

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-37695-CS  
ADDRESS: 2517 MONUMENT ROAD

AUGUST 1985

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

ALBUQUERQUE OPERATIONS OFFICE

DEPARTMENT OF ENERGY

BY

BENDIX FIELD ENGINEERING CORPORATION  
P.O. Box 1569  
Grand Junction, Colorado 81502

APPROVED BY

*Michael K. Tucker*

M. TUCKER  
DOE PROJECT ENGINEER

DATE

*September 3, 1985*

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PDR WASTE PDR  
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## **1.0 EXECUTIVE SUMMARY**

### **1.1 Introduction**

The location, DOE ID No. GJ-37695-CS, is a commercial building located at 2517 Monument Road, Grand Junction, Colorado.

The purpose of this assessment is to evaluate the extent of uranium millsite contamination at this property. This assessment includes recommended remedial action, estimated volume of material to be removed, and estimated cost of the proposed action.

### **1.2 Evaluation and Recommendation**

The action recommended is the removal of contaminated material and restoration of the property to its original condition. The identified residual radioactive material found on this property is tailings; the estimated volume is: exterior, 775 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action is \$26,268. Remedial action on this property will take approximately 15 days to complete.

## 2.0 PROPERTY DESCRIPTION

### 2.1 General Description

Address: 2517 Monument Road, Grand Junction, Colorado

Zoning: Commercial (C)

Lot Size: Approximately 20,395 sf (0.47 acre)

Legal Description: From the southwest corner of Section 15, T.1S., R.1W., N 76° 04' E 940.0 feet, thence N 59° 57' E 71.2 feet to point of beginning. From point of beginning on a line bearing N 59° 57' E 298.8 feet, thence N 54° 28' W 130.67 feet, thence S 38° 48' W 250.0 feet, thence more or less southeasterly for 30 feet more or less to beginning and exceptions as recorded Book 901, Page 632, Mesa County Clerk, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2 miles northwest of the State of Colorado Tailings Repository. Appendix Figure 2.1 shows the property location relative to its surroundings.

Utilities: Utility locations are shown in Appendix Figure 2.2.

Electrical:	Overhead
Gas:	Underground
Telephone:	Overhead
Sewer:	Underground
Water:	Underground
Cable TV:	Overhead

Bordering Properties:

North:	Single-family residence
South:	Broadway
East:	Vacant land (watershed)
West:	Monument Road

### 2.2 Existing Facilities and Structures

Primary Structure:

Type:	One-story veterinary clinic
Size:	Approximately 1,114 sf
Construction Date:	1979
Construction:	Wood-frame with wood siding
Foundation:	Concrete
Footing Depth:	Approximately 8 feet to bottom of footing from grade
Basement:	Full under structure



Crawl Space: None  
Condition: Good

Other Structures: None

General Remarks:

Structures, utilities, landscaping, and other special features of this property are included in Appendix Figure 2.2.

Historical Data:

This structure is not over 50 years old. Therefore, it does not meet the eligibility criteria for consideration of inclusion on the National Register of Historic Places.

### 3.0 RADIOLOGIC SURVEY

#### 3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-37695-CS on April 1, 1985. Data collection methods were performed in accordance with procedures fully described in the Radiologic Support Operations Procedures Manual GJ-07(84) (Bendix Field Engineering Corporation, 1984). These data were evaluated to determine the areal and vertical extent of uranium mill tailings contamination at this property as well as any other contaminated material that may have originated from the millsite.

A review of historical information from the files of the Colorado Department of Health (CDH) and the inclusion data from Oak Ridge National Laboratory (ORNL) was conducted. These records indicate contamination located at least 12 feet away from the building, and associated with the embankment along the south side of the property.

The Bendix radiologic survey was designed to investigate the entire property, with emphasis on previously identified areas of contamination. Conclusions based upon data analyses are discussed in Section 3.5, Extent of Contamination. Photocopies of the Official Survey Report, Memo of Understanding, team leader notes, and deconvolution graphs are included in the Appendix (Section 6.0).

#### 3.2 Gamma Exposure-Rate Surveys

##### 3.2.1 Exterior Findings

Background Readings: 13 to 15 uR/h  
Highest Outside Gamma Reading (HOG): 120 uR/h

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Grid-point survey results are shown in Appendix Figure 3.1. Appendix Figure 3.2 presents the ranges of elevated gamma readings and indicates areas of possible contamination.

##### 3.2.2 Interior Findings

Background Readings: 13 to 16 uR/h  
Highest Inside Gamma Reading (HIG): 16 uR/h

Interior gamma exposure-rate measurements are summarized in Appendix Table 3.2. Appendix Figure 3.3 shows interior exposure rates.

#### 3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; these areas are shown in Appendix Figure 3.4. Data from these investigations are included in Appendix Table 3.1.

### 3.4 Radon/Radon Daughter Concentration (RDC)

The working level was not assessed by CDH. No RDC measurements were taken by Bendix.

### 3.5 Extent of Contamination

Appendix Figure 3.5 shows identified areas and estimated depths of contamination on this property, based on assessments of all measurements taken. As noted in this figure, areas recommended for remedial action that contain identified residual radioactive materials are:

- (AREA A) A deposit along the southern property line extending into the gravel parking lot, is contaminated to an estimated depth of 30 inches (approximately 3,900 sf).
- (AREA B) Contamination south of the primary structure extends to an estimated depth of 51 inches (approximately 1,600 sf).
- (AREA C) East of Area B, the contamination is estimated to be 30 inches deep (approximately 1,680 sf).
- (AREA D) A small deposit along the east property line is contaminated to a depth of 18 inches (approximately 61 sf).

#### (AREAS REQUIRING FURTHER INVESTIGATION DURING REMEDIAL ACTION)

Due to the use of various types of contaminated and uncontaminated backfill materials on this property, Areas A, B, and C should be monitored closely during remedial action.

#### 4.0 RECOMMENDED REMEDIAL ACTION

##### 4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-37695-CS, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figure 3.5) and transport of removed material to the disposal site.

After remedial action is completed, the areas involved will be restored to original condition in accordance with the Bendix drawings, Vicinity Properties General Construction Specification (Bendix Field Engineering Corporation, 1984), and Statement of Work for Construction Subcontractor.

Dislocation of the occupants will not be required for this remedial action.

##### 4.2 Evaluation of Recommended Remedial Action

Volume calculations of the areas included for remedial action are presented in Appendix Table 4.1. Cost estimates are presented in Appendix Table 4.2.

Estimated cost of remedial action is \$26,268.

This remedial action will result in removal of the identified residual radioactive materials.

There is no owner preference with respect to remedial action and no legal or other complications are foreseen at this time.

## 5.0 REFERENCES

ARIX, A Professional Corporation, Procedures Manual for the Grand Junction Remedial Action Program, for Colorado Department of Health, Radiation Control Division, and the U.S. Department of Energy, 1983.

Bendix Field Engineering Corporation, Procedures Manual Radiologic Support Operations Grand Junction Vicinity Properties, (GJ-07), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Engineering, Construction, and Land Support Manual Grand Junction Vicinity Properties Project, (GJ-08), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

Bendix Field Engineering Corporation, Grand Junction Vicinity Properties Operating Manual, (GJ-16) for U.S. Department of Energy, Nuclear Energy Programs, Division of Remedial Action Projects, UMTRA, 1984.

Bendix Field Engineering Corporation, Vicinity Properties General Construction Specification, for U.S. Department of Energy, Nuclear Energy Programs, Division of Remedial Action Projects, UMTRA, 1984.

Bendix Field Engineering Corporation, Environmental Assessment of Preliminary Cleanup Activities at Offsite Properties Contaminated by Tailings from the Grand Junction Inactive Uranium Millsite, (GJ-04), for U.S. Department of Energy, UMTRA Project Office, Albuquerque Operations, Albuquerque, New Mexico, 1983.

U.S. Department of Energy, Programmatic Memorandum of Agreement (DOE No. DE-GM04-84AL28460) between the U.S. Department of Energy, the Advisory Council on Historic Preservation, and the Colorado State Historic Preservation Officer, for UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

U.S. Department of Energy, Vicinity Properties Management and Implementation Manual, for UMTRA Project Office, Albuquerque Operations Office, Albuquerque, New Mexico, 1984.

U.S. Environmental Protection Agency, Standards for Remedial Action at Inactive Uranium Processing Sites (40 CFR Part 192), Washington, D.C., 1983.

## 6.0 APPENDIX

This Appendix contains the following:

Appendix Tables:

Table 3.1	Radium Concentrations at Exterior Locations
Table 3.2	Summary of Interior Gamma Exposure Rates
Table 4.1	Area and Volume Calculations
Table 4.2	Estimated Cost of Decontamination and Restoration

Appendix Figures:

Figure 2.1	Vicinity Map
Figure 2.2	Site Plan
Figure 3.1	Exterior Grid-Point Exposure Rates
Figure 3.2	Exterior Gamma Scan
Figure 3.3	Interior Gamma Exposure Rates
Figure 3.4	Exterior Sample Locations
Figure 3.5	Estimated Extent of Contamination

Official Survey Report

Memo of Understanding

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

## Radium Concentrations at Exterior Locations

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1	170260	03	TC	3.0		*	
		06	TC	3.5		*	
		09	TC	3.7		*	DC = 0 inches
		12	TC	3.8		*	
		15	TC	4.0		*	
		18	TC	4.1		*	
		21	TC	4.1		*	
		24	TC	4.1		*	
		27	TC	4.0		*	
		30	TC	4.0		*	
		33	TC	3.8		*	
2	180250	03	TC	3.3		*	
		06	TC	3.7		*	DC = 0 inches
		09	TC	3.8		*	
		12	TC	3.8		*	
		15	TC	4.0		*	
		18	TC	4.0		*	
		21	TC	4.0		*	
		24	TC	4.1		*	
		27	TC	4.1		*	
		30	TC	4.1		*	
		33	TC	4.0		*	
		36	TC	4.0		*	
3	190250	03	TC	3.2		*	Edge of embankment
		06	TC	3.5		*	
		09	TC	3.7		*	DC = 0 inches
		12	TC	3.9		*	
		15	TC	4.0		*	
		18	TC	4.1		*	
		21	TC	4.1		*	
		24	TC	4.2		*	
		27	TC	4.1		*	
		30	TC	4.1		*	
4	190254	03	TC	3.0		*	Edge of embankment
		06	TC	3.3		*	
		09	TC	3.7		*	DC = 0 inches
		12	TC	3.9		*	
		15	TC	3.9		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
4	190254	18	TC	4.0		*	
		21	TC	3.9		*	
		24	TC	3.9		*	
		27	TC	3.7		*	
		30	TC	3.3		*	
5	190260	03	TC	3.2		*	DC = 0 inches
		06	TC	3.5		*	
		09	TC	3.7		*	
		12	TC	3.9		*	
		15	TC	4.0		*	
		18	TC	4.0		*	
		21	TC	3.9		*	
		24	TC	3.7		*	
		27	TC	3.5		*	
		30	TC	3.4		*	
		33	TC	3.1		*	
6	208258	00	DS	3.9		*	
		06	DS	1.9		*	
		00-06	SS			4.8	Clay-sandy mix
		03	TC	4.1		*	
		06	TC	4.2		*	DC = 6 inches
		09	TC	4.3		*	
		12	TC	4.2		*	Based on the
		15	TC	4.3		*	delta readings
		18	TC	4.3		*	
		21	TC	4.4		*	
7	218243	03	TC	13.0		*	DC = 21 inches
		06	TC	9.6		*	
		09	TC	7.6		*	
		12	TC	6.9		*	Based on the
		15	TC	6.3		*	deconvolution graph
		18	TC	5.5		*	
		21	TC	4.8		*	
		24	TC	4.3		*	
		27	TC	4.1		*	
		30	TC	4.0		*	
		33	TC	4.1		*	
8	230240	03	TC	3.3		*	DC = 0 inches
		06	TC	3.6		*	



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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
8	230240	09	TC	3.6		*	
		12	TC	3.7		*	
		15	TC	3.7		*	
		18	TC	3.8		*	
		21	TC	3.8		*	
		24	TC	3.8		*	
		27	TC	3.7		*	
		30	TC	3.8		*	
		33	TC	3.7		*	
		36	TC	3.8		*	
		39	TC	3.8		*	
		42	TC	3.8		*	
		45	TC	3.8		*	
		48	TC	3.8		*	
		51	TC	3.8		*	
		54	TC	3.7		*	
		57	TC	3.8		*	
		60	TC	3.7		*	
		63	TC	3.7		*	
		66	TC	3.7		*	
9	240240	03	TC	3.3		*	
		06	TC	3.5		*	
		09	TC	3.7		*	DC = 0 inches
		12	TC	3.8		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.7		*	
		24	TC	3.7		*	
		27	TC	3.7		*	
		30	TC	3.7		*	
		33	TC	3.6		*	
		36	TC	3.6		*	
		39	TC	3.6		*	
		42	TC	3.7		*	
		45	TC	3.7		*	
		48	TC	3.7		*	
		51	TC	3.7		*	
		54	TC	3.7		*	
		57	TC	3.8		*	
		60	TC	3.8		*	
		63	TC	3.8		*	
		66	TC	3.8		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
10	251211	00	DS	13.4		*	
		06	DS	7.0		*	
		12	DS	5.5		*	
		18	DS	<1.0		*	
11	251224	00	DS	5.8		*	DC = 27 inches
		06	DS	16.1		*	
		12	DS	27.3		*	Based on the
		03	TC	6.2		*	deconvolution graph
		06	TC	6.9		*	
		09	TC	7.8		*	
		12	TC	9.0		*	
		15	TC	9.8		*	
		18	TC	9.0		*	
		21	TC	7.1		*	
		24	TC	5.9		*	
		27	TC	5.2		*	
		30	TC	4.6		*	
		33	TC	4.3		*	
		36	TC	4.2		*	
		39	TC	4.0		*	
		42	TC	3.9		*	
		45	TC	4.0		*	
		48	TC	3.9		*	
		51	TC	3.8		*	
		54	TC	3.8		*	
		57	TC	3.9		*	
		60	TC	3.8		*	
		63	TC	3.8		*	
12	260240	03	TC	4.6		*	Gravel parking lot
		06	TC	6.1		*	
		09	TC	6.1		*	DC = 18 inches
		12	TC	5.5		*	
		15	TC	5.2		*	Based on the
		18	TC	4.7		*	deconvolution graph
		21	TC	4.5		*	
		24	TC	4.3		*	
		27	TC	4.3		*	
		30	TC	4.2		*	
		33	TC	4.1		*	
		36	TC	4.1		*	
		39	TC	4.1		*	
		42	TC	4.0		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
13	260245	03	TC	4.2		*	
		06	TC	6.1		*	
		09	TC	7.9		*	
		12	TC	9.7		*	DC = 21 inches
		15	TC	11.1		*	
		18	TC	8.4		*	Based on the
		21	TC	6.4		*	deconvolution graph
		24	TC	5.3		*	
		27	TC	4.7		*	
		30	TC	4.4		*	
		33	TC	4.3		*	
		36	TC	4.2		*	
		39	TC	4.3		*	
		42	TC	4.4		*	
		45	TC	4.4		*	
		48	TC	4.3		*	
		51	TC	4.2		*	
		54	TC	4.1		*	
		57	TC	4.1		*	
		60	TC	4.1		*	
		63	TC	4.0		*	
		66	TC	4.0		*	
		69	TC	4.0		*	
		72	TC	4.0		*	
14	260260	03	TC	3.9		*	Auger refusal
		06	TC	5.1		*	
		09	TC	6.9		*	DC = > 66 inches
		12	TC	8.5		*	
		15	TC	8.3		*	Based on the
		18	TC	7.6		*	deconvolution graph
		21	TC	7.3		*	
		24	TC	7.9		*	
		27	TC	9.1		*	
		30	TC	10.7		*	
		33	TC	12.0		*	
		36	TC	13.0		*	
		39	TC	13.5		*	
		42	TC	12.8		*	
		45	TC	13.1		*	
		48	TC	13.2		*	
		51	TC	13.4		*	
		54	TC	15.7		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
14	260260	57	TC	15.8		*	
		60	TC	15.2		*	
		63	TC	15.0		*	
		66	TC	13.4		*	
15	270250	03	TC	2.9		*	South side of building
		06	TC	3.5		*	
		09	TC	3.8		*	
		12	TC	4.0		*	DC = 0 inches
		15	TC	4.1		*	
		18	TC	4.1		*	
		21	TC	4.1		*	
		24	TC	4.1		*	
		27	TC	3.9		*	
		30	TC	4.0		*	
		33	TC	4.0		*	
16	271213	03	TC	8.1		*	DC = 75 inches
		06	TC	8.6		*	
		09	TC	9.1		*	Based on the deconvolution graph
		12	TC	9.0		*	
		15	TC	8.0		*	
		18	TC	7.6		*	
		21	TC	7.5		*	
		24	TC	7.6		*	
		27	TC	8.3		*	
		30	TC	9.5		*	
		33	TC	10.5		*	
		36	TC	11.9		*	
		39	TC	13.7		*	
		42	TC	15.8		*	
		45	TC	19.5		*	
		48	TC	26.3		*	
		51	TC	29.2		*	
		54	TC	33.1		*	
		57	TC	33.4		*	
		60	TC	32.6		*	
		63	TC	33.9		*	
		66	TC	33.0		*	
		69	TC	25.3		*	
		72	TC	16.6		*	
		75	TC	11.9		*	
		78	TC	9.2		*	
		81	TC	7.6		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
16	217213	84	TC	6.8		*	
		87	TC	6.1		*	
		90	TC	5.6		*	
		93	TC	5.2		*	
		96	TC	4.8		*	
		99	TC	4.8		*	
17	277242	03	TC	2.9		*	
		06	TC	3.4		*	
		09	TC	3.8		*	
		12	TC	4.2		*	DC = 0 inches
		15	TC	4.5		*	
		18	TC	4.4		*	
		21	TC	4.4		*	
		24	TC	4.5		*	
		27	TC	4.7		*	
		30	TC	4.6		*	
		33	TC	4.4		*	
		36	TC	4.3		*	
		39	TC	4.2		*	
		42	TC	4.1		*	
		45	TC	4.1		*	
18	280220	03	TC	6.9		*	DC = 51 inches
		06	TC	8.0		*	
		09	TC	9.4		*	
		12	TC	12.5		*	
		15	TC	15.0		*	Based on the
		18	TC	17.9		*	deconvolution graph
		21	TC	23.1		*	
		24	TC	32.3		*	
		27	TC	44.8		*	
		30	TC	60.2		*	
		33	TC	80.7		*	
		36	TC	98.0		*	
		39	TC	106.9		*	
		42	TC	98.1		*	
		45	TC	81.9		*	
		48	TC	54.9		*	
		51	TC	33.4		*	
		54	TC	222.4		*	
		57	TC	17.6		*	
		60	TC	14.6		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
18	280220	63	TC	12.4		*	
		66	TC	11.7		*	
		69	TC	11.0		*	
		72	TC	10.2		*	
		75	TC	9.1		*	
		78	TC	8.4		*	
		81	TC	8.0		*	
		84	TC	7.8		*	
		87	TC	7.4		*	
		90	TC	7.2		*	
		93	TC	7.2		*	
		96	TC	7.1		*	
		99	TC	7.5		*	
19	281208	00	DS	3.9		*	DC =>90 inches
		06	DS	9.4		*	
		12	DS	4.3		*	
		03	TC	6.8		*	Based on the
		06	TC	9.7		*	deconvolution graph
		09	TC	10.9		*	
		12	TC	11.2		*	
		15	TC	10.3		*	
		18	TC	8.9		*	
		21	TC	8.3		*	
		24	TC	8.6		*	
		27	TC	8.4		*	
		30	TC	7.8		*	
		33	TC	7.5		*	
		36	TC	7.2		*	
		39	TC	7.2		*	
		42	TC	7.3		*	
		45	TC	8.0		*	
		48	TC	9.3		*	
		51	TC	12.0		*	
		54	TC	15.3		*	
		57	TC	18.5		*	
		60	TC	20.6		*	
		63	TC	21.0		*	
		66	TC	20.5		*	
		69	TC	20.5		*	
		72	TC	20.5		*	
		75	TC	21.4		*	
		78	TC	22.6		*	
		81	TC	23.3		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
19	281208	84	TC	23.7		*	
		87	TC	22.8		*	
20	282209	03	TC	6.7		*	DC =>90 inches
		06	TC	9.5		*	
		09	TC	11.4		*	Based on the deconvolution graph
		12	TC	10.9		*	
		15	TC	9.3		*	
		18	TC	8.0		*	
		21	TC	7.9		*	
		24	TC	8.0		*	
		27	TC	8.1		*	
		30	TC	8.5		*	
		33	TC	9.5		*	
		36	TC	11.0		*	
		39	TC	14.0		*	
		42	TC	18.4		*	
		45	TC	21.4		*	
		48	TC	22.3		*	
		51	TC	21.0		*	
		54	TC	19.1		*	
		57	TC	18.1		*	
		60	TC	18.5		*	
		63	TC	20.6		*	
		66	TC	23.4		*	
		69	TC	25.8		*	
		72	TC	27.1		*	
		75	TC	27.4		*	
		78	TC	27.5		*	
		81	TC	28.2		*	
		84	TC	31.5		*	
		87	TC	34.3		*	
		90	TC	35.5		*	
21	290210	03	TC	4.1		*	DC = 78 inches
		06	TC	5.1		*	
		09	TC	6.2		*	
		12	TC	6.8		*	
		15	TC	7.6		*	Based on the deconvolution graph
		18	TC	9.6		*	
		21	TC	12.8		*	
		24	TC	16.9		*	
		27	TC	19.2		*	
		30	TC	20.1		*	
		33	TC	20.4		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
21	290210	36	TC	20.9		*	
		39	TC	19.1		*	
		42	TC	17.2		*	
		45	TC	14.8		*	
		48	TC	12.9		*	
		51	TC	11.8		*	
		54	TC	11.3		*	
		57	TC	11.8		*	
		60	TC	14.0		*	
		63	TC	17.5		*	
		66	TC	24.5		*	
		69	TC	31.5		*	
		72	TC	30.1		*	
		75	TC	21.8		*	
		78	TC	14.7		*	
		81	TC	10.7		*	
		84	TC	8.9		*	
		87	TC	7.7		*	
		90	TC	6.9		*	
		93	TC	6.3		*	
		96	TC	5.8		*	
22	290250	99	TC	5.5		*	
		102	TC	5.1		*	
		105	TC	4.9		*	
		108	TC	4.6		*	
		111	TC	4.3		*	
		114	TC	4.2		*	
		03	TC	2.7		*	South side of
		06	TC	3.1		*	building
		09	TC	3.3		*	
		12	TC	3.5		*	DC = 0 inches
23	300200	15	TC	3.6		*	
		18	TC	3.9		*	
		21	TC	4.0		*	
		24	TC	4.0		*	
		27	TC	4.0		*	
		30	TC	4.1		*	
		33	TC	4.0		*	
		03	TC	4.6		*	Auger refusal
		06	TC	5.4		*	
		09	TC	5.6		*	
		12	TC	5.6		*	



