UNITED NUCLEAR CORPORATION

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February 22, 2001

Ken Hooks, Branch Chief
U.S. Nuclear Regulatory Commission
Fuel Cycle Safety & Safeguards
Fuel Cycle Licensing Branch
Division of Waste Management
Office of Nuclear Material Safety
And Safeguards
Mail Stop T 7J9
Washington, DC 20555-0001

40-8907

Re: Semi-Annual Effluent and Environmental Monitoring
Reports from July to December, 2000

Dear Mr. Hooks:

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 July 1, 2000 through December 31, 2000. This data is also reported on the format required in Regulatory Guide 4.14.

<u>Available monitoring data in this report are in the order listed below:</u>

- 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

IE17

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: Dwight Chamberlain, NRC
Steve Cline, GE
Roy Blickwedel, GE

ENVIRONMENTAL INSPECTION REPORTS

ENVIRONMENTAL INSPECTION

DATE: 7-31-00 TIME START: 1400

INSPECTOR: Mary Chischilly J. TIME END: 1500

TAILINGS AREA:	OKAY	PROBLEM	COMMENTS
1. Fences		✓	Broken fenceline by cattle over the weekend @ the NE corner ditch area
2. Air Monitors	— NA	—	DELETED
3. Radiation Warning Signs	✓		
4. Locked Gates	✓		

ACTION TAKEN: Broken fenceline is being repaired and completed on 8-1-00.

ENVIRONMENTAL INSPECTION

DATE: 8-28-00 TIME START: 0905

INSPECTOR: Max Chischilly Jr. TIME END: 1000

TAILINGS AREA:	OKAY	PROBLEM	COMMENTS
1. Fences	✓		
2. Air Monitors	— NA	—	REQUIRED ONLY UNDER AN RWP.
3. Radiation Warning Signs	✓		
4. Locked Gates	✓		

ACTION TAKEN:

ENVIRONMENTAL INSPECTION

DATE: 9-27-00 TIME START: 1430

INSPECTOR: _____ TIME END: 1535

TAILINGS AREA:	OKAY	PROBLEM	COMMENTS
1. Fences	✓		
2. Air Monitors	— NA	—	REQUIRED ONLY UNDER AN RWP.
3. Radiation Warning Signs	✓		
4. Locked Gates	✓		

ACTION TAKEN: _____

ENVIRONMENTAL INSPECTION

DATE: 10-31-00 TIME START: 0920

INSPECTOR: May Churchilly Jr. TIME END: 1115

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

ACTION TAKEN:

ENVIRONMENTAL INSPECTION

DATE: 11-28-00 TIME START: 0850

INSPECTOR: May Chischilly Jr. TIME END: 0950

TAILINGS AREA:	OKAY	PROBLEM	COMMENTS
1. Fences		✓	The top two strands of barb wire (≈20' long) is broken by cattle in the NE corner area & 3 heads are within the area.
2. Air Monitors	— NA	—	ONLY UNDER AN RWP
3. Radiation Warning Signs	✓		
4. Locked Gates	✓		

ACTION TAKEN: Chased the 3 cows out of the immediate area and informed the maintenance worker of the broken fenceline @ 1100 on the same day. Fenceline is repaired the following morning on 11-29-00.

ENVIRONMENTAL INSPECTION

DATE: 12-11-00 TIME START: 0900

INSPECTOR: Max Chischilly Jr. TIME END: 1000

TAILINGS AREA:	OKAY	PROBLEM	COMMENTS
1. Fences	✓		
2. Air Monitors	— NA	—	ONLY UNDER AN RWP
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
7-17-00	GW-3	Ground	U-Nat(dissolved) or total		$3.79E^{-8}$		$2.0E^{-10}$
3rd-Qr.		Water Well					
			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				$1.0E^{-9}$

UNC Field Data: PH(STD. Units) = 6.48

Cond.(U MHOS) = 5,040

Water Depth (Ft.) = 52.2

Temp. (°C) = 18.2

COMMENTS:

