITE E
Air, Rn, Gamma
GW-3
SITE D – Background
Air, Rn, Gamma,

FIGURE 2

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