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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
23	300200	15	TC	5.7		*	
		18	TC	6.3		*	
		21	TC	7.2		*	
		24	TC	8.4		*	
		27	TC	8.9		*	
		30	TC	8.9		*	
		33	TC	8.7		*	DC = 78 inches
		36	TC	9.0		*	
		39	TC	9.2		*	Based on the
		42	TC	9.6		*	deconvolution graph
		45	TC	9.7		*	
		48	TC	10.1		*	
		51	TC	10.9		*	
		54	TC	12.0		*	
		57	TC	12.1		*	
		60	TC	11.5		*	
		63	TC	10.8		*	
		66	TC	10.0		*	
		69	TC	9.1		*	
		72	TC	8.2		*	
		75	TC	7.6		*	
		78	TC	7.1		*	
		81	TC	7.0		*	
24	300220	03	TC	2.7		*	
		06	TC	3.0		*	DC = 0 inches
		09	TC	3.0		*	
		12	TC	3.1		*	
		15	TC	3.1		*	
		18	TC	2.9		*	
		21	TC	2.8		*	
		24	TC	2.8		*	
		27	TC	2.8		*	
		30	TC	2.8		*	
		33	TC	2.9		*	
		36	TC	2.9		*	
		39	TC	3.2		*	
		42	TC	3.4		*	
		45	TC	3.7		*	
		48	TC	4.1		*	
		51	TC	4.5		*	
		54	TC	4.9		*	
		57	TC	5.0		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
24	300220	60	TC	5.0		*	
		63	TC	4.6		*	
		66	TC	4.3		*	
25	300230	03	TC	2.7		*	DC = 0 inches
		06	TC	3.0		*	
		09	TC	3.1		*	
		12	TC	3.2		*	
		15	TC	3.1		*	
		18	TC	3.0		*	
		21	TC	2.8		*	
		24	TC	2.6		*	
		27	TC	2.5		*	
		30	TC	2.4		*	
		33	TC	2.4		*	
		36	TC	2.4		*	
		39	TC	2.4		*	
		42	TC	2.4		*	
		45	TC	2.6		*	
		48	TC	2.7		*	
		51	TC	2.9		*	
		54	TC	3.0		*	
		57	TC	3.2		*	
		60	TC	3.5		*	
26	308242	03	TC	2.8		*	Water line
		06	TC	3.2		*	
		09	TC	3.4		*	DC = 0 inches
		12	TC	3.5		*	
		15	TC	3.5		*	
		18	TC	3.5		*	
		21	TC	3.5		*	
		24	TC	3.4		*	
		27	TC	3.2		*	
		30	TC	3.0		*	
		33	TC	2.7		*	
		36	TC	2.4		*	
		39	TC	2.3		*	
		42	TC	2.2		*	
		45	TC	2.1		*	
		48	TC	2.2		*	
		51	TC	2.2		*	
		54	TC	2.3		*	
		57	TC	2.3		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
27	311182	03	TC	22.8		*	DC = 30 inches
		06	TC	26.2		*	
		09	TC	25.3		*	Based on the deconvolution graph
		12	TC	20.3		*	
		15	TC	16.1		*	
		18	TC	14.2		*	
		21	TC	13.5		*	
		24	TC	12.6		*	
		27	TC	11.0		*	
		30	TC	9.2		*	
		33	TC	8.2		*	
		36	TC	7.7		*	
		39	TC	6.2		*	
		42	TC	5.3		*	
		45	TC	4.8		*	
		48	TC	4.8		*	
		51	TC	4.7		*	
		54	TC	4.7		*	
		57	TC	4.8		*	
		60	TC	5.0		*	
		63	TC	5.3		*	
		66	TC	5.5		*	
		69	TC	5.7		*	
		72	TC	5.5		*	
		75	TC	5.6		*	
		78	TC	5.4		*	
		81	TC	4.9		*	
		84	TC	4.4		*	
		87	TC	3.7		*	
		90	TC	3.3		*	
		93	TC	3.1		*	
		96	TC	2.9		*	
		99	TC	2.7		*	
		102	TC	2.8		*	
28	316253	03	TC	3.0		*	Sewer line
		06	TC	3.4		*	
		09	TC	3.6		*	DC = 0 inches
		12	BH	3.7	<1.0	*	
		15	TC	3.7		*	
		18	TC	3.8		*	
		21	TC	3.9		*	
		24	TC	3.8		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
28	316253	27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.7		*	
		39	TC	3.7		*	
		42	BH	3.7	1.2	*	
		45	TC	3.5		*	
		48	TC	3.5		*	
		51	TC	3.3		*	
		54	TC	3.0		*	
		57	TC	2.8		*	
		60	TC	2.7		*	
		63	TC	2.6		*	
		66	BH	2.6	<1.0	*	
		69	TC	2.6		*	
		72	TC	2.7		*	
		75	TC	2.7		*	
		78	TC	2.6		*	
		81	TC	2.5		*	
		84	TC	2.4		*	
		87	TC	2.4		*	
		90	TC	2.5		*	
		93	TC	2.4		*	
		96	TC	2.4		*	
29	320195	03	TC	14.3		*	DC = 21 inches
		06	TC	18.3		*	
		09	TC	19.5		*	
		12	TC	20.6		*	Based on the
		15	TC	17.4		*	deconvolution graph
		18	TC	11.8		*	
		21	TC	8.2		*	
		24	TC	6.6		*	
		27	TC	5.9		*	
		30	TC	5.4		*	
		33	TC	5.0		*	
		36	TC	4.8		*	
		39	TC	4.6		*	
30	320218	03	TC	2.9		*	12 feet east
		06	TC	3.1		*	of building

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
30	320218	09	TC	3.3		*	
		12	TC	3.3		*	DC = 75 inches
		15	TC	3.3		*	
		18	TC	3.5		*	Based on the
		21	TC	3.5		*	deconvolution graph
		24	TC	3.8		*	
		27	TC	3.9		*	
		30	TC	4.1		*	
		33	TC	4.4		*	
		36	TC	4.8		*	
		39	TC	5.3		*	
		42	TC	5.7		*	
		45	TC	6.1		*	
		48	TC	6.9		*	
		51	TC	8.1		*	
		54	TC	9.8		*	
		57	TC	12.2		*	
		60	TC	15.8		*	
		63	TC	21.3		*	
		66	TC	24.4		*	
		69	TC	22.9		*	
		72	TC	15.8		*	
		75	TC	10.3		*	
		78	TC	7.7		*	
		81	TC	6.4		*	
		84	TC	5.7		*	
		87	TC	5.1		*	
		90	TC	4.7		*	
		93	TC	4.2		*	
		96	TC	3.9		*	
31	320220	03	TC	2.5		*	10 feet east of
		06	TC	2.8		*	building
		09	TC	2.9		*	
		12	TC	2.8		*	DC = 0 inches
		15	TC	2.8		*	
		18	TC	2.8		*	Based on the
		21	TC	2.8		*	deconvolution graph
		24	TC	2.8		*	
		27	TC	2.8		*	
		30	TC	2.9		*	
		33	TC	2.9		*	
		36	TC	2.9		*	
		39	TC	3.0		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
31	320220	42	TC	3.1		*	
		45	TC	3.0		*	
		48	TC	3.1		*	
		51	TC	3.2		*	
		54	TC	3.3		*	
		57	TC	3.3		*	
		60	TC	3.4		*	
32	329182	03	TC	34.1		*	DC = 33 inches
		06	TC	41.3		*	
		09	TC	42.0		*	
		12	BH	36.2	20.5	*	Based on the deconvolution graph
		15	TC	27.4		*	
		18	TC	21.4		*	
		21	TC	17.5		*	
		24	TC	14.8		*	
		27	TC	12.9		*	
		30	TC	10.9		*	
		33	TC	9.4		*	
		36	TC	8.8		*	
		39	TC	7.3		*	
		42	BH	5.9	3.2	*	
		45	TC	5.2		*	
		48	TC	4.9		*	
		51	TC	4.6		*	
		54	TC	4.4		*	
		57	TC	4.3		*	
		60	TC	4.1		*	
		63	TC	4.0		*	
		66	BH	3.6	1.7	*	
		69	TC	3.6		*	
33	330216	03	TC	5.9		*	DC = 18 inches
		06	TC	7.3		*	
		09	TC	8.0		*	
		12	TC	7.7		*	Based on the deconvolution graph
		15	TC	6.4		*	
		18	TC	5.6		*	
		21	TC	5.2		*	
		24	TC	4.7		*	
		27	TC	4.6		*	
		30	TC	4.4		*	
		33	TC	4.3		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
34	335228	03	TC	3.1		*	DC = 0 inches
		06	TC	3.3		*	
		09	TC	3.4		*	
		12	TC	3.6		*	
		15	TC	3.6		*	
		18	TC	3.8		*	
		21	TC	3.9		*	
		24	TC	4.0		*	
		27	TC	4.1		*	
		30	TC	4.1		*	
		33	TC	4.0		*	
		36	TC	4.0		*	
35	340190	03	TC	11.6		*	DC = 9 inches  Based on the Deconvolution graph
		06	TC	10.2		*	
		09	TC	7.0		*	
		12	TC	5.4		*	
		15	TC	4.6		*	
		18	TC	4.3		*	
		21	TC	4.5		*	
		24	TC	4.6		*	
		27	TC	4.5		*	
		30	TC	4.4		*	
36	340212	00	DS	2.6		*	Moist sandy soil
		00-06	SS			4.8	
37	340220	03	TC	3.2		*	10 feet east of building  DC = 0 inches
		06	TC	3.7		*	
		09	TC	3.8		*	
		12	TC	3.8		*	
		15	TC	3.6		*	
		18	TC	3.8		*	
		21	TC	3.8		*	
		24	TC	4.0		*	
		27	TC	4.1		*	
		30	TC	4.2		*	
		33	TC	4.1		*	
		36	TC	4.0		*	
		39	TC	4.1		*	
		42	TC	4.1		*	
		45	TC	4.1		*	
		48	TC	4.1		*	

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Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
37	340220	51	TC	4.1		*	
		54	TC	4.0		*	
		57	TC	4.1		*	
		60	TC	4.2		*	
38	351211	00	DS	3.7		*	
		06	DS	12.8		*	
		12	DS	37.4		*	DC = 24 inches
		03	TC	9.0		*	
		06	TC	15.5		*	Based on the
		09	TC	20.8		*	Deconvolution graph
		12	TC	26.7		*	
		15	TC	28.3		*	
		18	TC	22.6		*	
		21	TC	17.3		*	
		24	TC	14.4		*	
		27	TC	11.8		*	
		30	TC	9.2		*	
		33	TC	7.2		*	
		36	TC	5.9		*	
		39	TC	5.1		*	
		42	TC	4.7		*	
		45	TC	4.5		*	
		48	TC	4.4		*	
		51	TC	4.4		*	
		54	TC	4.4		*	
		57	TC	4.3		*	
		60	TC	4.3		*	
		63	TC	4.3		*	
39	351256	03	TC	2.8		*	DC = 0 inches
		06	TC	3.1		*	
		09	TC	3.4		*	
		12	TC	3.5		*	
		15	TC	3.6		*	
		18	TC	3.6		*	
		21	TC	3.7		*	
		24	TC	3.6		*	
		27	TC	3.7		*	
		30	TC	3.7		*	
		33	TC	3.7		*	
		36	TC	3.7		*	
		39	TC	3.6		*	
		42	TC	3.6		*	



## Radium Concentrations at Exterior Locations

DOE ID #GJ-37695-CS

2517 Monument Road

Page 19 of 22

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
39	351256	45	TC	3.6		*	
		48	TC	3.6		*	
		51	TC	3.7		*	
		54	TC	3.6		*	
		57	TC	3.7		*	
		60	TC	3.7		*	
		63	TC	3.7		*	
		66	TC	3.7		*	
		69	TC	3.6		*	
		72	TC	3.6		*	
		75	TC	3.5		*	
		78	TC	3.2		*	
		81	TC	2.8		*	
		84	TC	2.6		*	
		87	TC	2.2		*	
		90	TC	2.2		*	
		93	TC	2.1		*	
		96	TC	2.1		*	
		99	TC	2.0		*	
		102	TC	2.0		*	
		105	TC	1.9		*	
		108	TC	1.9		*	
40	352231	00	DS	<1.0		*	Gas line north side of building
		06	DS	<1.0		*	
		12	DS	<1.0		*	
41	360200	03	TC	3.5		*	Auger refusal
		06	TC	3.8		*	
		09	TC	3.9		*	DC = 0 inches
		12	TC	3.8		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.9		*	
		24	TC	4.0		*	
		27	TC	4.0		*	
		30	TC	4.2		*	
		33	TC	4.1		*	
		36	TC	3.9		*	
		39	TC	3.8		*	
		42	TC	3.8		*	
		45	TC	3.8		*	
		48	TC	3.8		*	

## Radium Concentrations at Exterior Locations

DOE ID #GJ-37695-CS

2517 Monument Road

Page 20 of 22

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
42	360220	03	TC	3.1		*	
		06	TC	3.6		*	
		09	TC	4.0		*	DC = 0 inches
		12	TC	4.0		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.9		*	
		24	TC	3.9		*	
		27	TC	3.8		*	
		30	TC	3.9		*	
		33	TC	3.9		*	
		36	TC	4.0		*	
		39	TC	4.0		*	
		42	TC	4.0		*	
		45	TC	3.9		*	
		48	TC	4.0		*	
		51	TC	4.0		*	
		54	TC	3.9		*	
		57	TC	4.0		*	
		60	TC	4.0		*	
		63	TC	3.9		*	
		66	TC	3.9		*	
43	360260	00	DS	<1.0		*	Background
		00-06	SS			1.5	
		03	TC	2.6		*	DC = 0 inches
		06	TC	2.9		*	
		09	TC	3.0		*	
		12	BH	2.8	<1.0	*	
		15	TC	2.6		*	
		18	BH	2.4	<1.0	*	
		21	TC	2.2		*	
		24	TC	2.2		*	
		27	TC	2.1		*	
		30	BH	2.1	<1.0	*	
44	362185	03	TC	3.8		*	
		06	TC	3.7		*	
		09	TC	3.7		*	DC = 0 inches
		12	TC	3.7		*	
		15	TC	3.7		*	
		18	TC	3.6		*	
		21	TC	3.6		*	
		24	TC	3.6		*	

## Radium Concentrations at Exterior Locations

DOE ID #GJ-37695-CS

2517 Monument Road

Page 21 of 22

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
44	362185	27	TC	3.7		*	
		30	TC	3.7		*	
		33	TC	3.7		*	
		36	TC	3.7		*	
		39	TC	3.7		*	
		42	TC	3.7		*	
		45	TC	3.7		*	
		48	TC	3.7		*	
		51	TC	3.6		*	
		54	TC	3.7		*	
		57	TC	3.8		*	
		60	TC	3.8		*	
		63	TC	3.7		*	
		66	TC	3.6		*	
		69	TC	3.5		*	
45	376177	03	TC	4.0		*	
		06	TC	4.7		*	
		09	TC	4.6		*	DC = 0 inches
		12	TC	4.4		*	
		15	TC	4.2		*	
		18	TC	3.9		*	
		21	TC	3.9		*	
		24	TC	3.9		*	
		27	TC	3.9		*	
		30	TC	3.9		*	
		33	TC	3.9		*	
		36	TC	4.0		*	
		39	TC	3.9		*	
		42	TC	3.9		*	
46	377200	00	DS	8.1		*	
		06	DS	7.8		*	
		12	DS	4.4		*	
		00-06	SS			12.6	Moist sandy soil
		03	TC	5.6		*	
		06	TC	5.6		*	DC = 18 inches
		09	TC	5.6		*	
		12	TC	5.3		*	Based on the
		15	TC	5.0		*	Deconvolution graph

## Radium Concentrations at Exterior Locations

DOE ID #GJ-37695-CS

2517 Monument Road

Page 22 of 22

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
46	377200	18	TC	4.5		*	
		21	TC	4.2		*	
		24	TC	4.0		*	
		27	TC	4.0		*	
		30	TC	3.9		*	

Measurement  
Types:

GB = GAD-6 Borehole  
GS = GAD-6 Surface  
DS = Delta Scintillometer  
TC = Total Count Borehole  
SS = Soil Sample  
BH = Combined GAD-6 and  
Total Count Borehole

Notes: DC = Depth of Contamination  
\* = No Soil Sample Taken  
[n] = Reading Taken n-Inches  
Above Floor or Ground  
Date of Survey = 04-01-85  
Team Leader = JDG

Table 3.2

## Summary of Interior Gamma Exposure Rates

DOE ID No. GJ-37695-CS 2517 Monument Road Page 1 of 1

Location	Number of Readings Taken at Waist Level	Range at Waist Level (uR/h)	Mean at Waist Level (uR/h)	Number of Readings Taken at Surface	Range at Surface (uR/h)	Mean Surface (uR/h)
PRIMARY STRUCTURE	*	*	*	*	13-16	*

\* The CDH and ORNL data indicate the absence of interior contamination at this property. This information was investigated by performing a walking gamma scan. These areas and the ranges of gamma measurements are shown in Appendix Figure 3.3.

Table 4.1  
Area and Volume Calculations  
DOE ID No. GJ-37695-CS

Page 1 of 1

<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
EXTERIOR					
	Contaminated Fill				
A	60 x 65 =	3,900	x 2.5 =	9,750	
B	32 x 50 =	1,600	x 4.3 =	6,880	
C	42 x 40 =	1,680	x 2.5 =	4,200	
D	13 x 4 =	52			
	3 x 3 =	9			
		<hr/>			
		61	x 1.5 =	92	
				<hr/>	
	Volume of Contaminated Fill		= 20,922	= 20,922/27	= 775
					<hr/>
	TOTAL VOLUME - EXTERIOR				= 775

See Appendix Figure 3.5 For Areas

=====

Table 4.2  
Estimated Cost of Decontamination and Restoration  
DOE ID No. GJ-37695-CS

Page 1 of 1

EXTERIOR

Remove contaminated material (machine-open area)  
775 cy @ \$14.50/cy \$ 11,238

At gravel parking area (approximately 1600 sf).  
Replace with pit run gravel (18" depth)  
89 cy @ \$9/cy 801

Replace with roadbase (10" depth)  
49 cy @ \$11.50/cy 564

Replace with gravel surface (2" depth)  
10 cy @ 13.50/cy 135

At all other areas (approximately 5,641 sf)  
Replace with pit run gravel to within 12" of surface  
418 cy @ \$9/cy 3,762

Replace top 12" depth with roadbase  
209 cy @ \$11.50/cy 2,404

TOTAL EXTERIOR \$ 18,904

TOTAL INTERIOR 0

ACCESS CONTROL 200

SUBTOTAL \$ 19,104

CONTINGENCY @ 10% 1,910

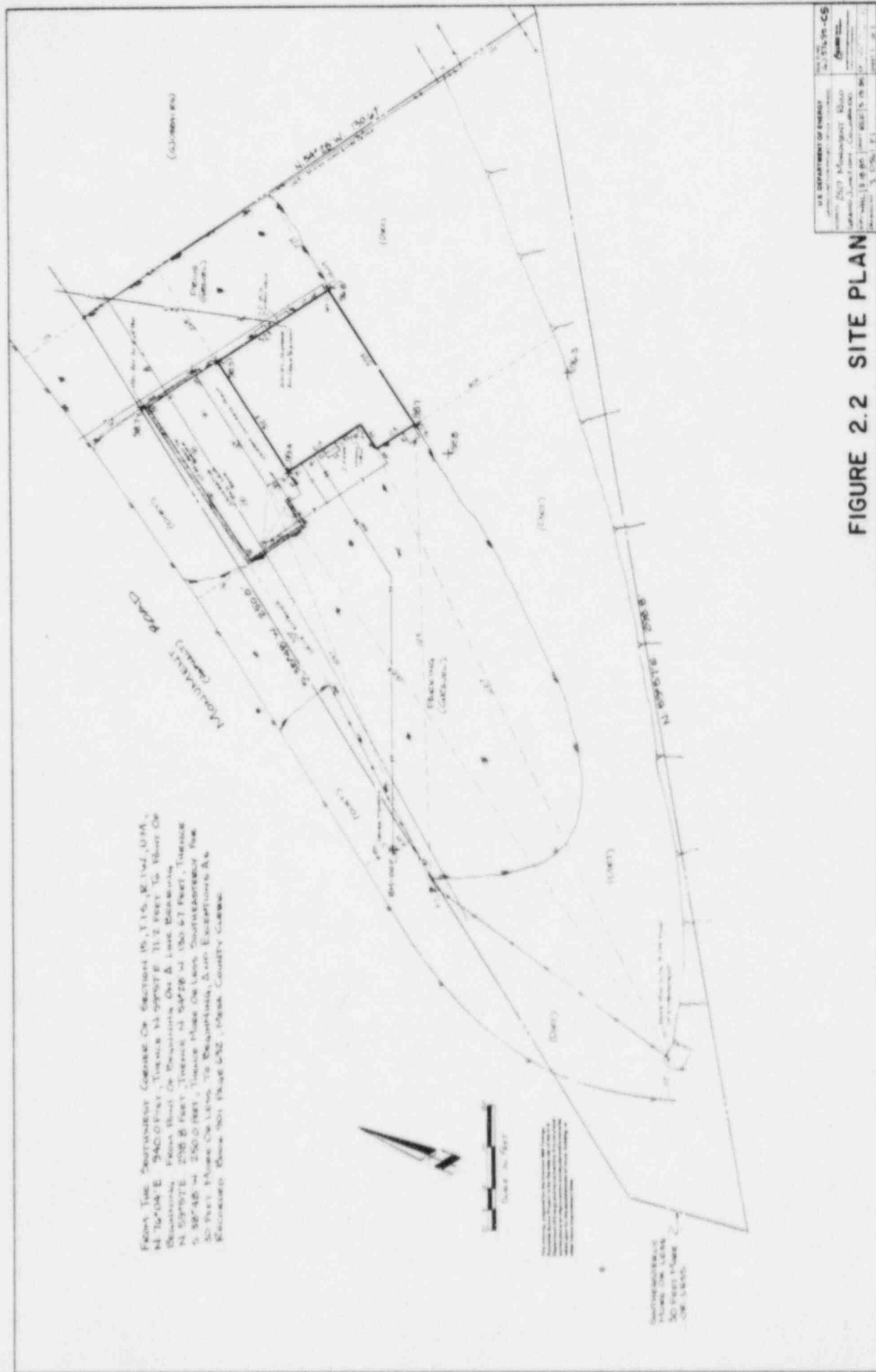
SUBTOTAL \$ 21,014

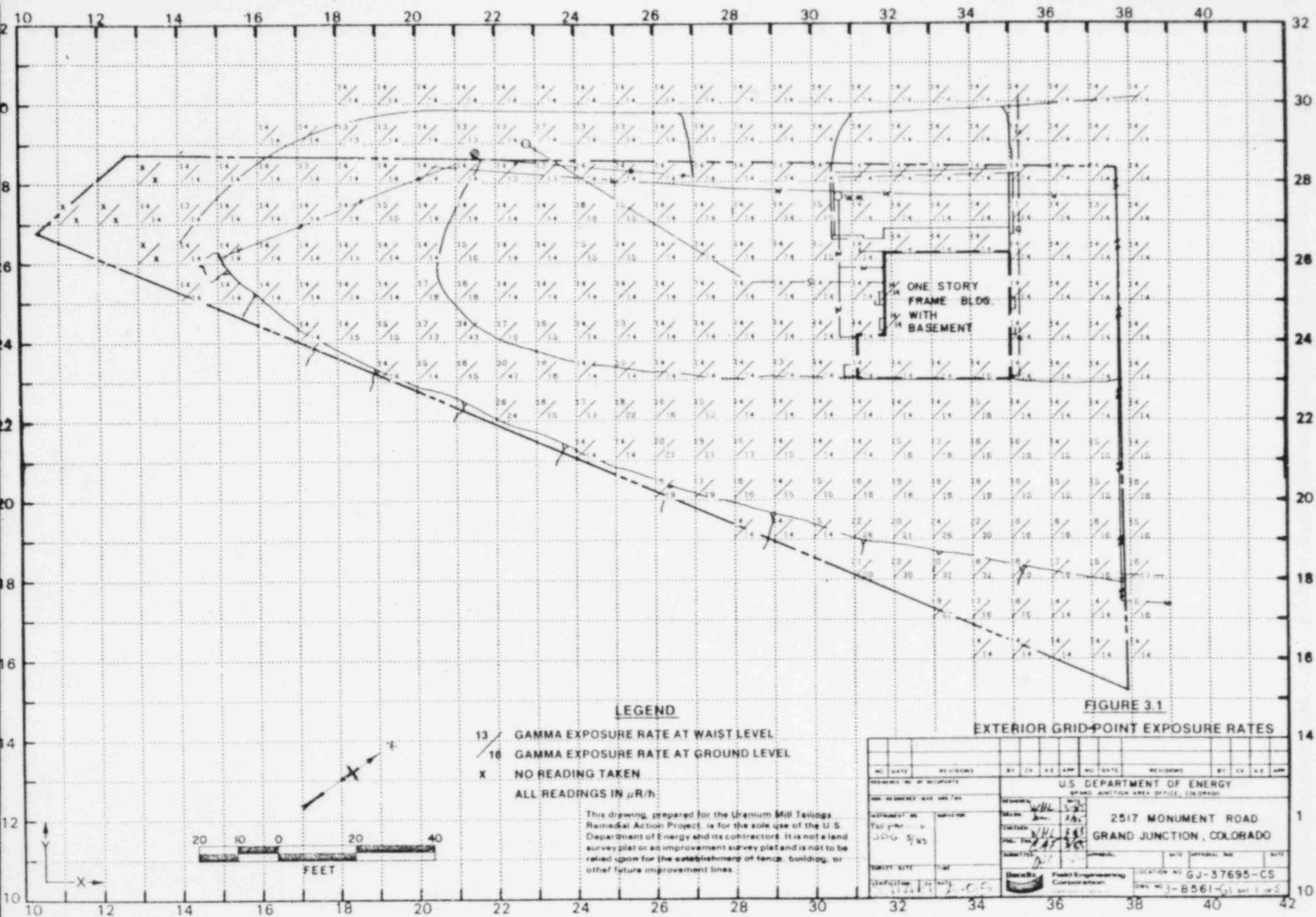
CONTRACTOR OVERHEAD & PROFIT @ 25% 5,254