QUARTERLY LIQUID SAMPLES

Date/Qr.	Location	Type	Radionuclide	Concentration Mg/l	Concentration uci/ml	Error Est. uci/ml	LLD uci/ml
10/10/00	GW-3	Ground	U-Nat (dissolved) or total		3.93E-08		2.00E-10
4th - Qr.		Water Well					
			Th-230 (dissolved) or total		<2.00E-10		2.00E-10
			Ra-266 (dissolved) or total		<2.00E-10		2.00E-10
			Pb-210 (dissolved) or total		<1.0E-9		1.00E-09
			Po-210 (dissolved) or total		<1.0E-9		1.00E-09

UNC Field Data:

PH (STD. Units) = 6.56
Cond. (U MHOS) = 5,060
Water Depth (Ft.) = 52.4
Temp. (C) = 14.2

COMMENTS:

ENERGY LABORATORIES
Billings • Casper • Gillette
Helena • Rapid City

ENERGY LABORATORIES, INC.

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E-mail: casper@energylab.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:	30143-7	00-32838-1	00-34507-7	00-36828-7
SAMPLE DATE/TIME:	01-04-00 14:25	05-15-00 00:00	07-17-00 14:15	10-10-00 08:50
DATE RECEIVED:	-	05-18-00	07-20-00	10-13-00
REPORT DATE:	February 22, 2000	June 20, 2000	August 21, 2000	November 20, 2000
QUARTER REPRESENTED:	First 2000	Second 2000	Third 2000	Fourth 2000
UNC SUBMITTAL #:	TE-1-1-2000	TE 5-5-2000	TE-7-7-2000	TE-9-10-2000

Major Ions	Method	Units	Reporting Limit	Results	Results	Results	Results
Calcium	EPA 200.7	mg/L	0.05	760	755	809	644
Magnesium	EPA 200.7	mg/L	0.01	239	241	258	210
Sodium	EPA 200.7	mg/L	0.05	169	211	207	179
Potassium	EPA 200.7	mg/L	0.10	9.2	8.0	9.1	9.0
Bicarbonate	SM 2320-B	mg/L	0.10	1170	1174	1190	1170
Sulfate	EPA 200.7	mg/L	1.0	1760	1830	1710	1320
Chloride	EPA 200.7	mg/L	1.0	106	127	125	96.4
Ammonia as N	SM 4500-NH3-G	mg/L	0.05	< 0.05	0.15	< 0.05	0.10
Nitrate + Nitrite as N	EPA 353.2	mg/L	0.10	113	119	117	118
Non-Metals							
Total Dissolved Solids	SM 2540-C	mg/L	1.0	4680	4780	4800	4680
pH	SM 4500-H-B	std. units	0.10	7.83	7.71	7.51	7.60
Trace Metals							
Aluminum	EPA 200.7	mg/L	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Arsenic III	SM 3114-C	mg/L	0.001	< 0.001	0.001	< 0.001	< 0.001
Beryllium	EPA 200.7	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 200.7	mg/L	0.01	< 0.01	< 0.01	0.01	< 0.01
Lead	EPA 200.7	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Manganese	EPA 200.7	mg/L	0.01	1.78	1.87	1.78	1.57
Molybdenum	EPA 200.7	mg/L	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	EPA 200.7	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Selenium IV	SM 3114-C	mg/L	0.001	0.001	0.001	< 0.001	< 0.001
Vanadium	EPA 200.7	mg/L	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Radiometrics							
Uranium	EPA 200.8	mg/L	0.0003	0.051	0.057	0.056	0.058
Radium 226	EPA 903.0	pCi/L	0.2	0.5	< 0.2	< 0.2	< 0.2
Radium Error Estimate ±				0.3			
Radium 228	EPA 904.0	pCi/L	1.0	< 1.0	< 1.0	< 1.0	1.1
Radium Error Estimate ±							0.1
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	< 1.0	N/R	< 1.0
Polonium Error Estimate ±							
Gross Alpha	EPA 900.0	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	2.0	< 1.0	< 1.0	< 1.0

Quality Assurance Data		Target Range				
Anion	meq		66.90	69.45	67.00	57.82
Cation	meq		65.61	67.34	71.28	57.81
SM A/C Balance	%	-5 - +5	-0.97	-1.54	3.10	-0.02
Calc TDS	mg/L		4131	4288	4233	3568
TDS A/C Balance	dec. %	0.80 - 1.20	1.13	1.11	1.13	1.31