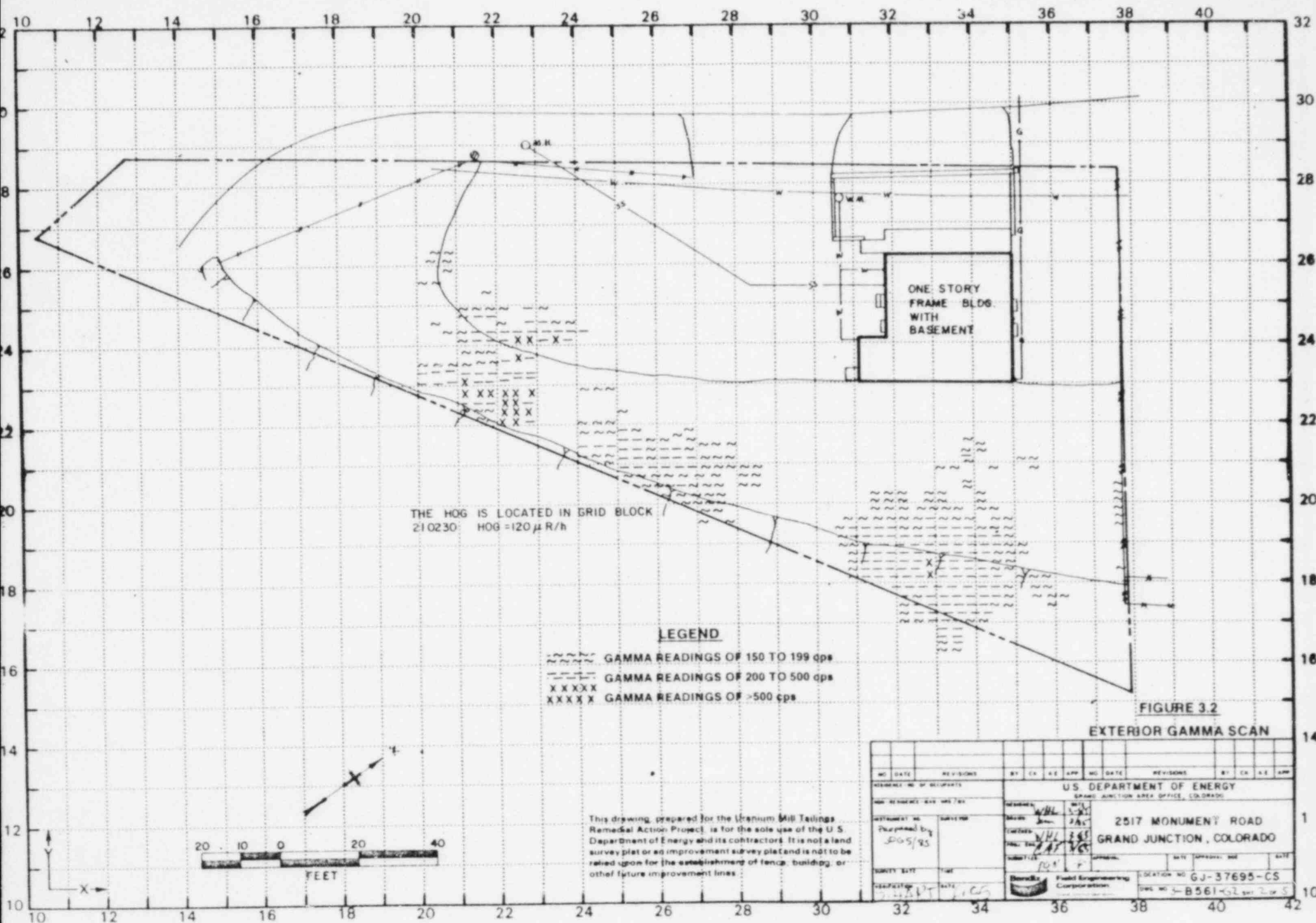
GRAND TOTAL \$ 26,268

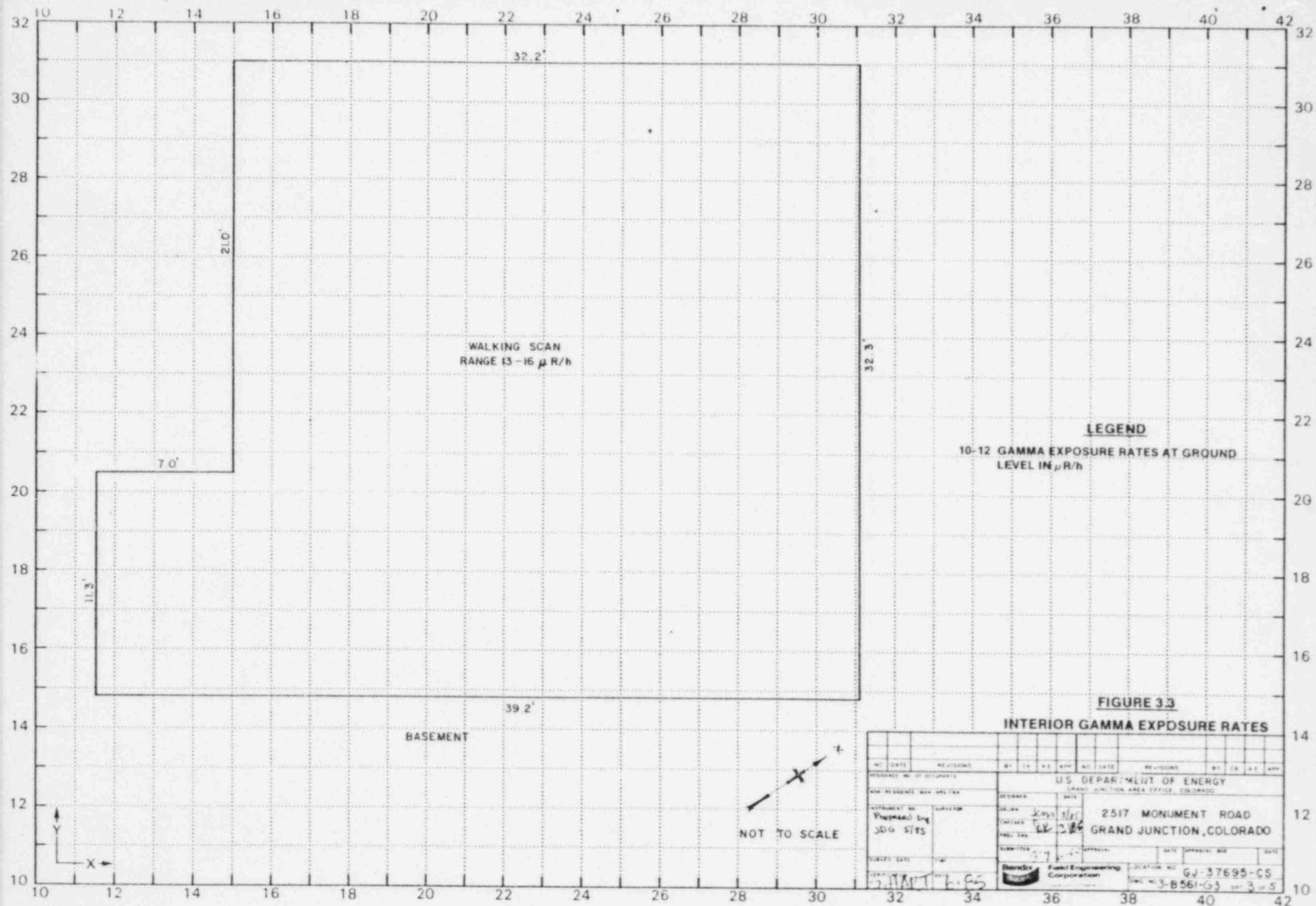


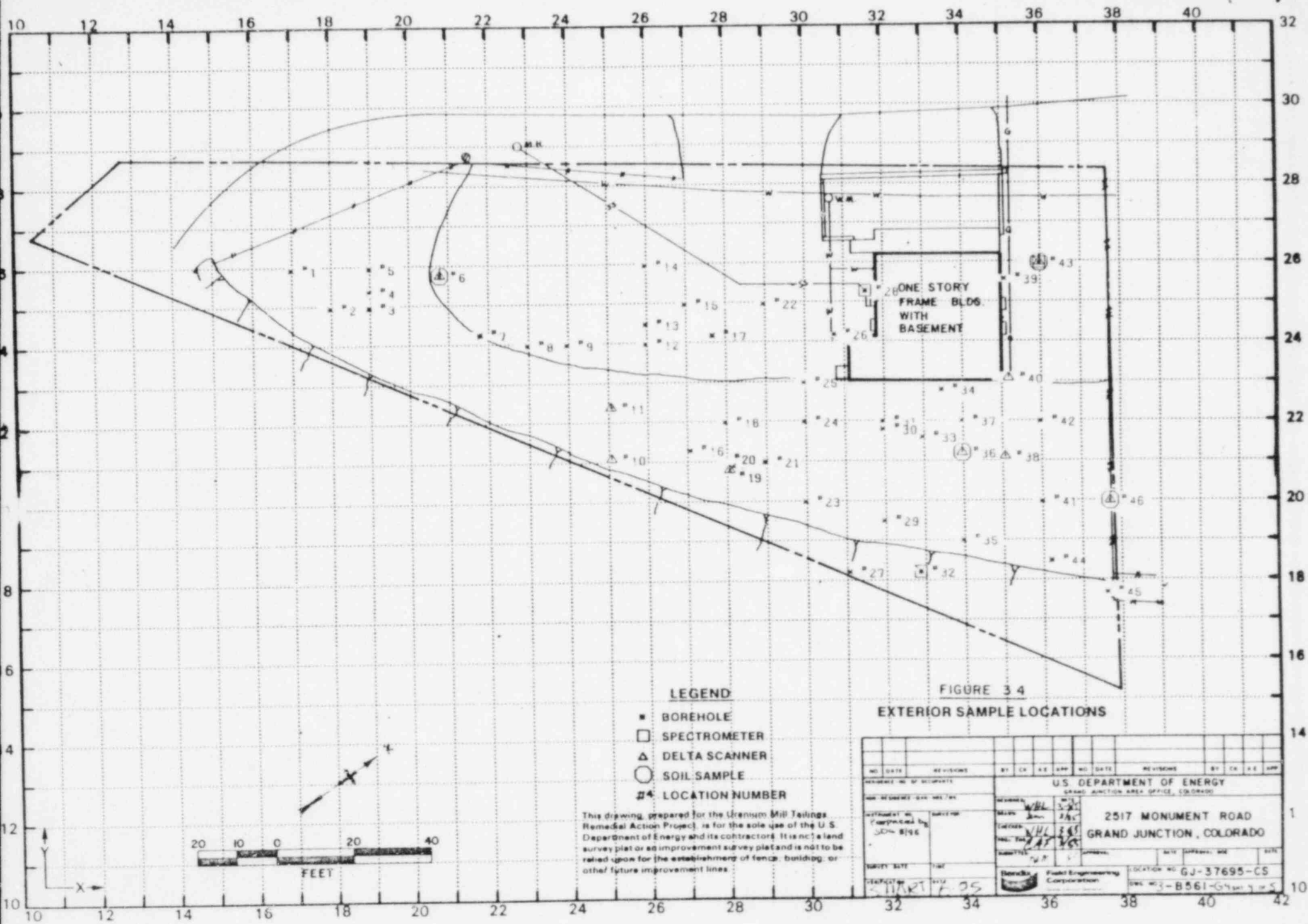




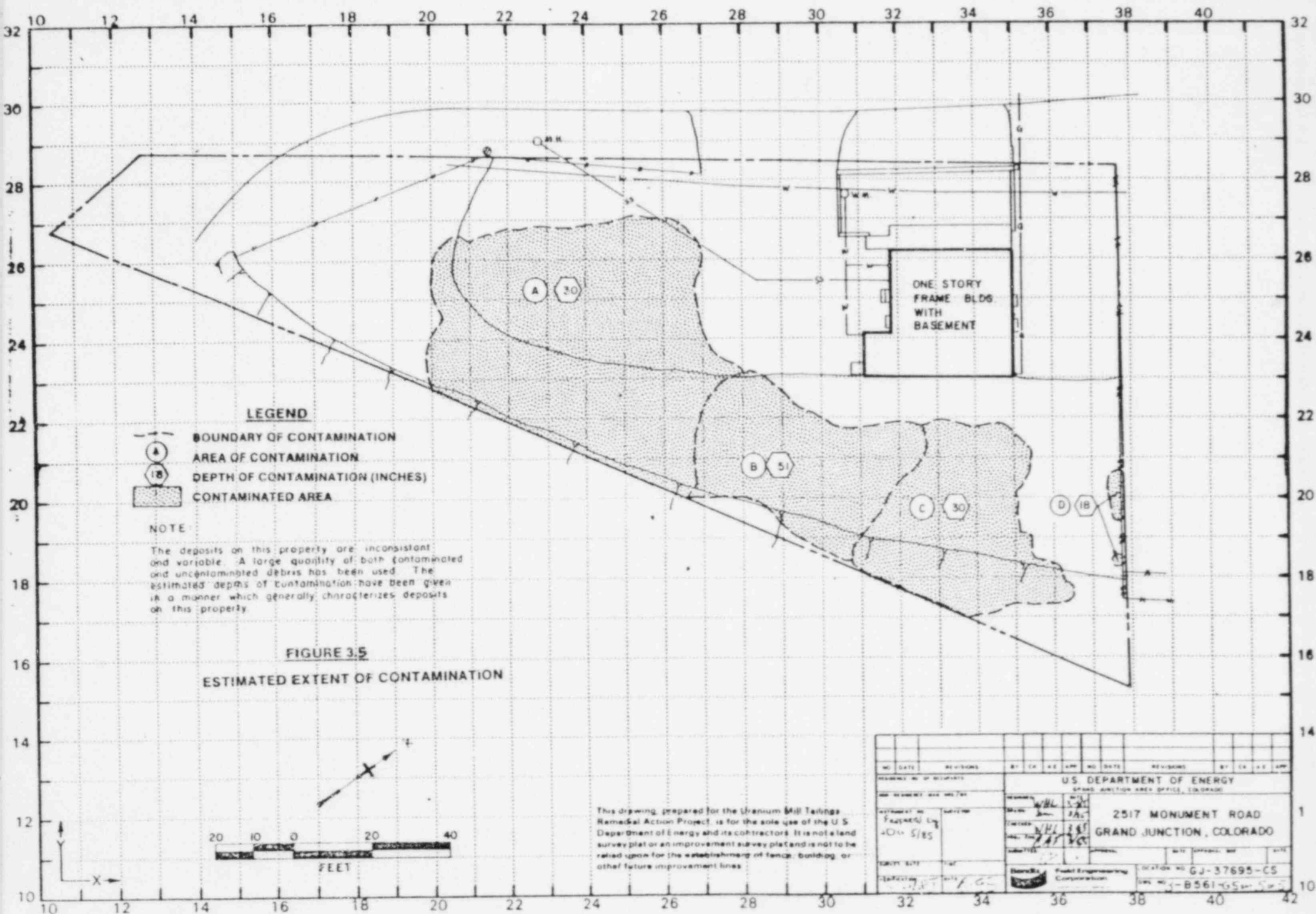












3/85

DOE ID NO. GJ-37695- CS Date 5/20/85

U.S. DEPARTMENT OF ENERGY  
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT  
GRAND JUNCTION VICINITY PROPERTIES

Official Survey Report

Property Address 2517 South Monument Road

Property Owner Robert and Lana Turrou

Address of Owner (if different from above) 2186 Buffalo Drive

Report Prepared By James D. Garcia

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

1 1 No evidence of residual radioactive material on surveyed property.

1 XXXX 1 Residual radioactive materials found at the following locations:

XXXX 1 In open areas.

1 1 Under or around exterior improvements.

1 1 Under or around a typically nonoccupied structure.

1 1 Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

1 1 Levels of radiation from residual radioactive materials, if any, do not exceed EPA Standards and no action is required under the Uranium Mill Tailings Remedial Action Project.

1 XXXX 1 Levels of radiation from residual radioactive materials exceed EPA Standards such that Remedial Action is recommended and will be accomplished, with your consent, as soon as budget and schedule permit.

cc:

G. A. Franz, III, GJ/CDE

J. Themelis, Mgr. UMTRA Proj. Off.

HIG = 16 uR/h  
HOG = 120 uR/h



Bendix  
Aerospace

Bendix Field Engineering Corporation  
P. O. Box 1569  
Grand Junction, CO 81502-1569  
Telephone (303) 242-8621  
Telex: 454-338

April 24, 1985

Colorado Department of Health  
222 South 6th Street  
Grand Junction, Colorado 81501

ATTN: Jon Luellen

Dear Jon:

The following is in response to your questions and comments during the Technical Review concerning Department of Energy (DOE) Identification (ID) number GJ-37695-CS.

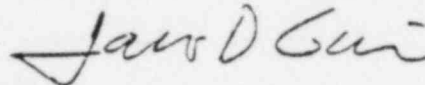
1. The area located southeast of the building has been sampled and we did locate the buried deposit you mentioned. Several holes were augered in areas, as per your suggestion.
2. The area of thick brush was scanned and some contamination was found, but we were still unable to perform depth samples because of the thick overgrowth. It has been noted that this area should be checked during removal.
3. The depth in sample location number 6 was called according to current Bendix procedure.
4. The Radium Concentration Table has been corrected to read greater than 90-inches instead of equal to 90-inches.
5. The term 'greater than' has been used to describe location number 3 because of an auger refusal at this location.
6. Depth of contamination at borehole number 10 (311182) has been called according to current Bendix procedure.
7. Depth of contamination in borehole number 13 (329182) has been called according to current Bendix procedure.
8. Deeper auger holes in the same area of location numbers 12 and 15 were performed to check for shielded deposits.



9. Depth of contamination in borehole number 17 (351211) has been called according to current Bendix procedure.
10. Deeper exploration has been performed in this area to check for a shielded deposit.
11. Deeper exploration has been performed in this area to check for a shielded deposit.
12. Deeper exploration has been performed in this area to located shielded deposits.
13. As per our conversation, the address provided by Mesa County Road Department was 2517 Monument Road.

Thank you for your time and cooperation. If you should have additional questions or comments you may contact me at 242-8621, extension 475.

Very truly yours,



James Garcia  
RSD Survey Team

JG:pr

MEMORANDUM

ALLIED Bendix  
Aerospace

Bendix Field Engineering Corporation  
Grand Junction Operations  
Grand Junction, Colorado

Date: April 18, 1985

To: Files

From: James Garcia

*James D. Garcia*

Subject: Team Leader Notes - GJ-37695-CS

Owner: Robert and Lana Turrou

Address: 2517 South Monument

Telephone: (303) 245-4060 or 245-0562

Date: March 29, 1985

While writing the site survey plan I found it difficult to understand the Colorado Department of Health (CDH) information that was supplied to me, so I contacted Elaine Brummett by telephone. She informed me that when the building permit survey was performed, the tailings material was buried in a trench 1-foot deep and 1-foot wide under 4-feet of fill.

Team Members

J. Garcia (Team Leader)  
D. Dow  
N. Wallace  
P. Hardy

C. Adams  
R. Wilkins  
A. Quintana  
K. Cary

Instruments

Scintillometers - C-3510, C-3502, C-1128, C-1247, C-1021, C-1213,  
C-1149  
Delta Scintillometers - C-3940, C-3943  
Total Count (PRS-1) - C-3573, C-3943  
Downhole Spectrometer - C0498

Team Leader Notes

James Garcia

GJ-37695-~~RECS~~ *my 7/85*

April 18, 1985

Page 2

Date: April 1, 1985

It was requested by the homeowner that we not use flags when gridding his property. He also requested that we perform the interior survey after 12:00 P.M. and before 2:00 P.M.

The water main was checked and readings of 100 to 120 cps were obtained.

On the southeast boundary was an area we were unable to grid or scan because of thick brush and trees, and a steep embankment.

When this area was dug out for the basement, they shoveled the material over the edge of the property to extend the property and make it level.

I questioned Mr. Turrou on whether any of the material was brought in or if it was from the building site. Mr. Turrou informed me that they did bring some material in but it was mainly for the parking lot area. They brought in gravel for that.

A cross-section drawing of an area along the embankment using information from sample locations 3, 5, 6, 7, and 8 are included. I intend for this to help illustrate the contamination for this area.

I believe the area that was inaccessible should be checked since it is situated between two contaminated areas. It should be easier to check during removal when the area is somewhat leveled out.

Team Leader Notes

James Garcia

GJ-37695-RS *CS myp 7/86*

April 18, 1985

Page 3

Revisit

Date: April 11, 1985

Instrument

Delta - C-3942

A revisit was made, so that a check on the area at sample location number 1 could be performed with a delta, to confirm the depth of contamination for this area. Delta information shows the depth of contamination to be 6-inches.

Date: April 12, 1985

Taken to CDH, awaiting technical review.

Revisit

Team Members

J. Garcia (Team Leader)

B. Moody

M. Durran

J. Hebel

D. Dow

Instruments

Scintillometer - C-1149

Total Count - C-3573

Team Leader Notes

James Garcia

GJ-37695-RSCS

April 18, 1985

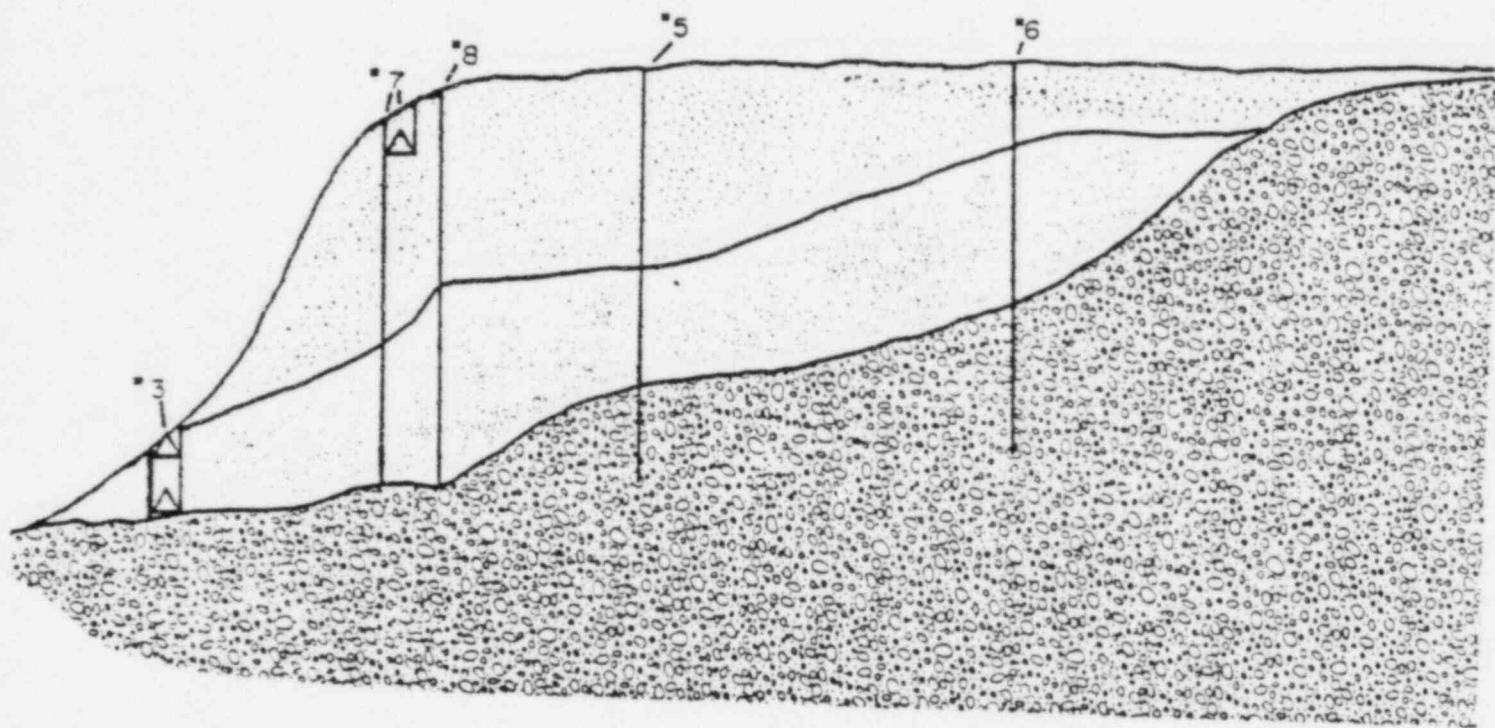
Page 4

my 7.25

Date: April 18, 1985

Team members augered several holes starting from the north and moving south. We discovered several deposits that were not located during the gamma survey. Many of these areas will need to be monitored closely during removal because of the possibility of other isolated deposits that may be shielded from the surface.

SUPPLEMENT TO TEAM LEADER NOTES



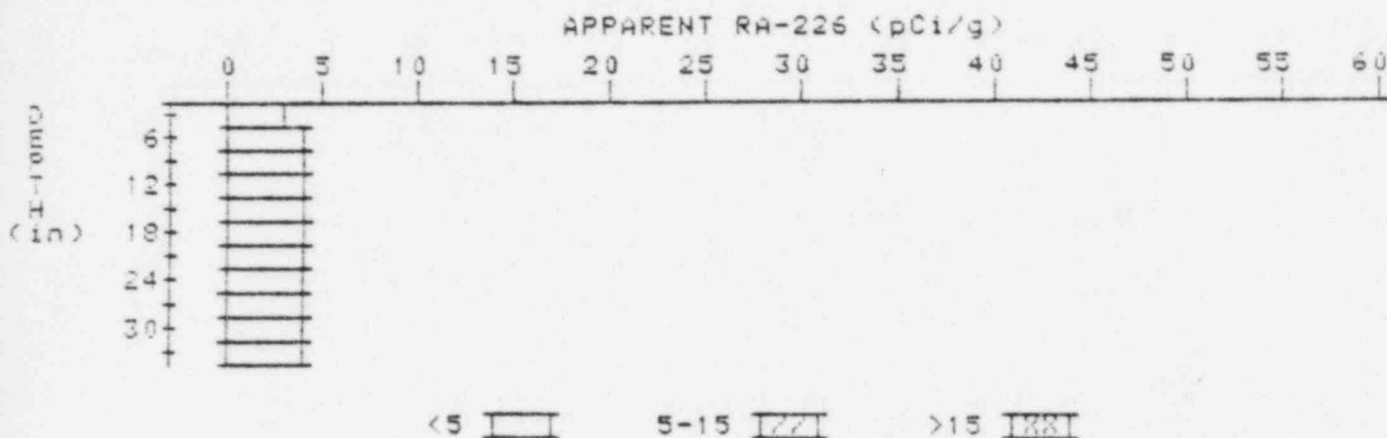
LEGEND

-  original base material
-  Tailings material
-  Tailings & Gravel mixed
-  Gravel
-  Delta
-  Sample location
-  Borehole

# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

1

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 1  
LOCATION: 170260

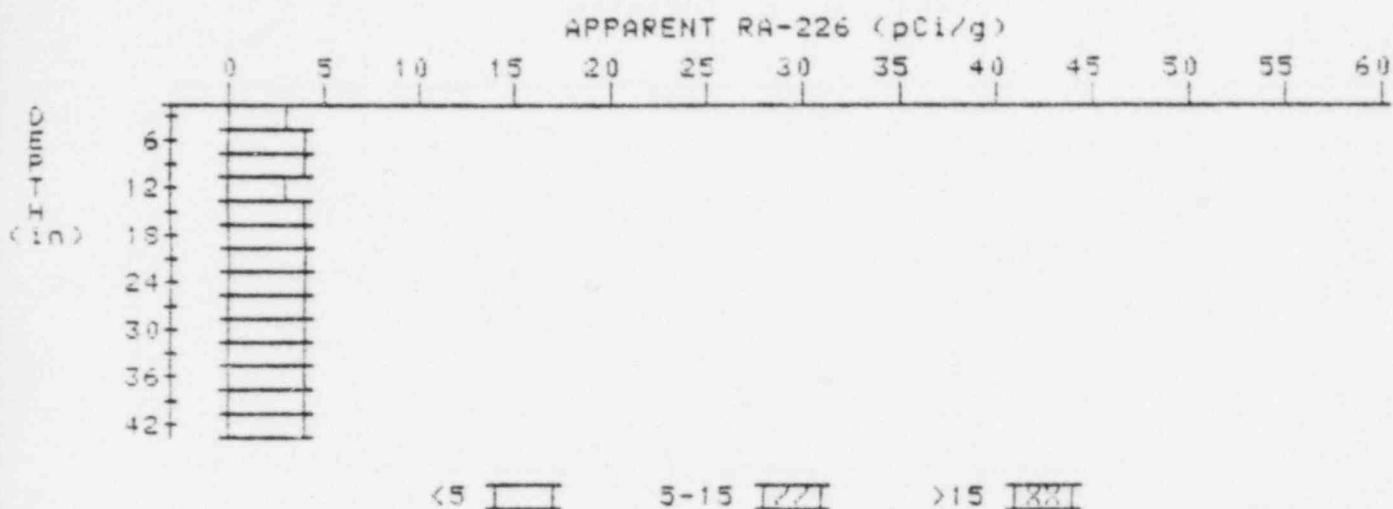


Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	3.0	3.0
6	3.5	4.0
9	3.7	3.9
12	3.8	3.6
15	4.0	4.2
18	4.1	4.3
21	4.1	4.1
24	4.1	4.3
27	4.0	3.8
30	4.0	4.4
33	3.8	3.8

# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

2

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 2  
LOCATION: 180250

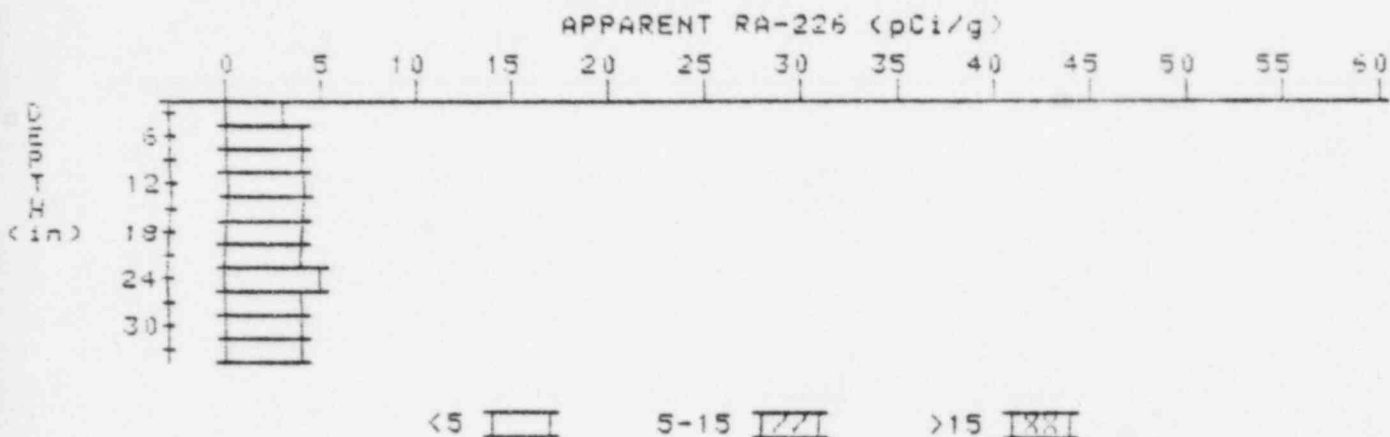


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.3	3.3
6	3.7	4.2
9	3.8	4.0
12	3.8	3.4
15	4.0	4.4
18	4.0	4.0
21	4.0	3.8
24	4.1	4.3
27	4.1	4.1
30	4.1	4.3
33	4.0	3.8
36	4.0	4.2
39	3.9	3.9
42	3.2	3.8



# APPARENT RADIUM-226 CONCENTRATION 3 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 3  
LOCATION: 190250



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.5	3.7
9	3.7	3.7
12	3.9	4.1
15	4.0	4.0
18	4.1	4.3
21	4.1	3.9
24	4.2	4.6
27	4.1	3.9
30	4.1	4.1
33	4.1	4.1

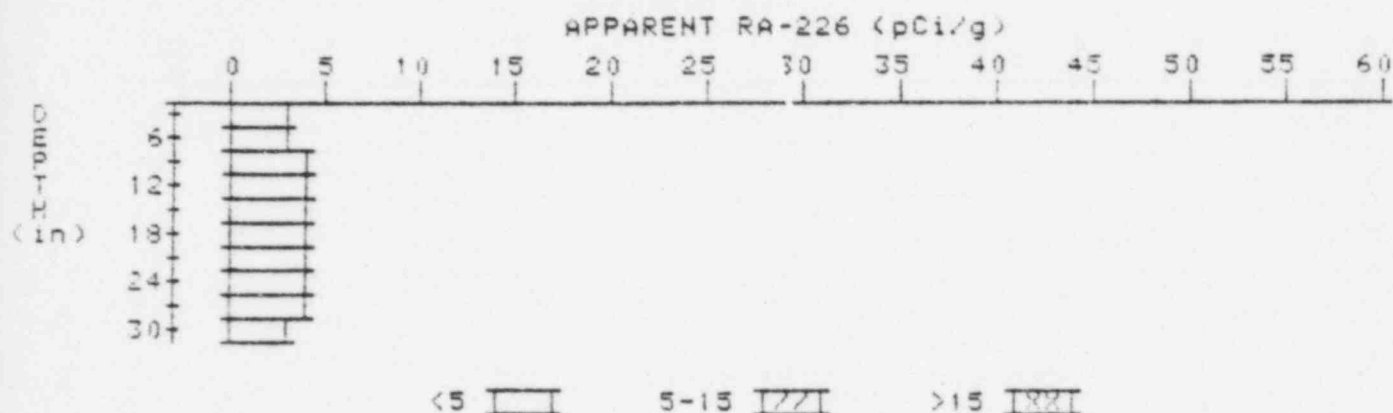
# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

4

PROPERTY NUMBER: GJ-37695-CS

HOLE NUMBER: 4

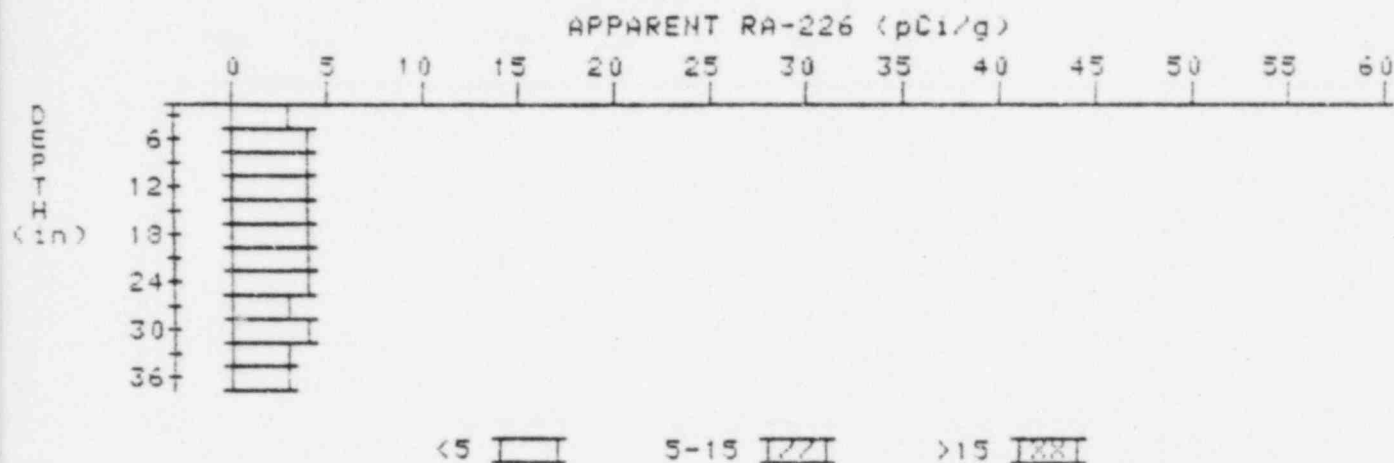
LOCATION: 190254



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.3	3.1
9	3.7	4.1
12	3.9	4.3
15	3.9	3.7
18	4.0	4.4
21	3.9	3.7
24	3.9	4.3
27	3.7	4.1
30	3.3	3.3

# APPARENT RADIUM-226 CONCENTRATION 5 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 5  
LOCATION: 190260



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.5	3.7
9	3.7	3.7
12	3.9	4.1
15	4.0	4.2
18	4.0	4.2
21	3.9	4.1
24	3.7	3.7
27	3.5	3.3
30	3.4	3.3
33	3.1	2.7
36	3.0	3.0

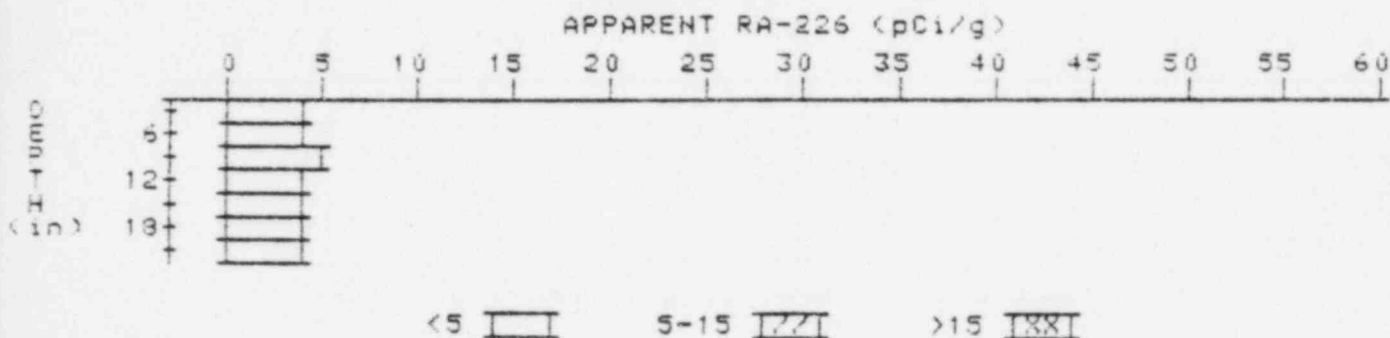
# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

6

PROPERTY NUMBER: GJ-37695-CS

HOLE NUMBER: 6

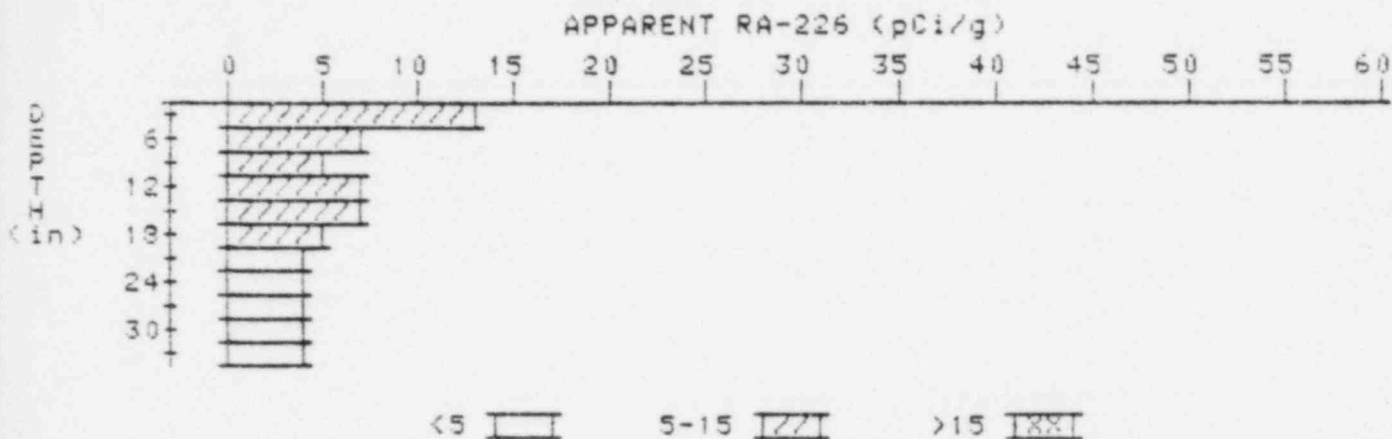
LOCATION: 209258



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.1	4.1
6	4.2	4.2
9	4.3	4.7
12	4.2	3.9
15	4.3	4.5
18	4.3	4.1
21	4.4	4.4

# APPARENT RADIUM-226 CONCENTRATION 7 DECONVOLUTION GRAPH

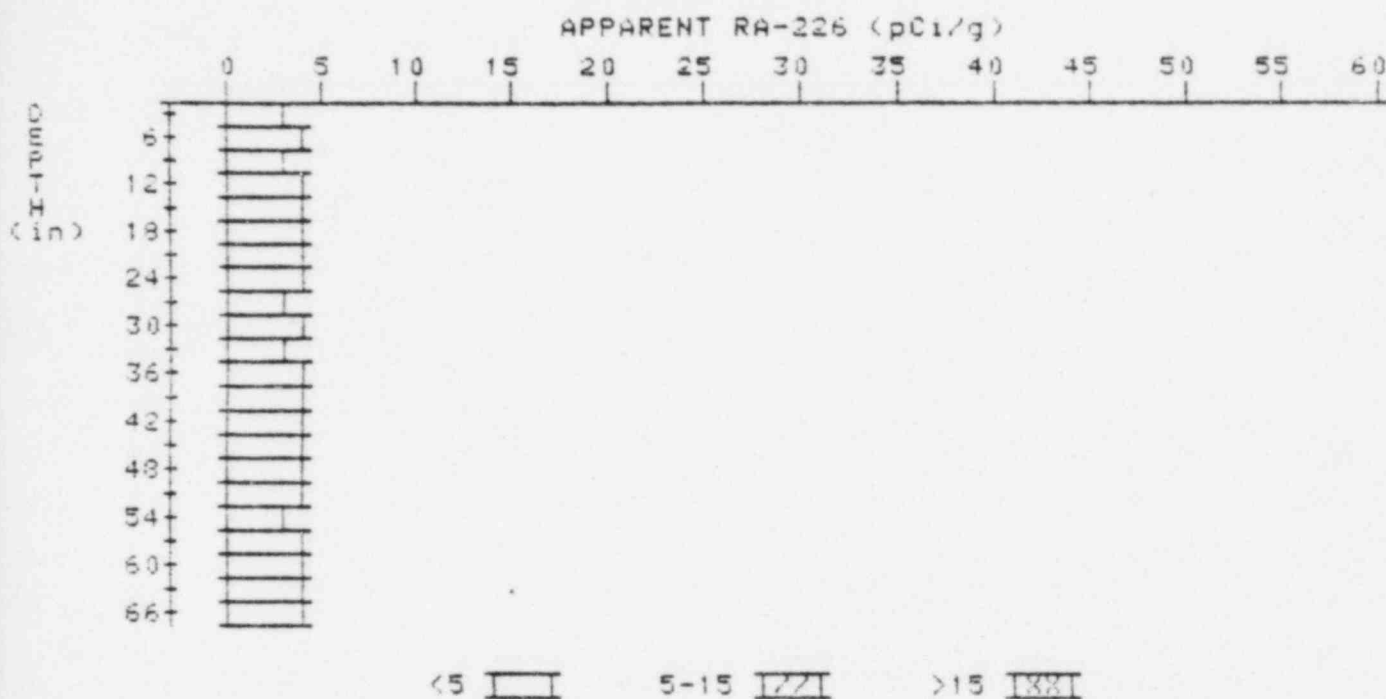
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 7  
LOCATION: 218243



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	13.0	13.0
6	9.6	7.1
9	7.6	5.3
12	6.9	6.7
15	6.3	6.7
18	5.5	5.3
21	4.8	4.4
24	4.3	3.8
27	4.1	3.9
30	4.0	3.6
33	4.1	4.1

# APPARENT RADIUM-226 CONCENTRATION 8 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 8  
LOCATION: 230240



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.3	3.3
6	3.6	4.1
9	3.6	3.4
12	3.7	3.9
15	3.7	3.5
18	3.8	4.0
21	3.8	3.8
24	3.8	4.0
27	3.7	3.3
30	3.8	4.2
33	3.7	3.8
36	3.8	4.0
39	3.8	3.8
42	3.8	3.8
45	3.8	3.8
48	3.8	3.8

51	3.8	4.0
54	3.7	3.3
57	3.8	4.2
60	3.7	3.5
63	3.7	3.7
66	3.7	3.7

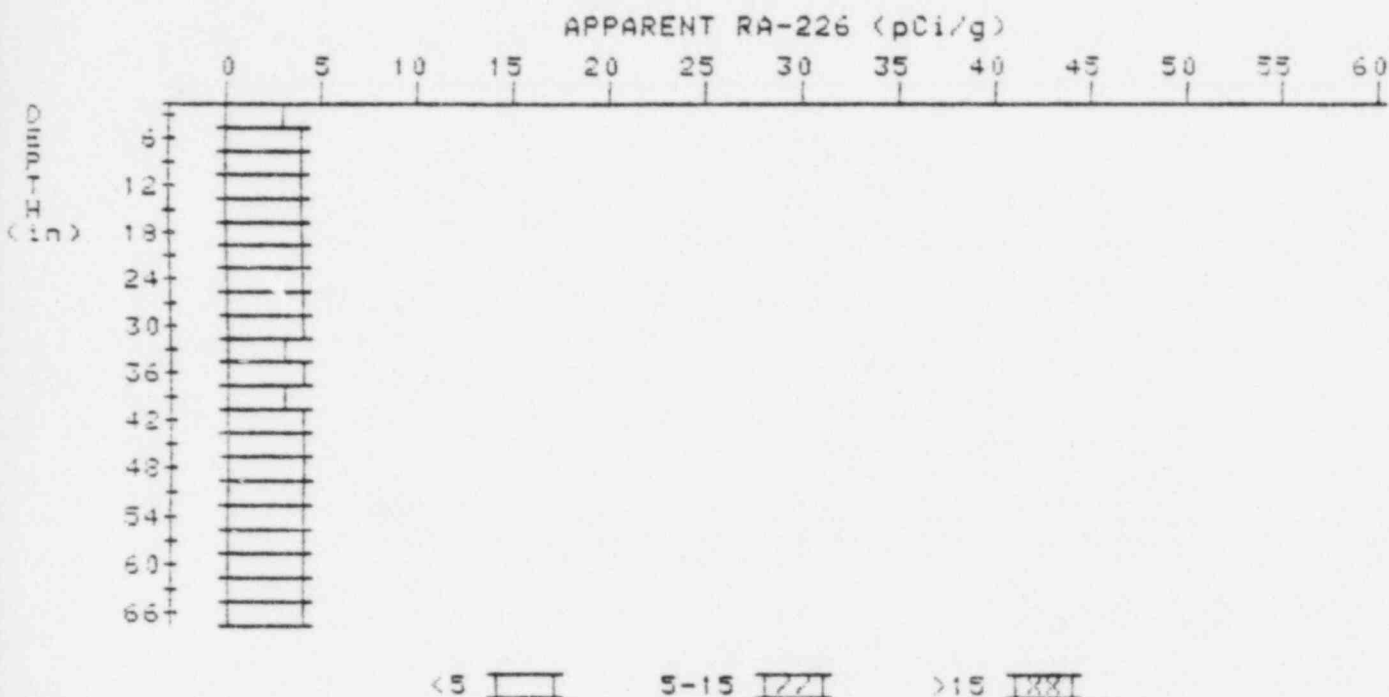
# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

9

PROPERTY NUMBER: GJ-37695-CS

HOLE NUMBER: 9

LOCATION: 240240



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.3	3.3
6	3.5	3.5
9	3.7	3.9
12	3.8	4.0
15	3.8	3.8
18	3.8	4.0
21	3.7	3.8
24	3.7	3.7
27	3.7	3.7
30	3.7	3.9
33	3.6	3.4
36	3.6	3.5
39	3.6	3.4
42	3.7	3.9
45	3.7	3.7
48	3.7	3.7



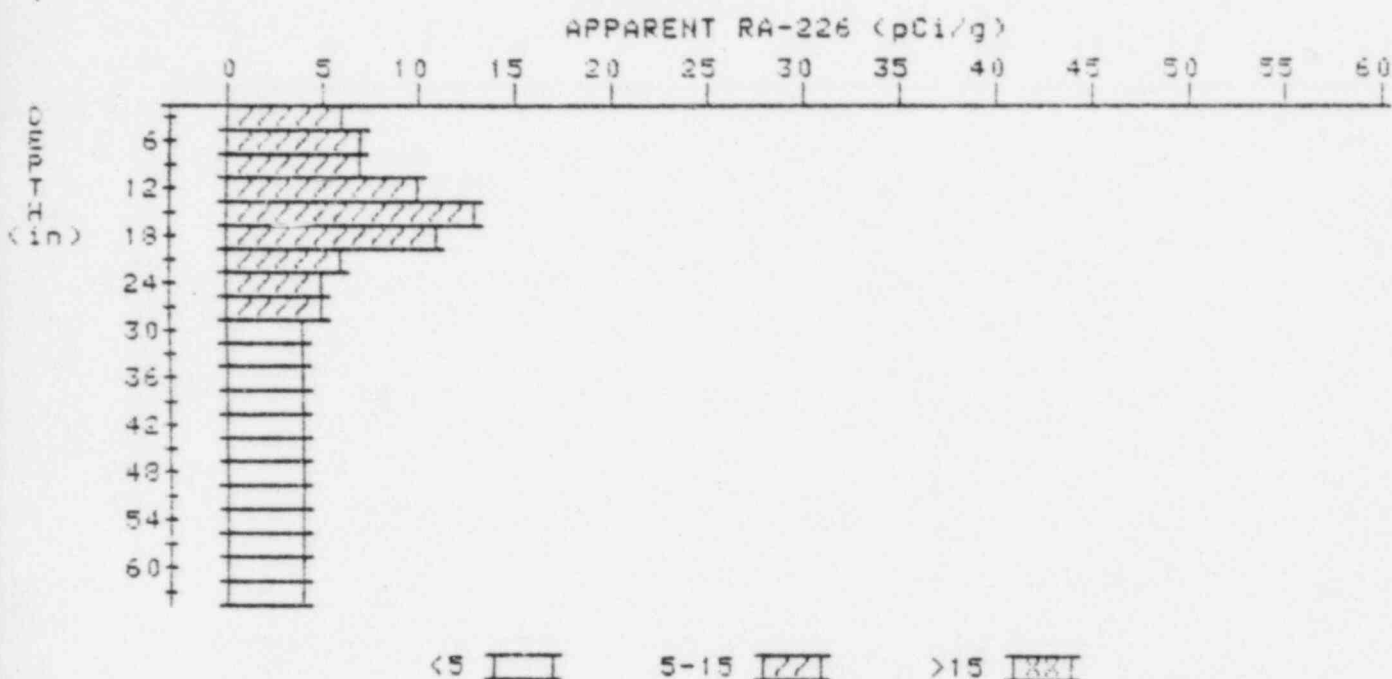
51  
54  
57  
60  
63  
66

3.7  
3.7  
3.8  
3.8  
3.8  
3.8

3.7  
3.5  
4.0  
3.8  
3.8  
3.8

# APPARENT RADIUM-226 CONCENTRATION 11 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 11  
LOCATION: 251224



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.2	6.2
6	6.9	6.5
9	7.3	7.3
12	9.0	9.7
15	9.3	12.6
18	9.0	11.0
21	7.1	5.9
24	5.9	5.0
27	5.2	5.0
30	4.6	4.1
33	4.3	3.9
36	4.2	4.4
39	4.0	3.6
42	3.9	3.5
45	4.0	4.4
48	3.9	3.9
51	3.6	3.6