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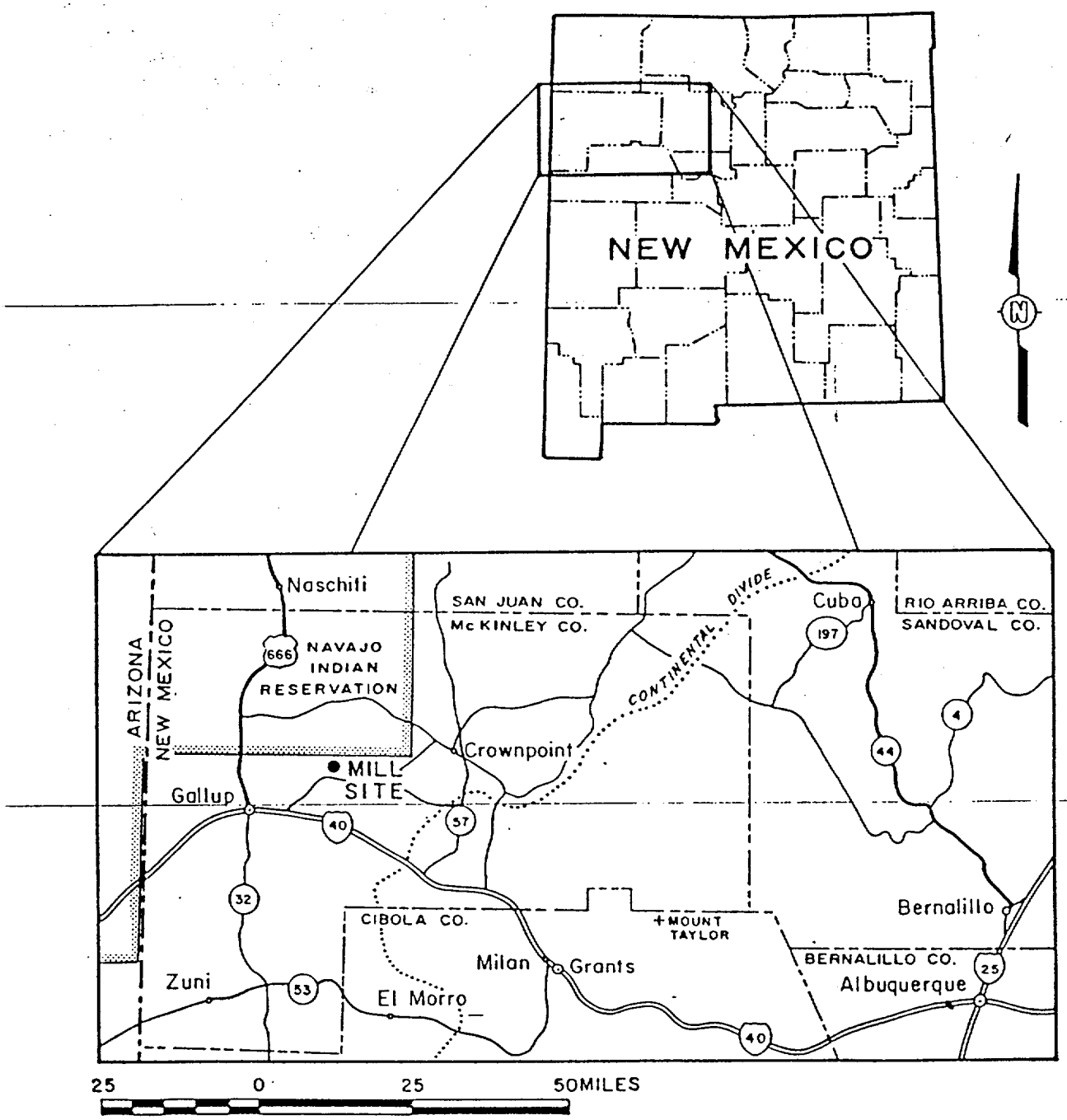
SAMPLING LOCATION MAPS