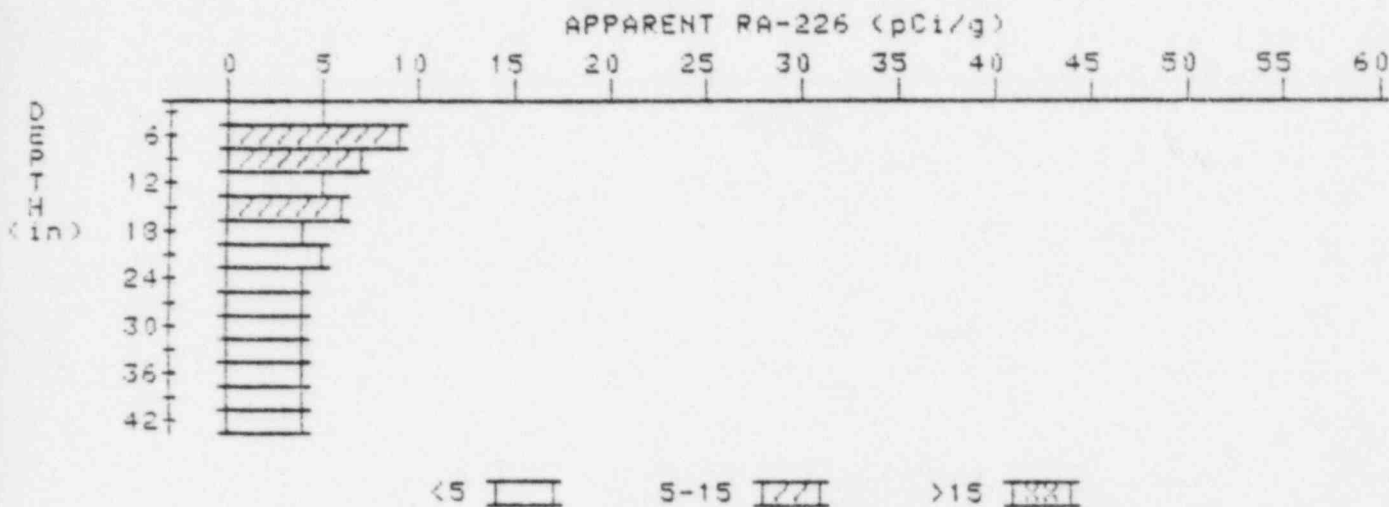
54  
57  
60  
63

3.8  
3.9  
3.8  
3.8

3.6  
4.3  
3.6  
3.8

# APPARENT RADIUM-226 CONCENTRATION 12 DECONVOLUTION GRAPH

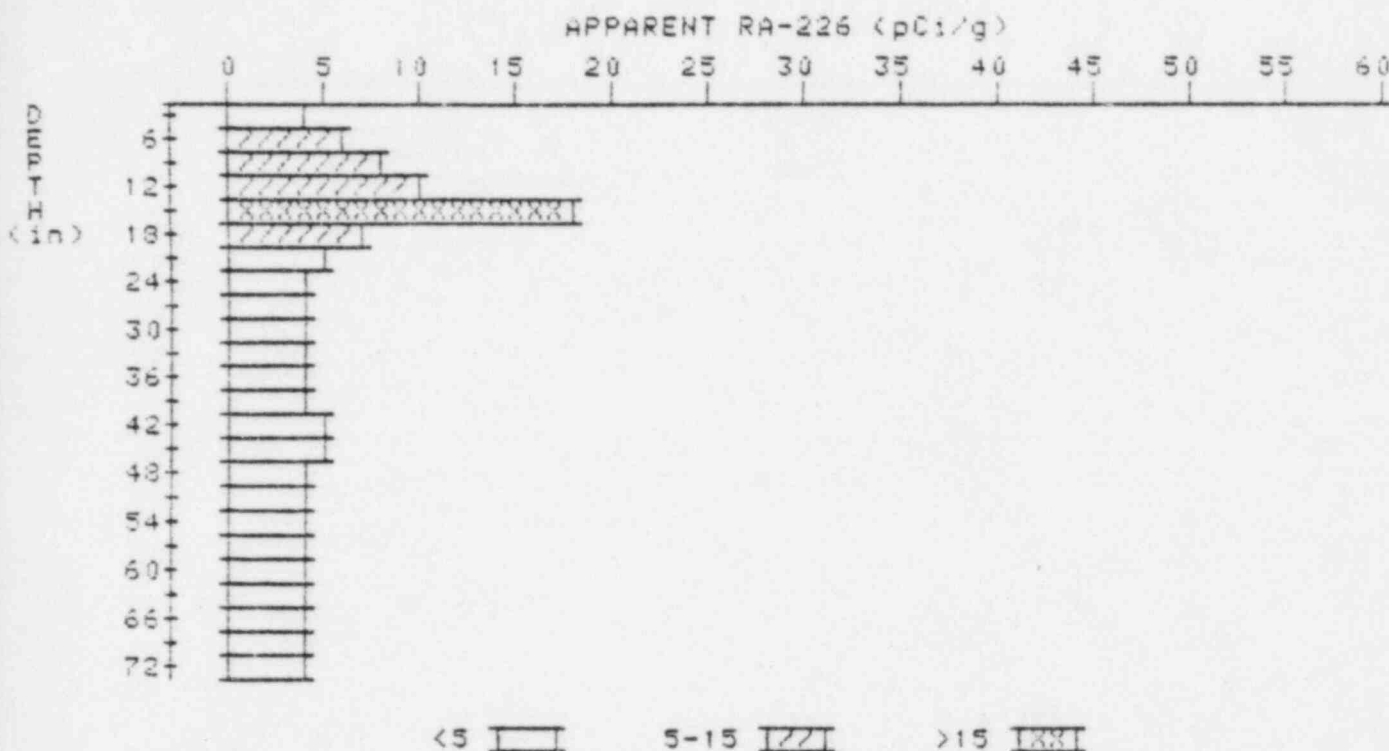
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 12  
LOCATION: 260240



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.6	4.6
6	6.1	3.3
9	6.1	7.2
12	5.5	5.0
15	5.2	5.6
18	4.7	4.2
21	4.5	4.3
24	4.3	3.9
27	4.3	4.3
30	4.2	4.2
33	4.1	3.9
36	4.1	4.1
39	4.1	4.3
42	4.0	4.0

# APPARENT RADIUM-226 CONCENTRATION 13 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 13  
LOCATION: 260245

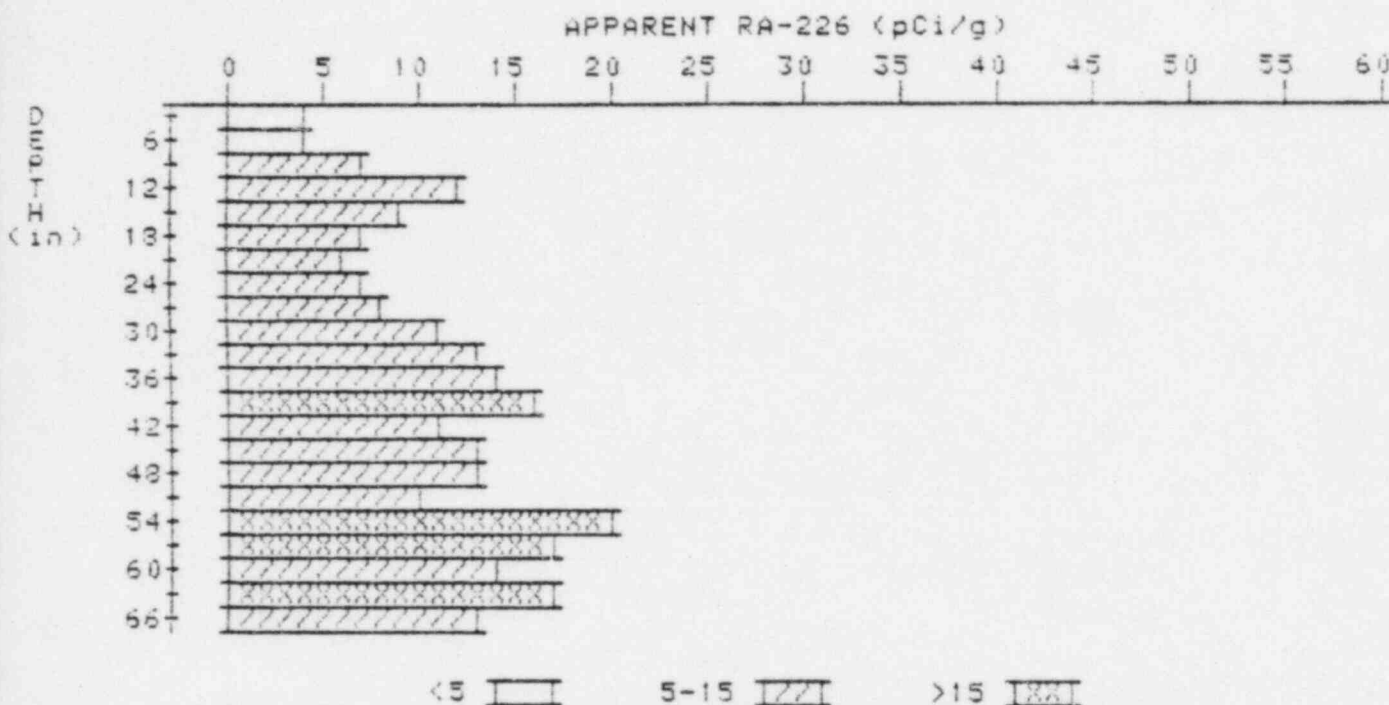


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.2	4.2
6	6.1	6.3
9	7.9	7.9
12	9.7	10.4
15	11.1	10.4
18	8.4	7.2
21	6.4	4.8
24	5.3	4.4
27	4.7	4.2
30	4.4	4.0
33	4.3	4.3
36	4.2	3.8
39	4.3	4.3
42	4.4	4.5
45	4.4	4.5

48	4.3	4.3
51	4.2	4.2
54	4.1	3.9
57	4.1	4.1
60	4.1	4.3
63	4.0	3.8
66	4.0	4.0
69	4.0	4.0
72	4.0	4.0

# APPARENT RADIUM-226 CONCENTRATION 14 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 14  
LOCATION: 260260



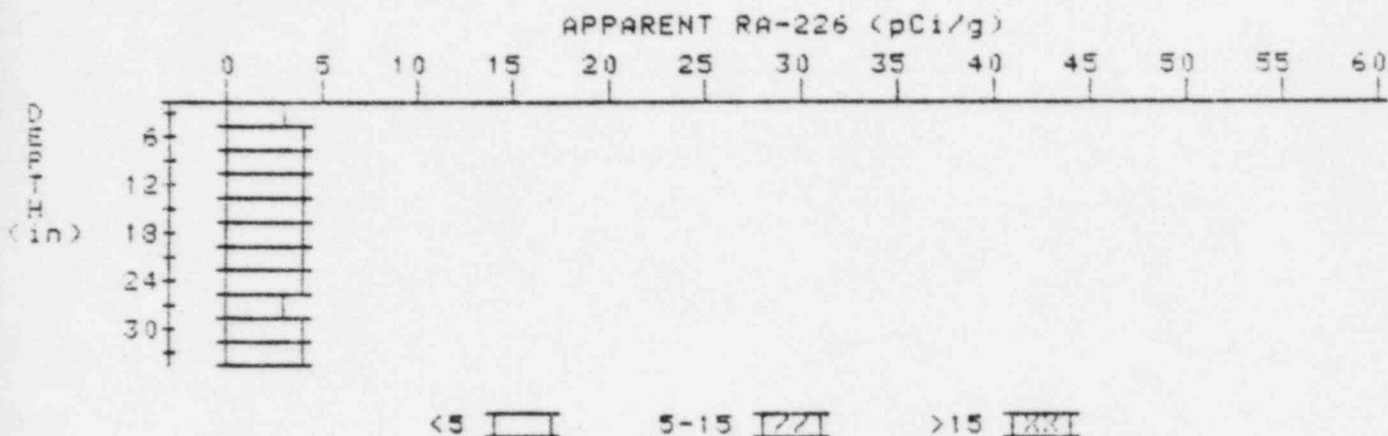
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.9	3.9
6	5.1	4.0
9	6.9	7.3
12	8.5	11.7
15	8.3	9.2
18	7.6	6.9
21	7.3	5.7
24	7.9	6.8
27	9.1	8.4
30	10.7	11.2
33	12.0	12.5
36	13.0	13.9
39	13.5	15.6
42	12.8	11.0
45	13.1	13.5
48	13.2	13.0

51	13.4	9.7
54	15.7	19.6
57	15.8	17.0
60	15.2	14.5
63	15.0	17.5
66	13.4	13.4



# APPARENT RADIUM-226 CONCENTRATION 15 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 15  
LOCATION: 270250



Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	2.9	2.9
6	3.5	4.0
9	3.8	4.0
12	4.0	4.2
15	4.1	4.3
18	4.1	4.1
21	4.1	4.1
24	4.1	4.5
27	3.9	3.4
30	4.0	4.2
33	4.0	4.0

# APPARENT RADIUM-226 CONCENTRATION 16

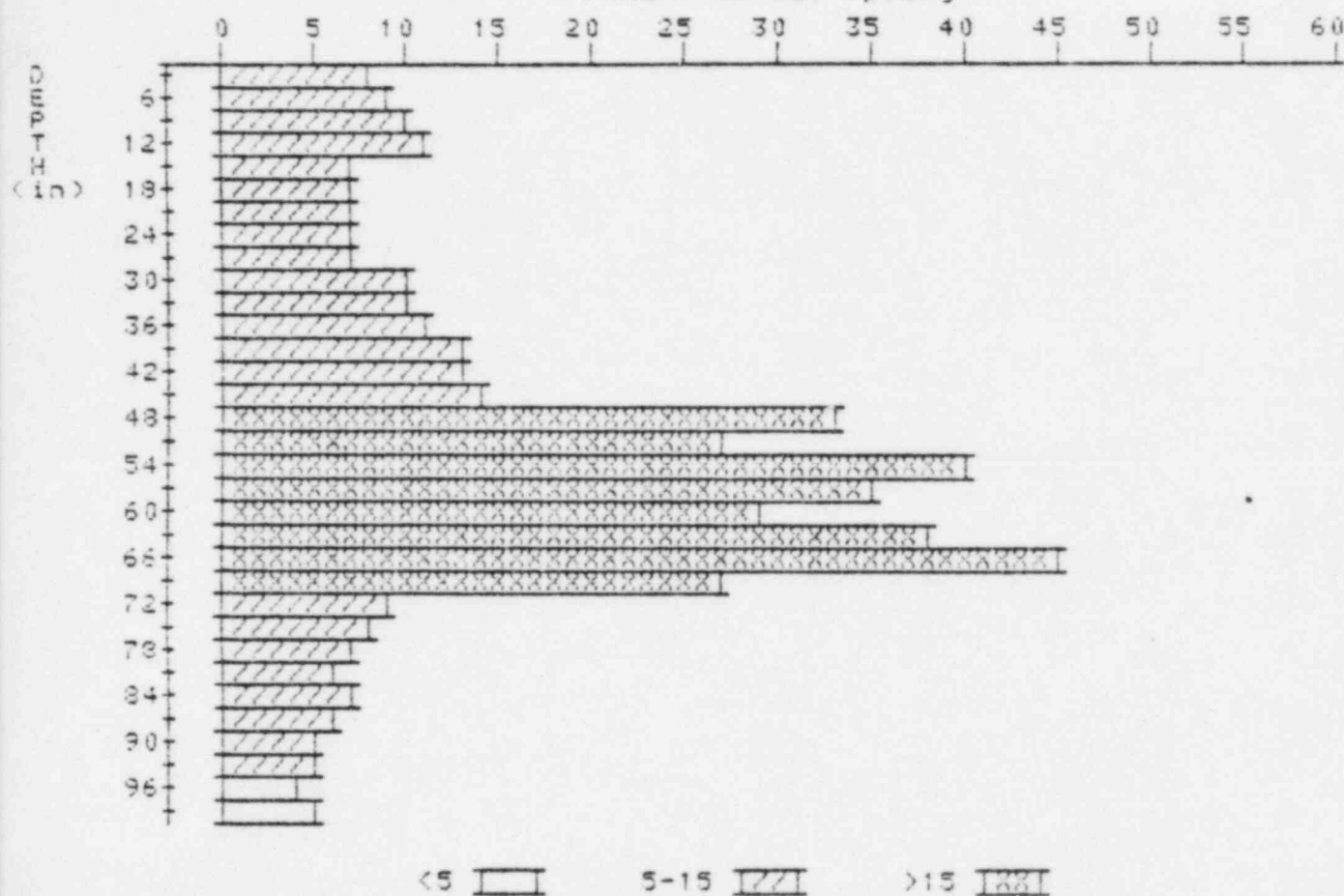
## DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS

HOLE NUMBER: 16

LOCATION: 271213

APPARENT RA-226 (pCi/g)



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.1	8.1
6	8.6	8.6
9	9.1	10.2
12	9.0	10.6
15	8.0	6.9
18	7.6	7.1
21	7.5	7.1
24	7.6	6.5

27	8.3	7.4
30	9.5	9.9
33	10.5	9.8
36	11.9	11.2
39	13.7	13.2
42	15.8	13.0
45	19.5	14.0
48	26.3	33.2
51	29.2	27.4
54	33.1	39.5
57	33.4	35.4
60	32.6	28.9
63	33.9	37.8
66	33.0	45.1
69	25.3	27.1
72	16.6	9.5
75	11.9	8.3
78	9.2	7.2
81	7.6	6.2
84	6.8	6.6
87	6.1	5.7
90	5.6	5.4
93	5.2	5.2
96	4.8	4.1
99	4.8	4.8

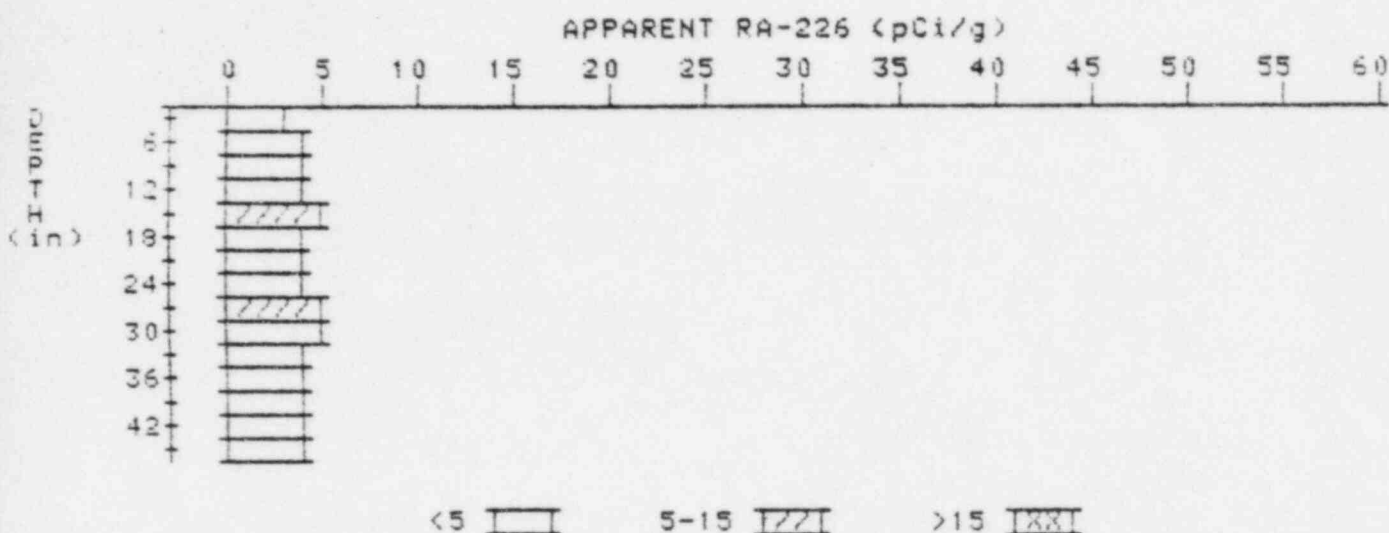
# APPARENT RADIUM-226 CONCENTRATION 17

## DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS

HOLE NUMBER: 17

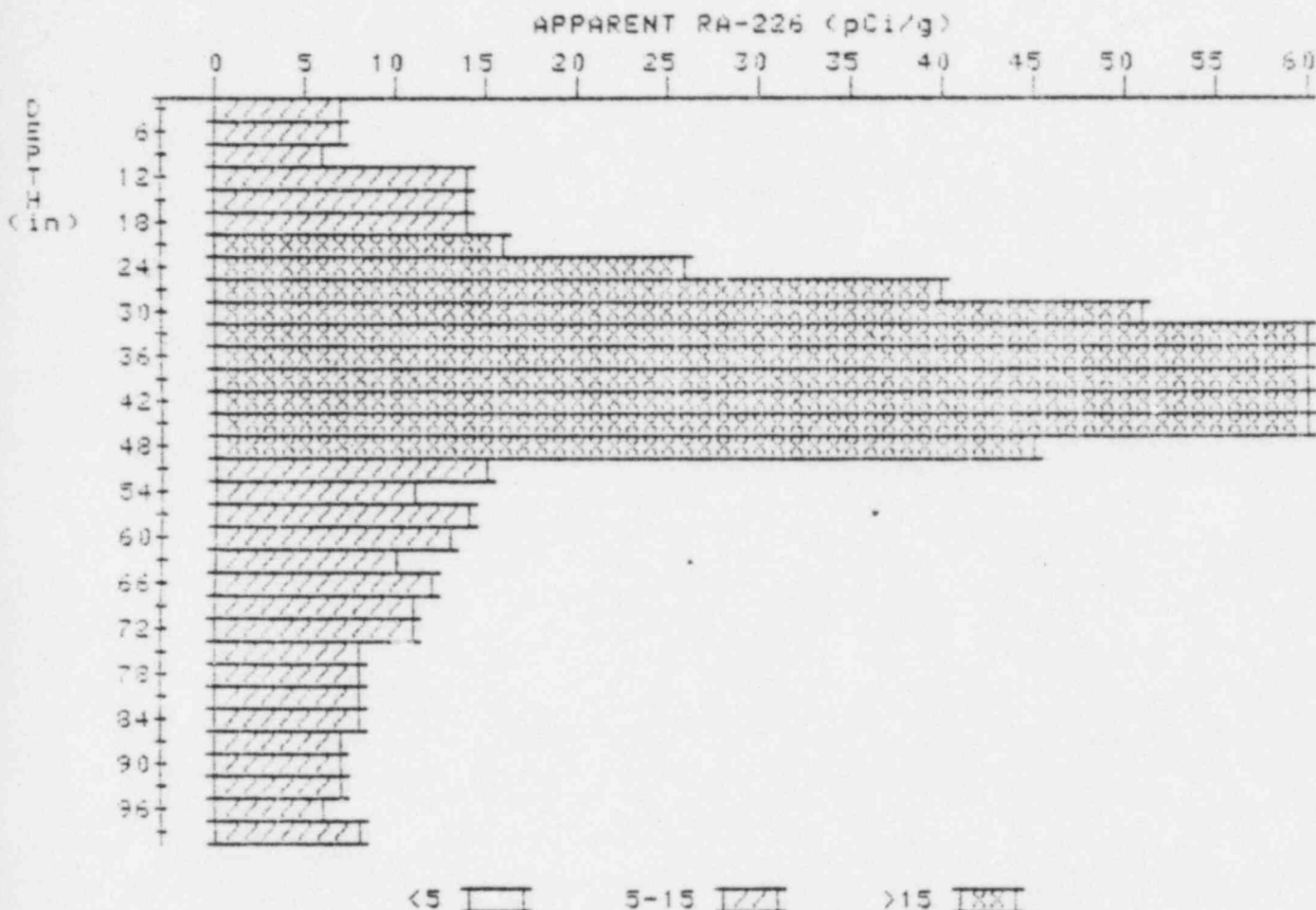
LOCATION: 277242



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.9	2.9
6	3.4	3.6
9	3.8	3.8
12	4.2	4.4
15	4.5	5.2
18	4.4	4.2
21	4.4	4.2
24	4.5	4.3
27	4.7	5.2
30	4.6	4.8
33	4.4	4.2
36	4.3	4.3
39	4.2	4.2
42	4.1	3.9
45	4.1	4.1