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

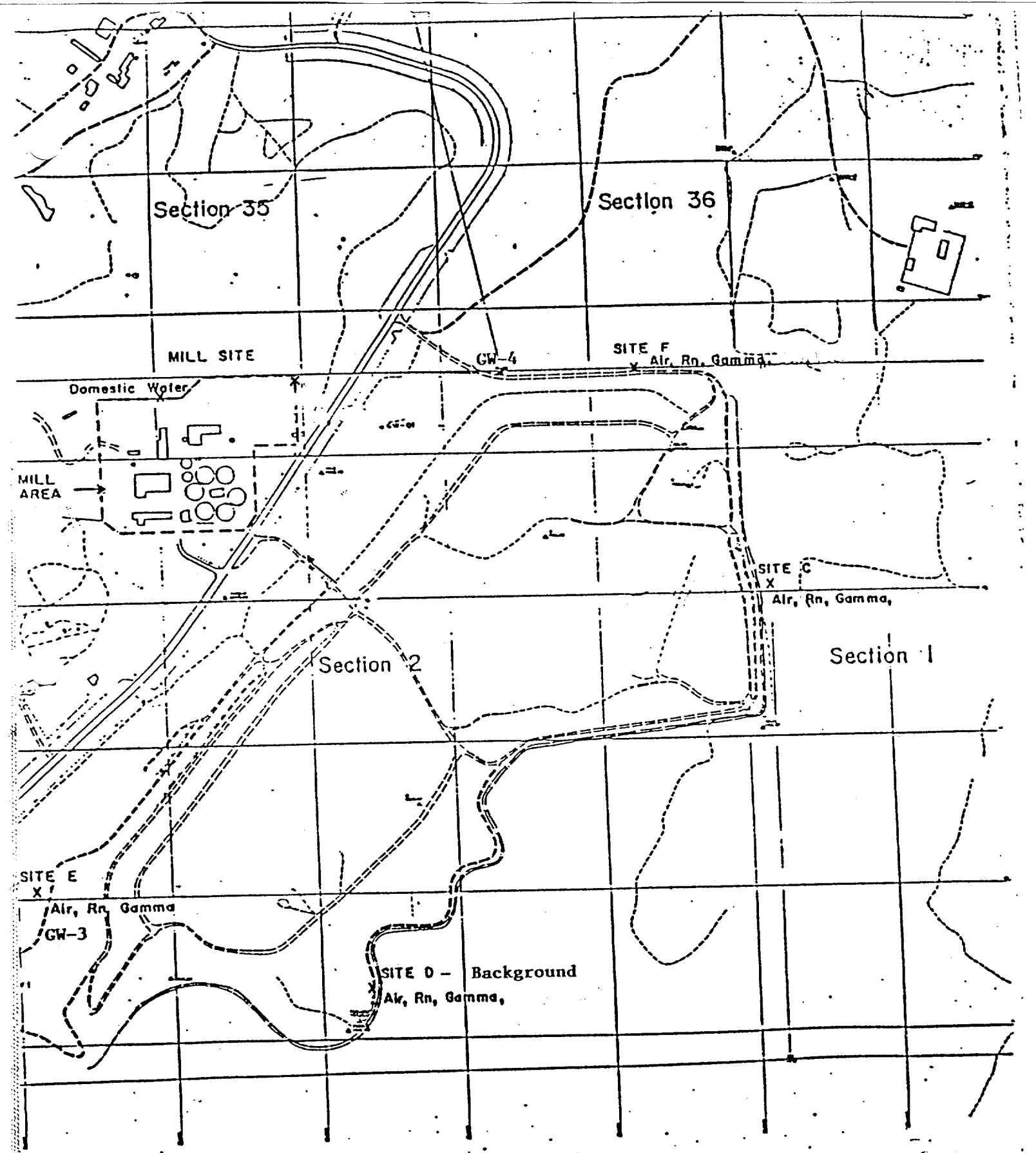

Section 35
Section 36
MILL SITE
GW-4
SITE F
Air, Rn, Gamma
Domestic Water
MILL AREA
SITE C
Air, Rn, Gamma,
Section 2
Section 1
SITE E
Air, Rn, Gamma
GW-3
SITE D – Background
Air, Rn, Gamma,

FIGURE 2