# APPARENT RADIUM-226 CONCENTRATION 18 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 18  
LOCATION: 280220

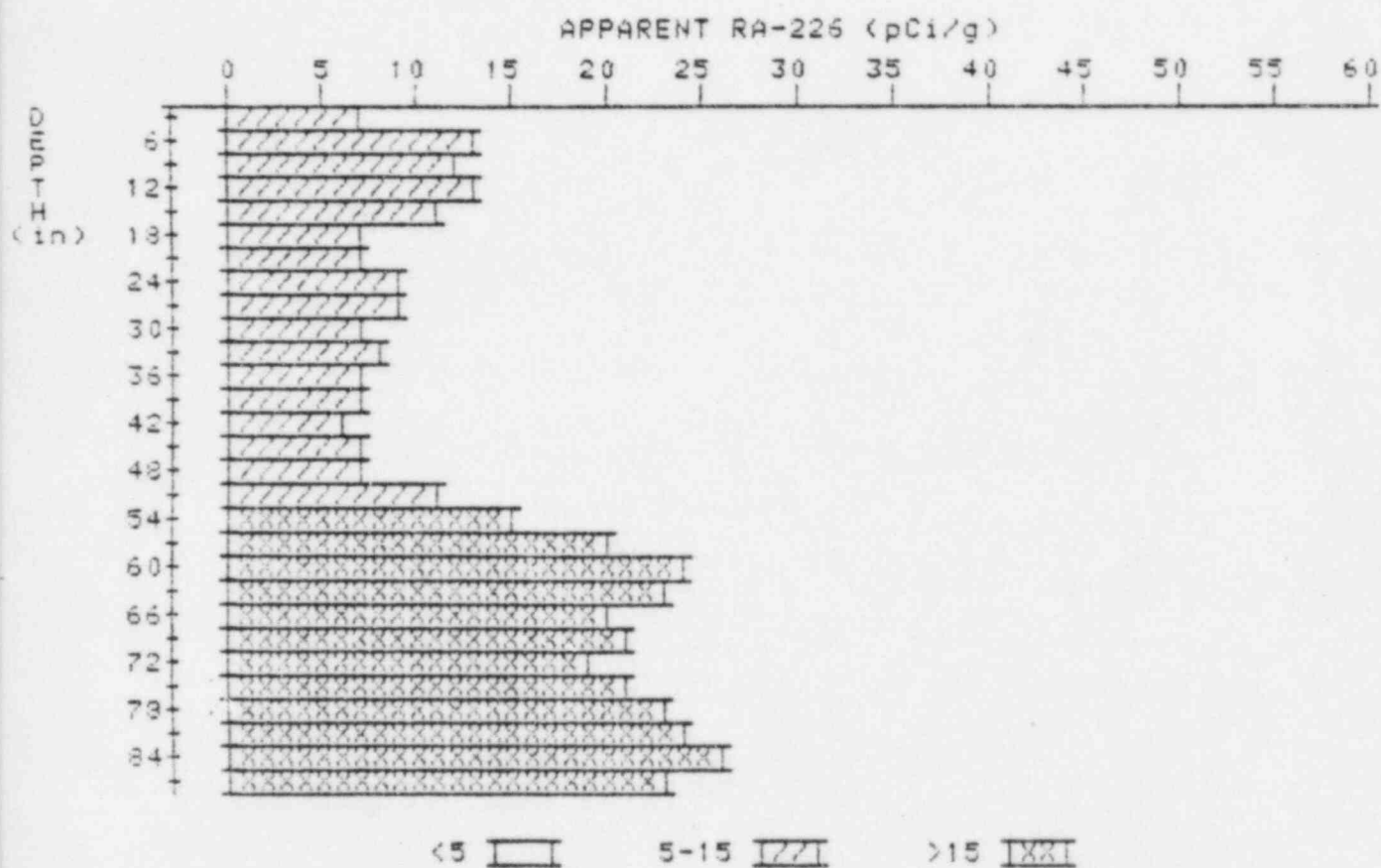


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.9	6.9
6	8.0	7.5
9	9.4	6.4
12	12.5	13.6
15	13.0	14.3
18	17.9	13.8
21	23.1	16.0
24	32.3	26.4

27	44.8	39.6
30	60.2	51.1
33	30.7	36.4
36	93.0	112.9
39	106.9	133.4
42	93.1	111.3
45	31.9	101.1
48	54.9	45.1
51	33.4	14.7
54	22.4	11.4
57	17.6	14.4
60	14.6	13.2
63	12.4	9.7
66	11.7	11.7
69	11.0	11.2
72	10.2	10.7
75	9.1	8.4
78	8.4	7.9
81	8.0	7.6
84	7.8	6.2
87	7.4	7.0
90	7.2	6.8
93	7.2	7.4
96	7.1	6.2
99	7.5	7.5

# APPARENT RADIUM-226 CONCENTRATION 19 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 19  
LOCATION: 291208



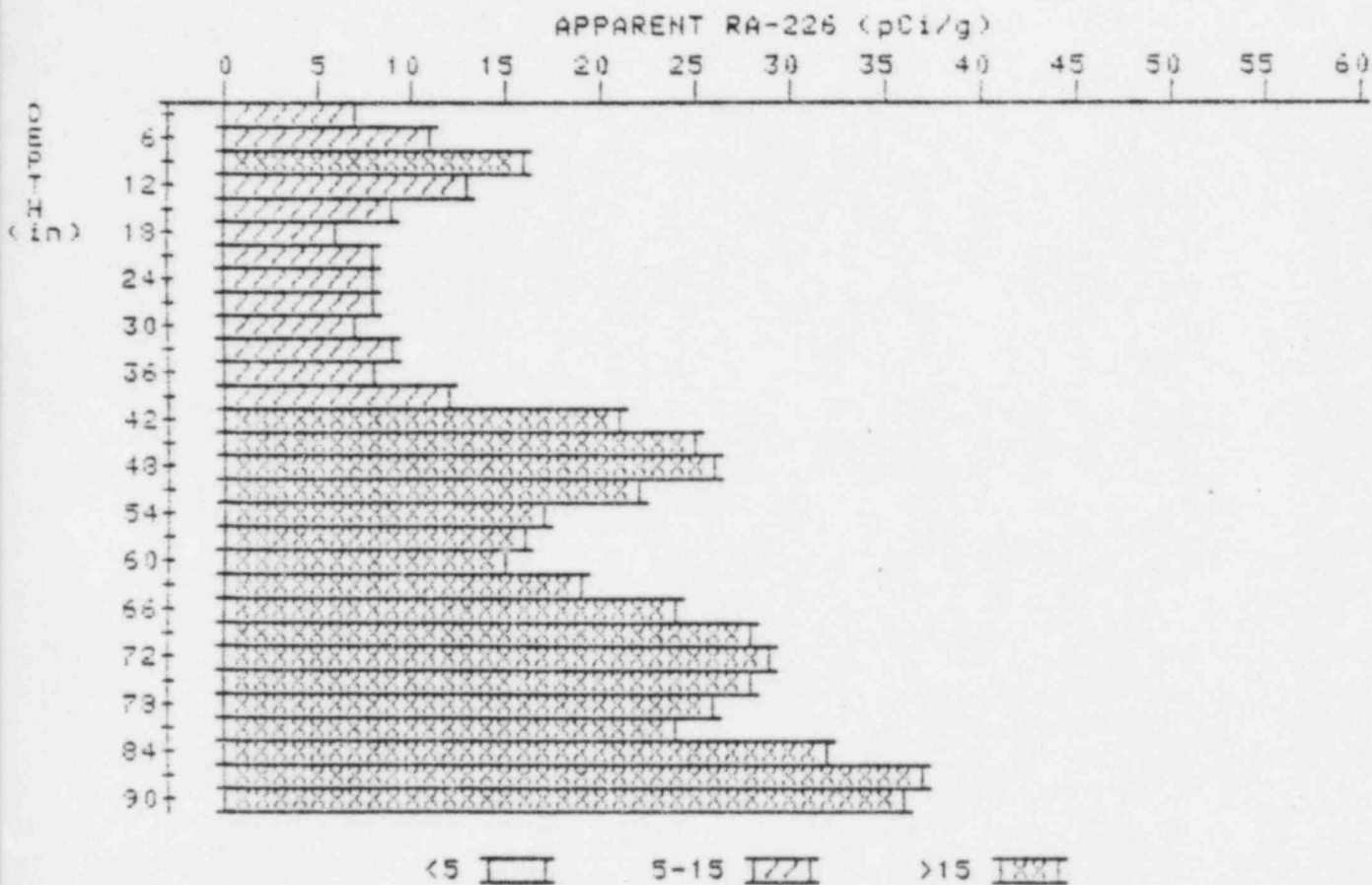
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.8	6.8
6	9.7	12.7
9	10.9	12.5
12	11.2	13.3
15	10.3	11.2
18	8.9	7.5
21	8.3	6.7
24	8.6	9.5
27	8.4	9.1
30	7.8	7.3
33	7.5	7.5

36	7.2	6.7
39	7.2	7.0
42	7.3	6.2
45	8.0	6.9
48	9.3	6.8
51	12.0	10.9
54	15.3	15.5
57	18.5	20.5
60	20.6	23.6
63	21.0	22.6
66	20.5	19.6
69	20.5	20.5
72	20.5	18.9
75	21.4	20.9
78	22.6	23.5
81	23.3	23.8
84	23.7	26.0
87	22.8	22.8



# APPARENT RADIUM-226 CONCENTRATION 20 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 20  
LOCATION: 282209

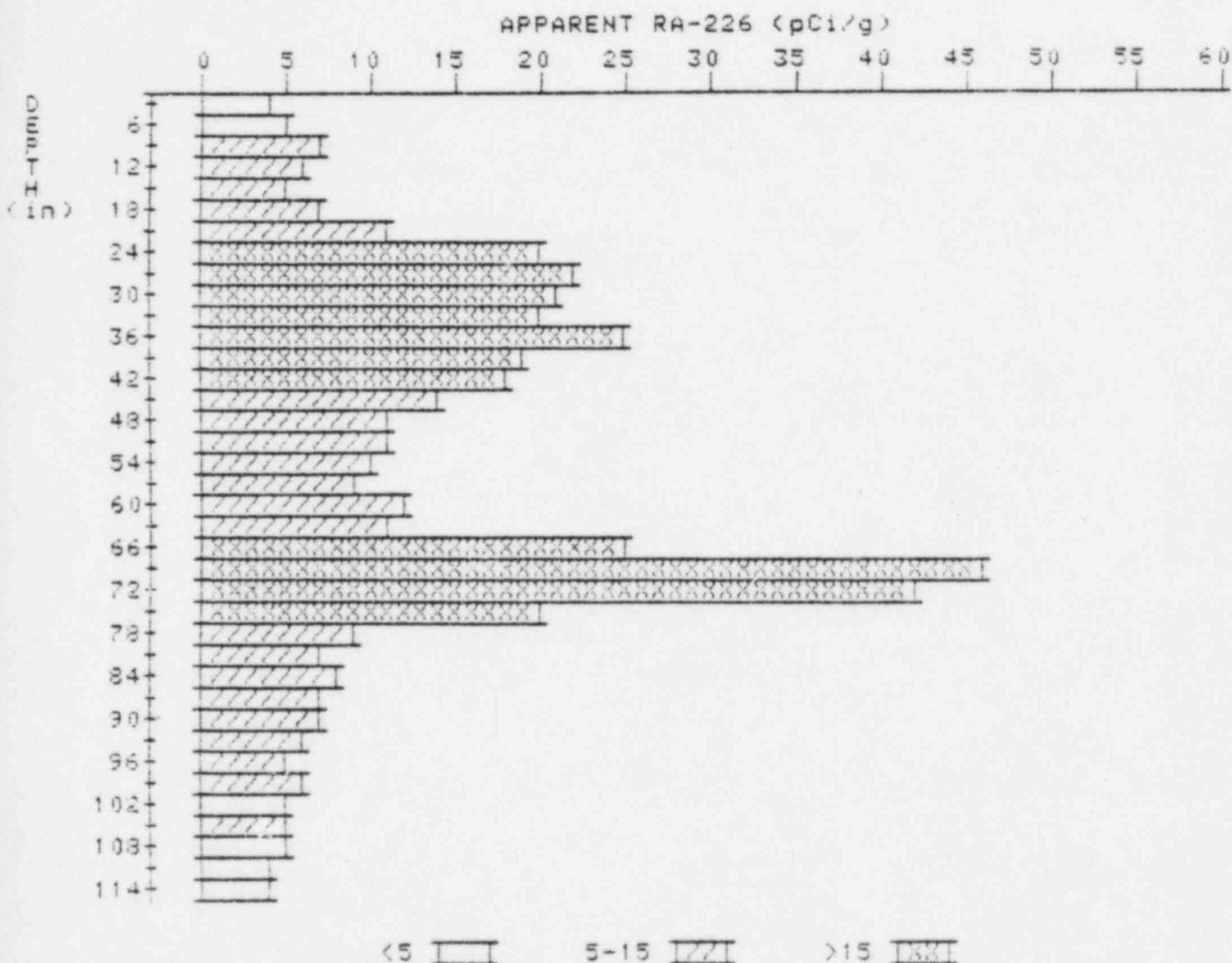


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.7	6.7
6	9.5	11.1
9	11.4	15.7
12	10.9	12.9
15	9.3	9.8
18	8.0	8.9
21	7.9	7.5
24	8.0	8.0
27	8.1	7.6
30	8.5	7.4

33	9.5	8.6
36	11.0	8.3
39	14.0	11.5
42	18.4	20.9
45	21.4	25.1
48	22.3	26.2
51	21.0	22.1
54	19.1	17.5
57	18.1	15.6
60	18.5	15.5
63	20.6	19.4
66	23.4	24.1
69	25.8	27.8
72	27.1	28.9
75	27.4	27.8
78	27.5	26.4
81	28.2	23.6
84	31.5	32.4
87	34.3	37.1
90	35.5	35.5

# APPARENT RADIUM-226 CONCENTRATION 21 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 21  
LOCATION: 290210

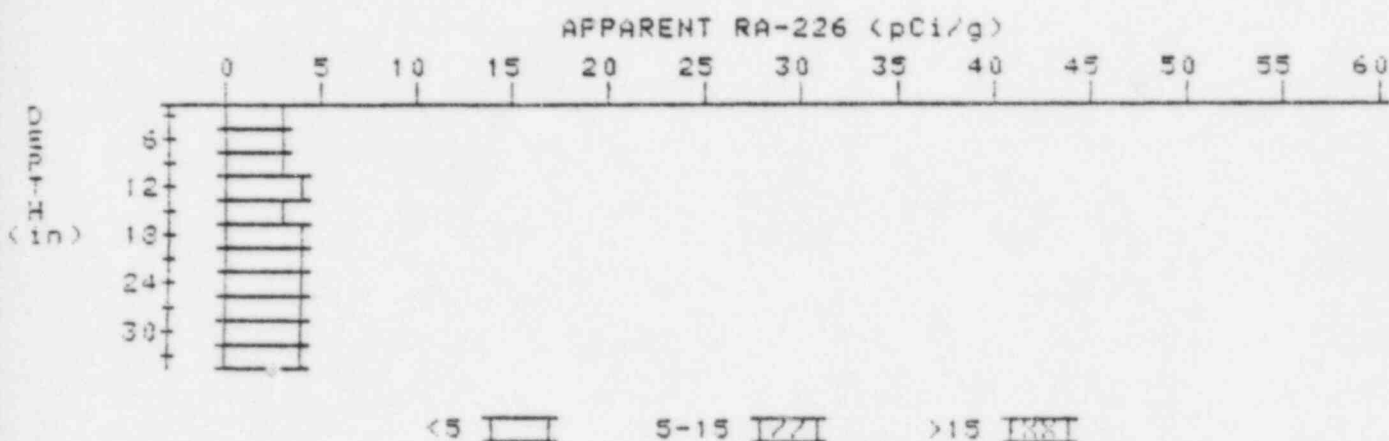


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.1	4.1
6	5.1	4.9
9	6.2	7.1
12	6.8	6.4

15	7.6	5.5
18	9.6	7.5
21	12.8	11.2
24	16.9	20.1
27	19.2	21.7
30	20.1	21.2
33	20.4	20.0
36	20.9	25.0
39	19.1	19.3
42	17.2	18.1
45	14.8	13.9
48	12.9	11.5
51	11.8	10.7
54	11.3	9.5
57	11.8	8.3
60	14.0	11.7
63	17.5	11.3
66	24.5	24.5
69	31.5	46.4
72	30.1	42.4
75	21.8	19.7
78	14.7	9.2
81	10.7	6.8
84	8.9	7.8
87	7.7	7.0
90	6.9	6.5
93	6.3	6.1
96	5.8	5.4
99	5.5	5.7
102	5.1	4.7
105	4.9	5.1
108	4.6	4.6
111	4.3	3.9
114	4.2	4.2

# APPARENT RADIUM-226 CONCENTRATION 22 DECONVOLUTION GRAPH

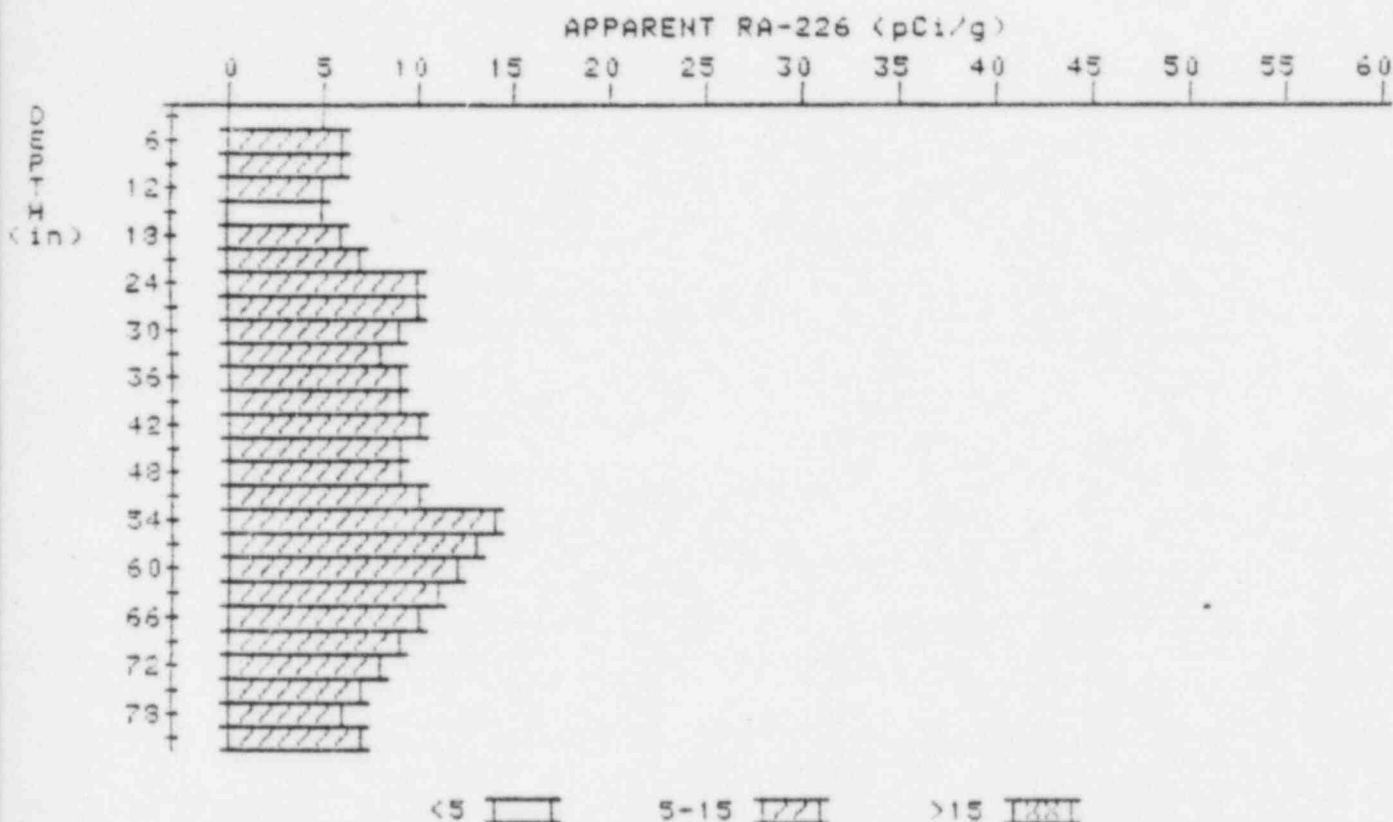
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 22  
LOCATION: 290250



Depth (in)	Apparent, Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.7	2.7
6	3.1	3.5
9	3.3	3.3
12	3.5	3.7
15	3.6	3.2
18	3.9	4.3
21	4.0	4.2
24	4.0	4.0
27	4.0	3.8
30	4.1	4.5
33	4.0	4.0

# APPARENT RADIUM-226 CONCENTRATION 23 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 23  
LOCATION: 300200

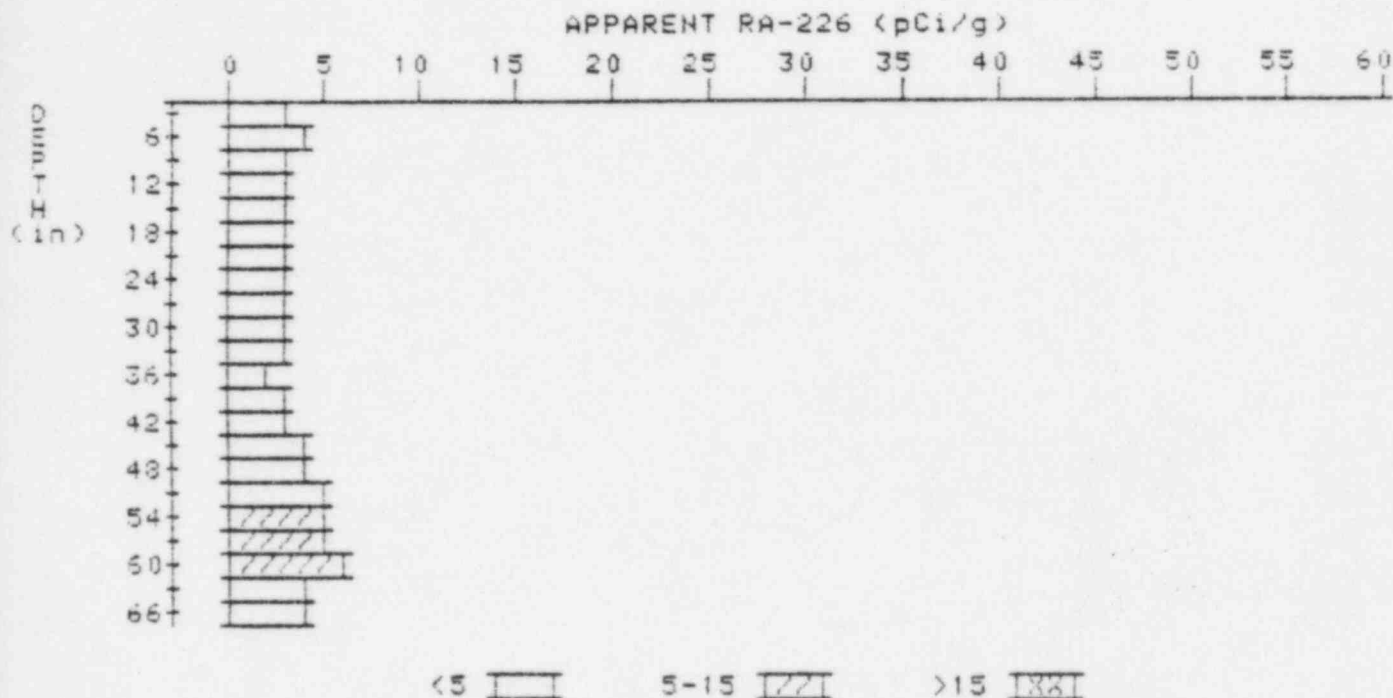


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.6	4.6
6	5.4	5.5
9	5.6	6.0
12	5.6	5.4
15	5.7	4.8
18	6.3	5.8
21	7.2	6.7
24	8.4	9.6
27	8.9	9.8
30	8.9	9.3
33	8.7	7.8
36	9.0	9.2

39	9.2	8.8
42	9.6	10.1
45	9.7	9.2
48	10.1	9.4
51	10.9	10.4
54	12.0	13.8
57	12.1	13.3
60	11.5	11.7
63	10.8	11.0
66	10.0	10.2
69	9.1	9.1
72	8.2	7.7
75	7.6	7.4
78	7.1	6.4
81	7.0	7.0

# APPARENT RADIUM-226 CONCENTRATION 24 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 24  
LOCATION: 300220



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.7	2.7
6	3.0	3.5
9	3.0	2.8
12	3.1	3.3
15	3.1	3.5
18	2.9	2.7
21	2.8	2.5
24	2.8	2.8
27	2.8	2.8
30	2.8	2.6
33	2.9	3.1
36	2.9	2.4
39	3.2	3.4
42	3.4	3.2
45	3.7	3.5
48	4.1	4.1



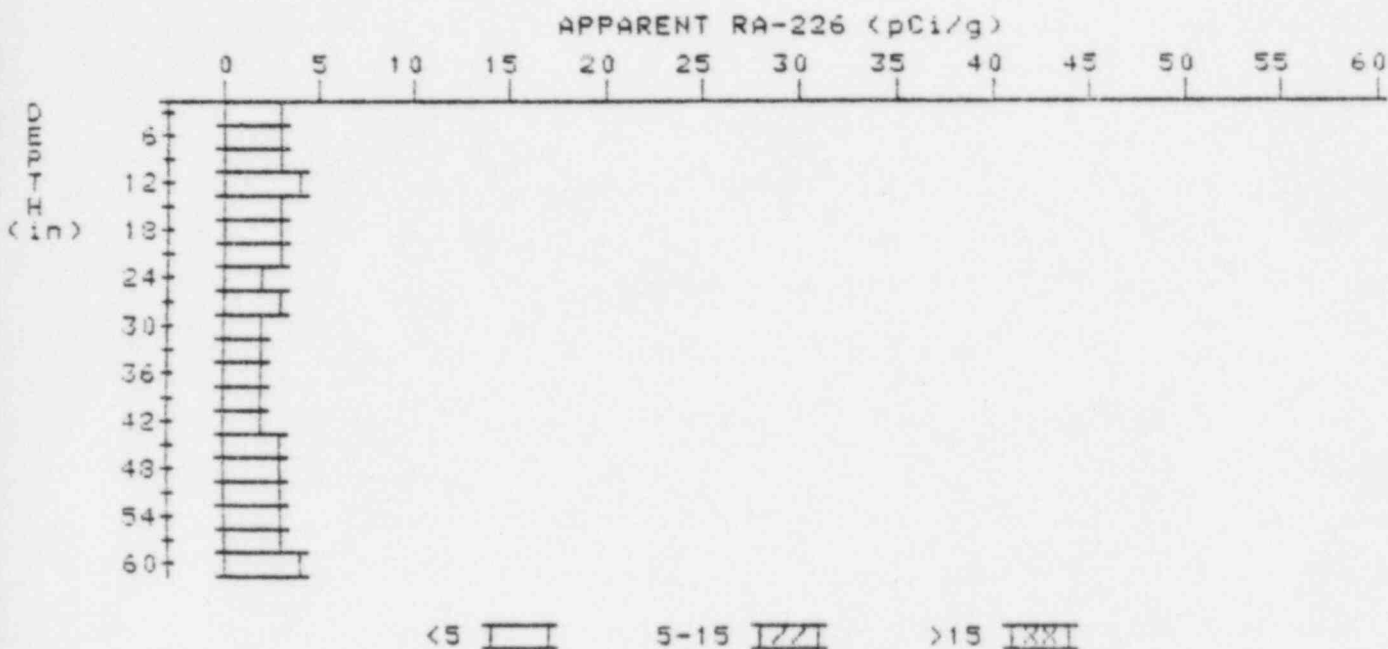
51  
54  
57  
60  
63  
66

4.5  
4.9  
5.0  
5.0  
4.6  
4.3

4.5  
5.4  
5.2  
5.7  
4.4  
4.3

# APPARENT RADIUM-226 CONCENTRATION 25 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 25  
LOCATION: 300230



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.7	2.7
6	3.0	3.4
9	3.1	3.1
12	3.2	3.6
15	3.1	3.1
18	3.0	3.2
21	2.9	2.9
24	2.6	2.4
27	2.5	2.5
30	2.4	2.2
33	2.4	2.4
36	2.4	2.4
39	2.4	2.4
42	2.4	2.0
45	2.6	2.6
48	2.7	2.6
51	2.9	3.1
54	3.0	2.6

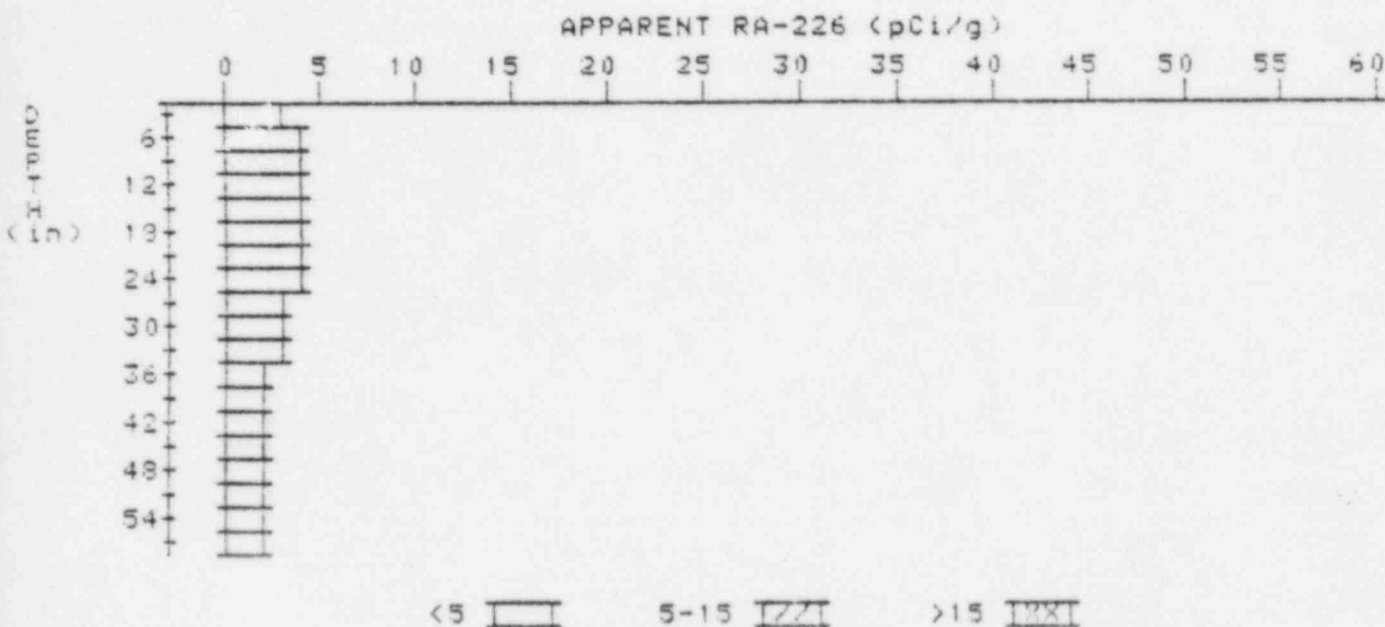
57  
60

3.2  
3.5

3.0  
3.5

# APPARENT RADIUM-226 CONCENTRATION 26 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 26  
LOCATION: 308242

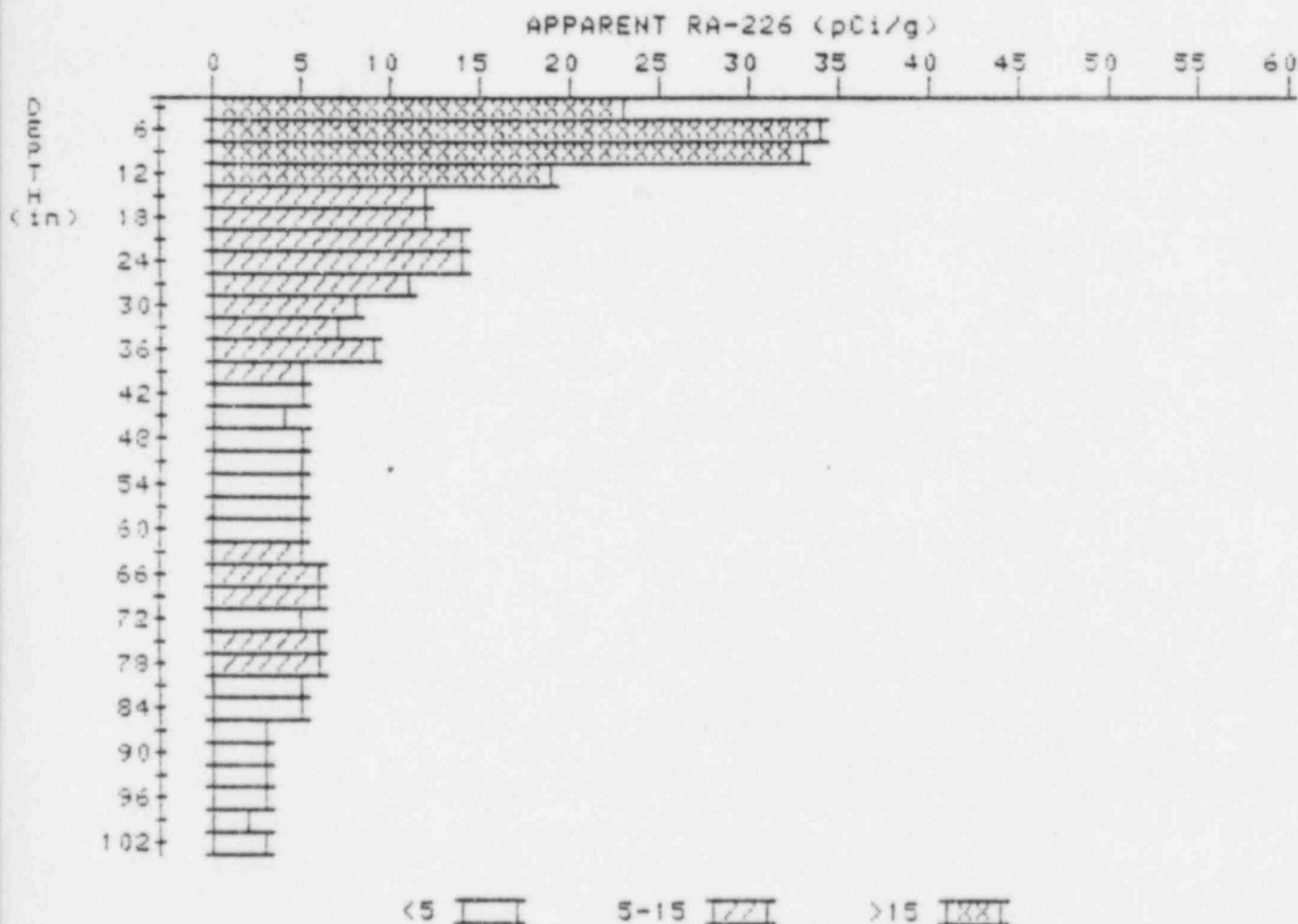


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.8	2.8
6	3.2	3.6
9	3.4	3.6
12	3.5	3.7
15	3.5	3.5
18	3.5	3.5
21	3.5	3.4
24	3.4	3.5
27	3.2	3.2
30	3.0	3.2
33	2.7	2.7
36	2.4	2.0
39	2.3	2.0
42	2.2	2.2
45	2.1	1.7
48	2.2	2.4
51	2.2	2.0
54	2.3	2.5



# APPARENT RADIUM-226 CONCENTRATION 27 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 27  
LOCATION: 311182

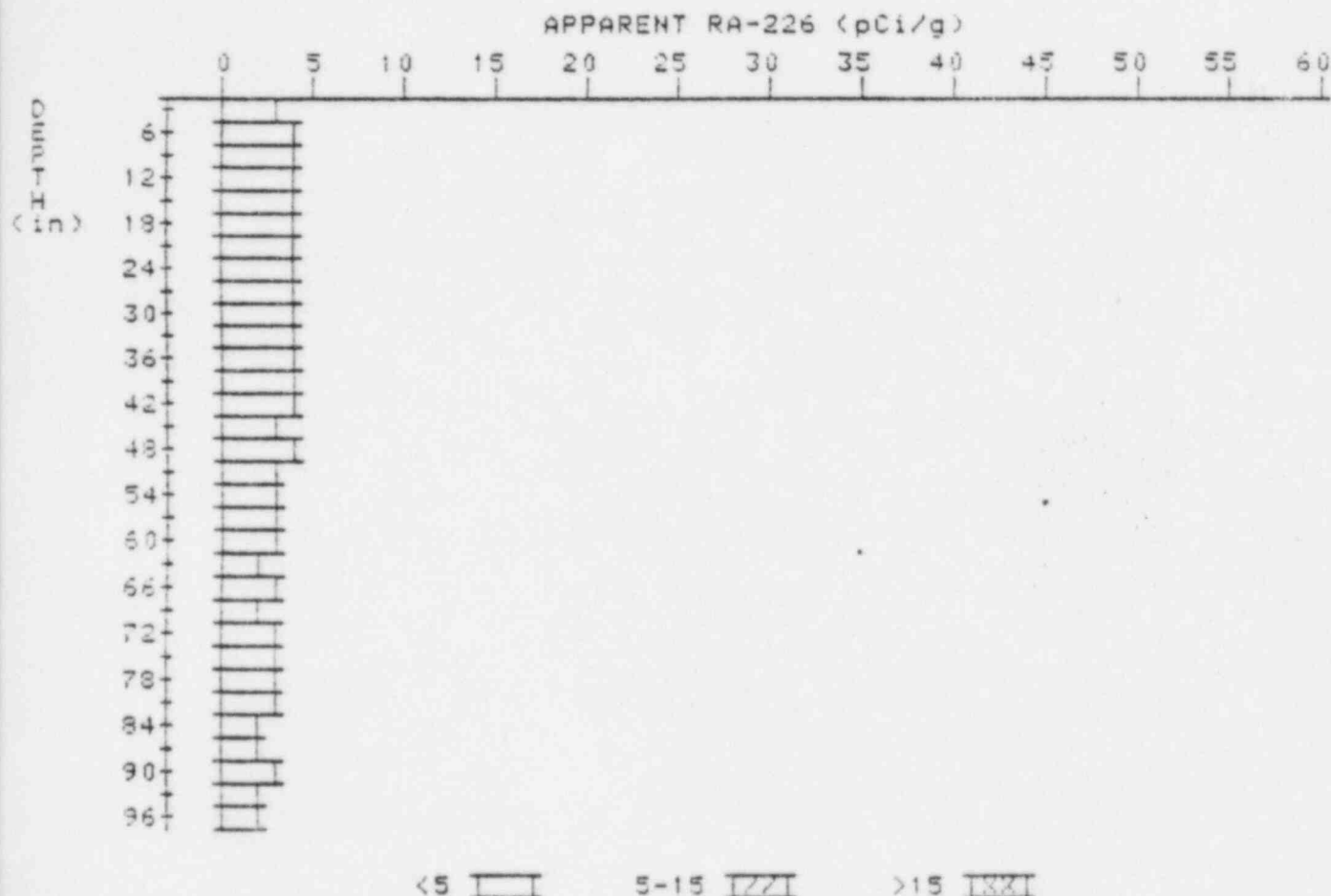


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	22.8	22.8
6	26.2	33.3
9	25.3	32.6
12	20.3	19.9
15	16.1	12.0
18	14.2	12.1
21	13.5	13.9

24	12.6	13.8
27	11.0	11.4
30	9.2	7.8
33	8.2	7.3
36	7.7	9.5
39	6.2	5.1
42	5.3	4.6
45	4.8	3.9
48	4.8	5.0
51	4.7	4.5
54	4.7	4.5
57	4.8	4.6
60	5.0	4.6
63	5.3	5.5
66	5.5	5.5
69	5.7	6.4
72	5.5	5.0
75	5.6	6.1
78	5.4	5.9
81	4.9	4.9
84	4.4	4.3
87	3.7	3.2
90	3.3	2.9
93	3.1	3.1
96	2.9	2.9
99	2.7	2.2
102	2.8	2.3

# APPARENT RADIUM-226 CONCENTRATION 28 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 23  
LOCATION: 316253



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.0	3.0
6	3.4	3.3
9	3.6	3.3
12	3.7	3.3
15	3.7	3.3
18	3.8	3.3
21	3.9	4.3
24	3.8	4.6
27	3.8	4.0



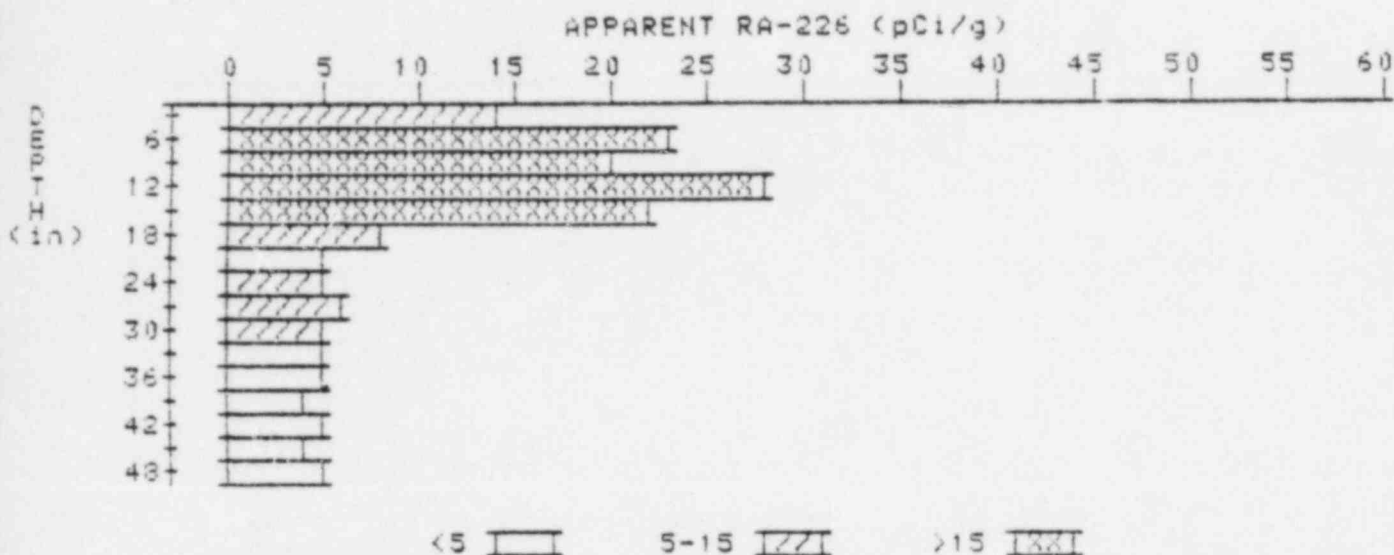
30  
33  
36  
39  
42  
45  
48  
51  
54  
57  
60  
63  
66  
69  
72  
75  
78  
81  
84  
87  
90  
93  
96

3.8  
3.8  
3.7  
3.7  
3.7  
3.5  
3.5  
3.3  
3.0  
2.8  
2.7  
2.6  
2.6  
2.6  
2.7  
2.7  
2.6  
2.5  
2.4  
2.4  
2.5  
2.4  
2.4

3.8  
4.0  
3.8  
3.7  
4.1  
3.1  
3.9  
3.5  
2.8  
2.6  
2.7  
2.4  
2.5  
2.4  
2.9  
2.9  
2.6  
2.5  
2.6  
2.6  
2.6  
2.4

# APPARENT RADIUM-226 CONCENTRATION 29 DECONVOLUTION GRAPH

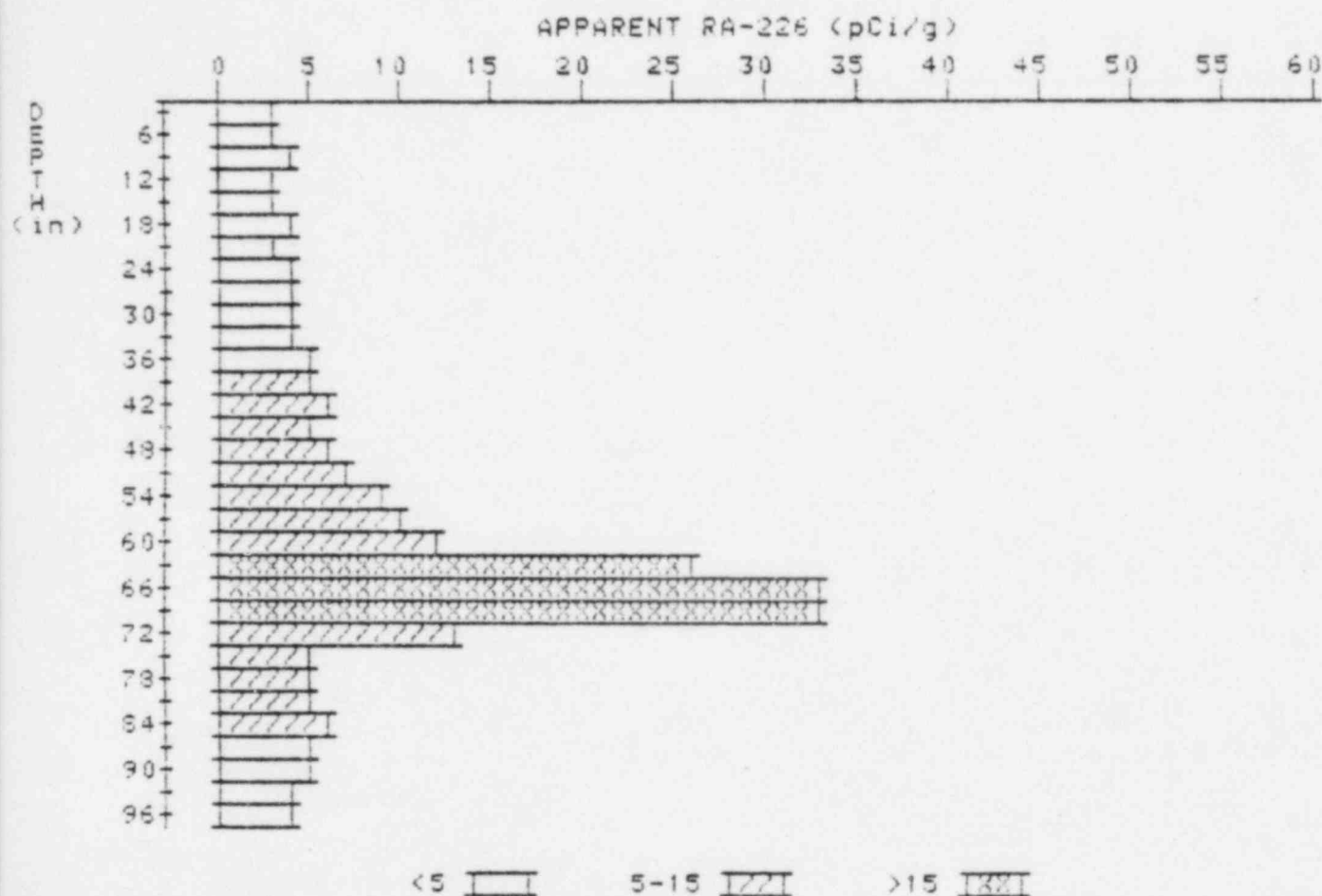
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 29  
LOCATION: 320195



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	14.3	14.3
6	19.3	23.3
9	19.5	19.7
12	20.6	20.2
15	17.4	21.7
18	11.8	8.2
21	8.2	4.6
24	6.6	5.0
27	5.9	5.5
30	5.4	5.2
33	5.0	4.6
36	4.8	4.8
39	4.6	4.2
42	4.6	4.8
45	4.5	4.3
48	4.5	4.5

# APPARENT RADIUM-226 CONCENTRATION 30 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 30  
LOCATION: 320218

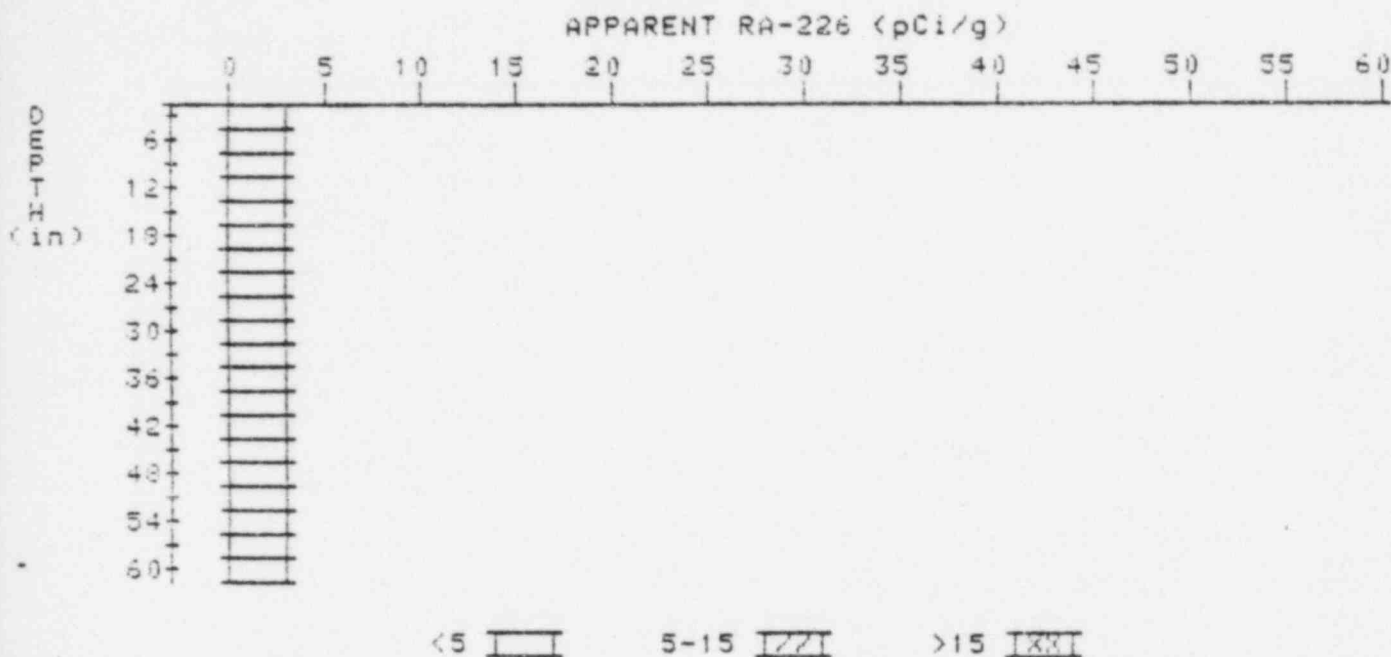


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.9	2.9
6	3.1	3.1
9	3.3	3.7
12	3.3	3.3
15	3.3	2.9
18	3.5	3.9
21	3.5	3.0
24	3.8	4.2
27	3.9	3.7

30	4.1	3.9
33	4.4	4.6
36	4.8	4.6
39	5.3	5.5
42	5.7	5.7
45	6.1	5.4
48	6.9	6.2
51	8.1	7.2
54	9.8	8.6
57	12.2	10.1
60	15.8	12.4
63	21.3	25.6
66	24.4	32.6
69	22.9	32.9
72	15.8	13.0
75	10.3	5.1
78	7.7	5.4
81	6.4	5.3
84	5.7	5.5
87	5.1	4.7
90	4.7	4.9
93	4.2	3.8
96	3.9	3.9

# APPARENT RADIUM-226 CONCENTRATION 31 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 31  
LOCATION: 320220



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.5	2.5
6	2.8	3.2
9	2.9	3.3
12	2.8	2.6
15	2.8	2.8
18	2.8	2.8
21	2.8	2.8
24	2.8	2.8
27	2.8	2.6
30	2.9	3.1
33	2.9	2.9
36	2.9	2.7
39	3.0	3.0
42	3.1	3.8
45	3.0	2.6
48	3.1	3.1
51	3.2	3.2
54	3.3	3.8

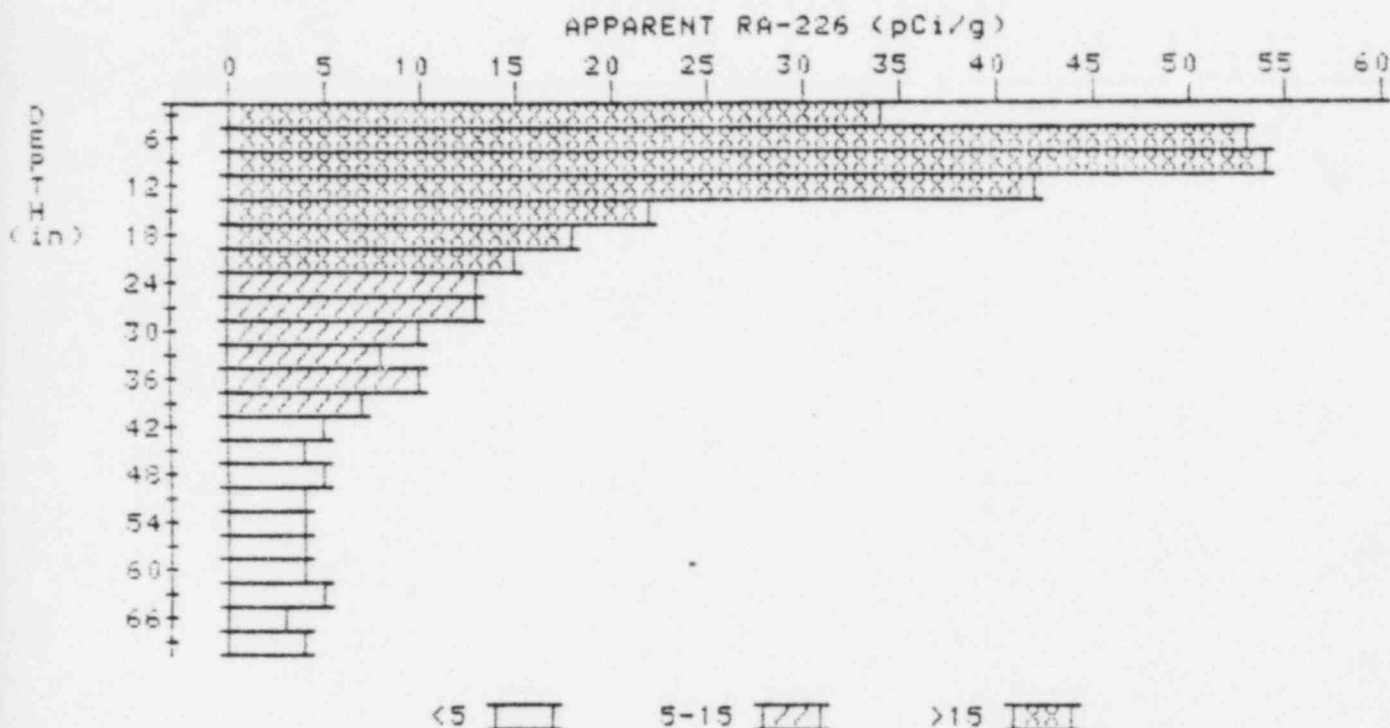
57  
60

3.3  
3.4

3.1  
3.4

# APPARENT RADIUM-226 CONCENTRATION 32 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 32  
LOCATION: 329182



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	34.1	34.1
6	41.3	52.9
9	42.0	53.6
12	36.2	41.5
15	27.4	22.4
18	21.4	17.7
21	17.5	15.4
24	14.8	13.4
27	12.9	13.1
30	10.9	10.0
33	9.4	7.8
36	8.8	10.4
39	7.3	7.1
42	5.9	4.7
45	5.2	4.5

48  
51  
54  
57  
60  
63  
66  
69

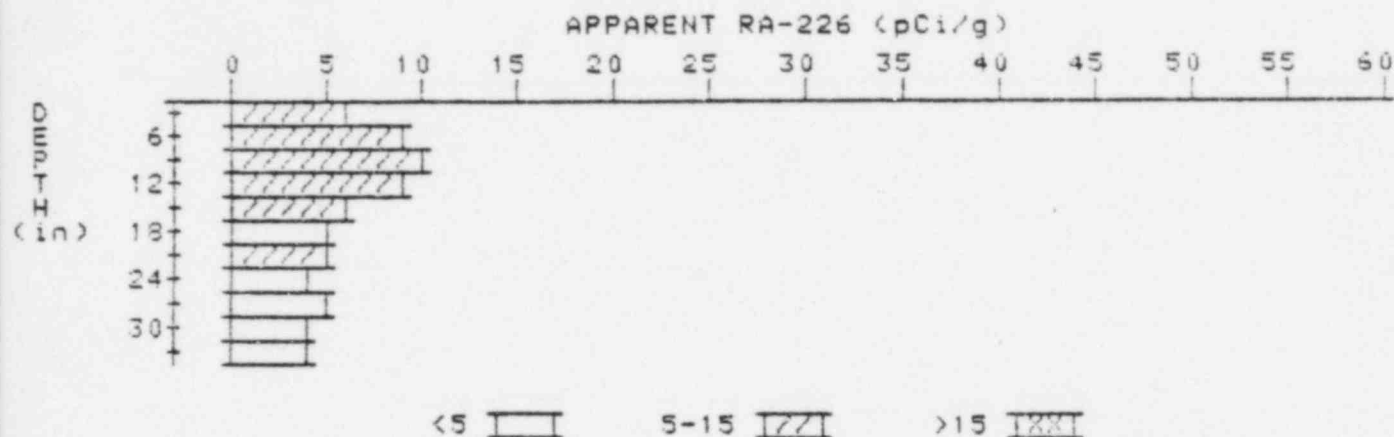
4.9  
4.6  
4.4  
4.3  
4.1  
4.0  
3.6  
3.6

4.9  
4.4  
4.3  
4.3  
3.9  
4.3  
3.9  
3.6



# APPARENT RADIUM-226 CONCENTRATION 33 DECONVOLUTION GRAPH

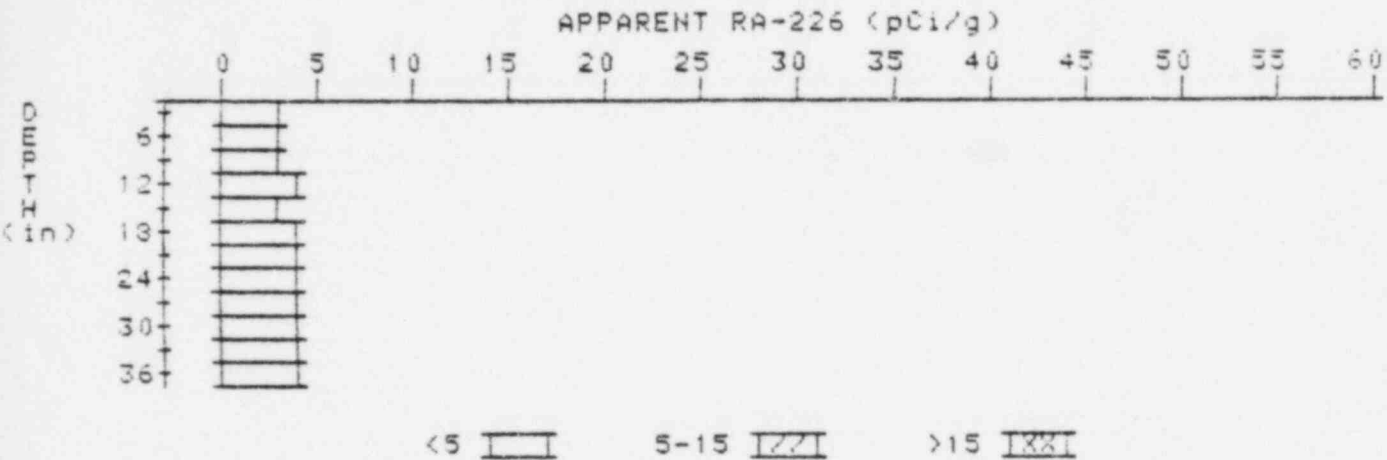
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 33  
LOCATION: 330216



Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	5.9	5.9
6	7.3	8.5
9	8.0	9.8
12	7.7	9.5
15	6.4	5.5
18	5.6	4.9
21	5.2	5.4
24	4.7	4.0
27	4.6	4.8
30	4.4	4.2
33	4.3	4.3

# APPARENT RADIUM-226 CONCENTRATION 34 DECONVOLUTION GRAPH

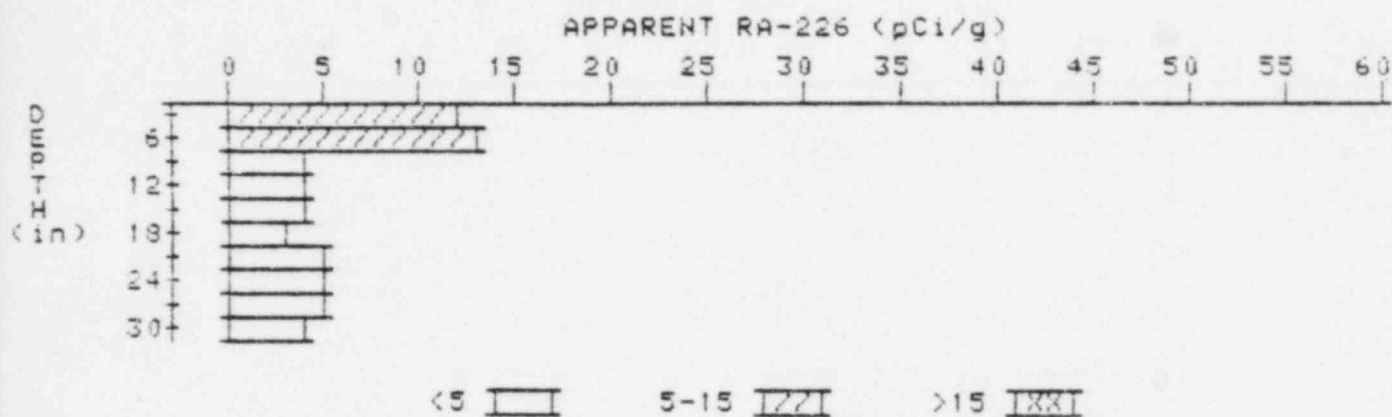
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 34  
LOCATION: 335229



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.3	3.5
9	3.4	3.2
12	3.6	4.0
15	3.6	3.2
18	3.8	4.0
21	3.9	3.9
24	4.0	4.0
27	4.1	4.3
30	4.1	4.3
33	4.0	3.8
36	4.0	4.0

# APPARENT RADIUM-226 CONCENTRATION 35 DECONVOLUTION GRAPH

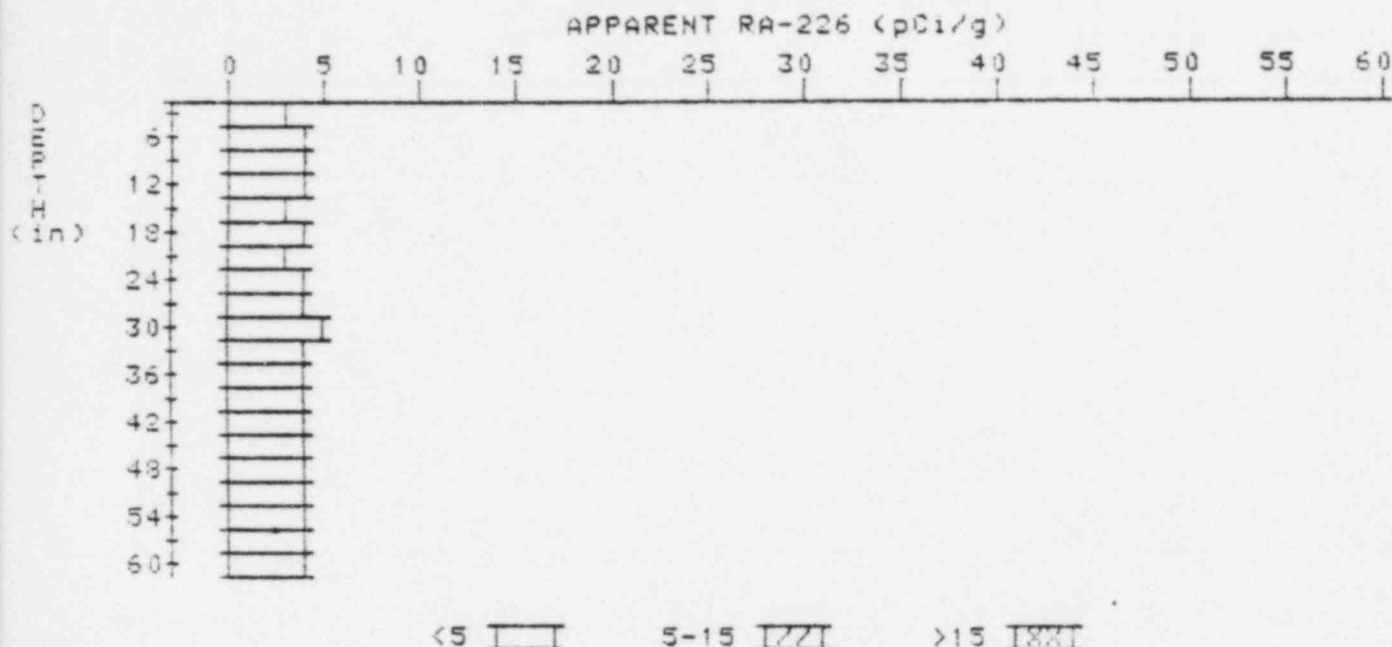
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 35  
LOCATION: 340190



Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	11.6	11.6
6	10.2	13.4
9	7.0	4.2
12	5.4	4.0
15	4.6	3.7
18	4.3	3.4
21	4.5	4.7
24	4.6	5.0
27	4.5	4.5
30	4.4	4.4

# APPARENT RADIUM-226 CONCENTRATION 37 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 37  
LOCATION: 340220



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.7	4.4
9	3.8	4.0
12	3.8	4.2
15	3.6	2.9
18	3.8	4.2
21	3.8	3.4
24	4.0	4.2
27	4.1	4.1
30	4.2	4.6
33	4.1	4.1
36	4.0	3.6
39	4.1	4.3
42	4.1	4.1
45	4.1	4.1
48	4.1	4.1
51	4.1	4.3
54	4.0	3.6

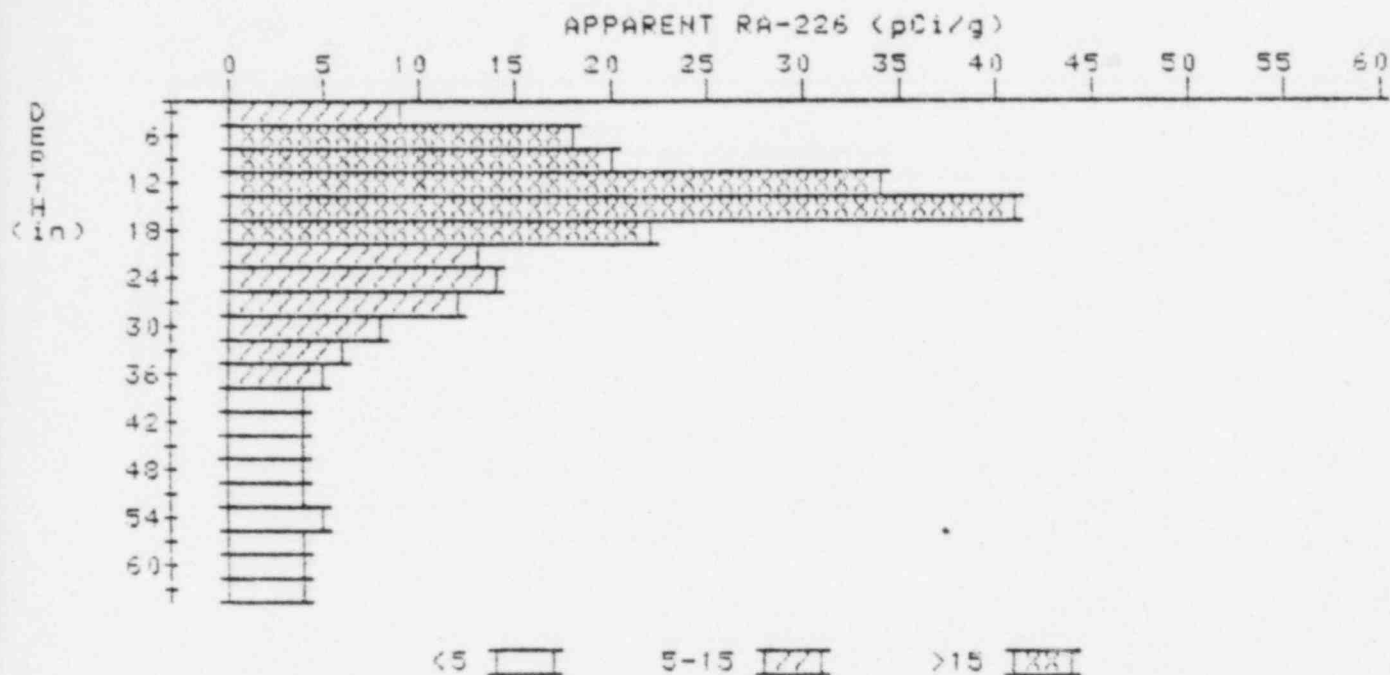
57  
60

4.1  
4.2

4.1  
4.2

# APPARENT RADIUM-226 CONCENTRATION 38 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-C6  
HOLE NUMBER: 38  
LOCATION: 351211



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
=====	=====	=====
3	9.0	9.0
6	15.5	17.6
9	20.8	19.7
12	26.7	34.3
15	29.3	41.3
18	22.6	21.9
21	17.3	13.0
24	14.4	13.9
27	11.8	11.8
30	9.2	8.1
33	7.2	6.0
36	5.9	5.0
39	5.1	4.4
42	4.7	4.3
45	4.5	4.3
48	4.4	4.2
51	4.4	4.4

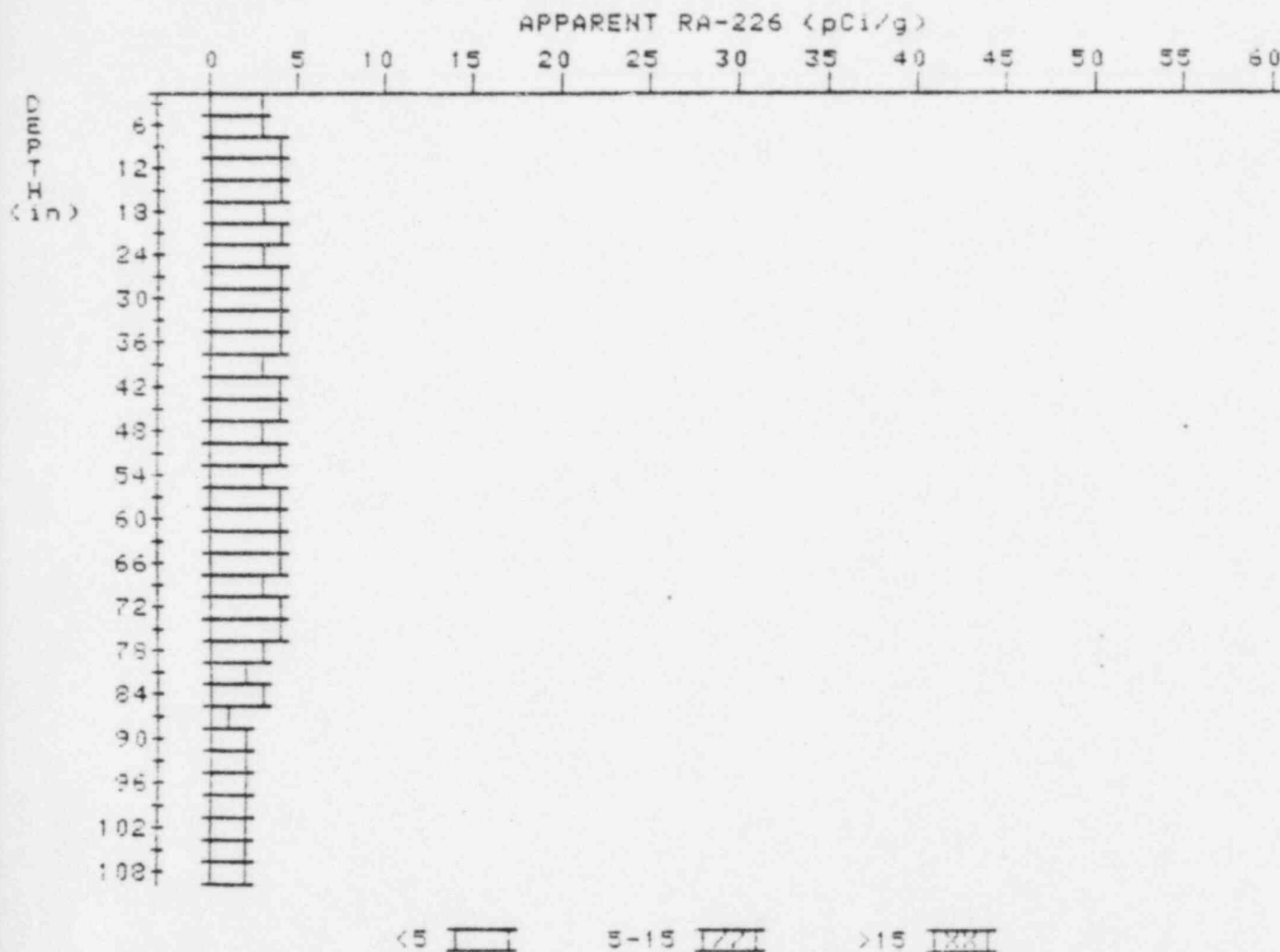
54  
57  
60  
63

4.4  
4.3  
4.3  
4.3

4.6  
4.1  
4.3  
4.3

# APPARENT RADIUM-226 CONCENTRATION 39 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 39  
LOCATION: 351256



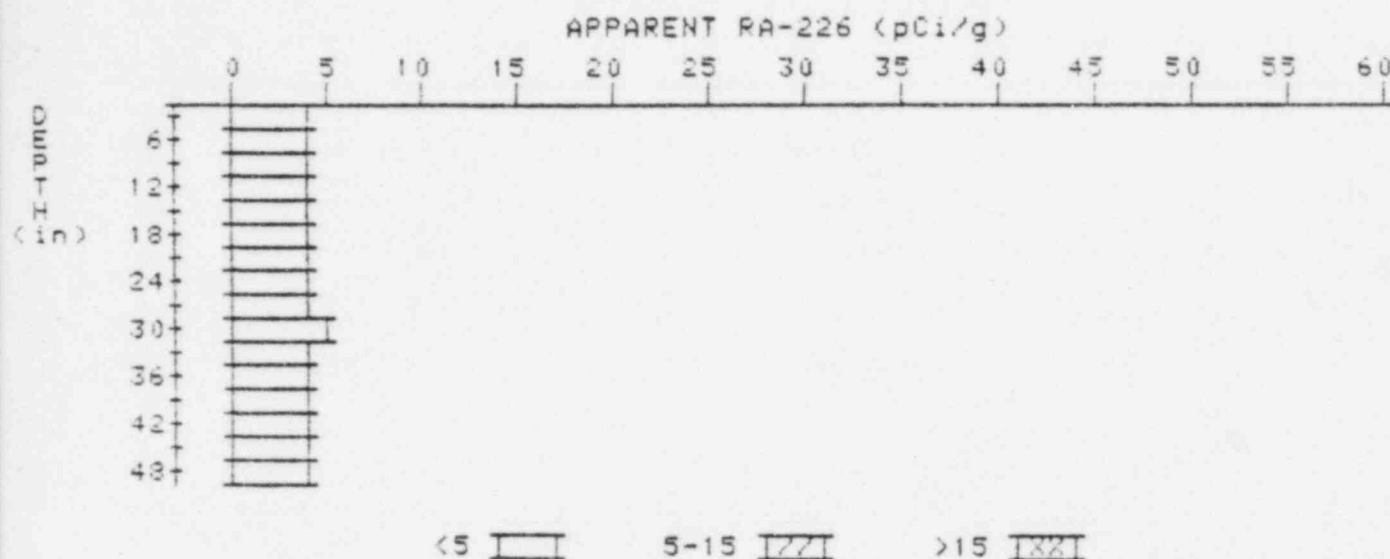
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.8	2.8
6	3.1	3.1
9	3.4	3.3
12	3.5	3.5
15	3.6	3.3
18	3.6	3.4



21	3.7	4.1
24	3.6	3.2
27	3.7	3.9
30	3.7	3.7
33	3.7	3.7
36	3.7	3.9
39	3.6	3.4
42	3.6	3.6
45	3.6	3.6
48	3.6	3.4
51	3.7	4.1
54	3.6	3.2
57	3.7	3.9
60	3.7	3.7
63	3.7	3.7
66	3.7	3.9
69	3.6	3.4
72	3.6	3.8
75	3.5	3.9
78	3.2	3.4
81	2.8	2.4
84	2.6	3.0
87	2.2	1.5
90	2.2	2.4
93	2.1	1.9
96	2.1	2.3
99	2.0	1.8
102	2.0	2.2
105	1.9	1.7
108	1.9	1.9

# APPARENT RADIUM-226 CONCENTRATION 41 DECONVOLUTION GRAPH

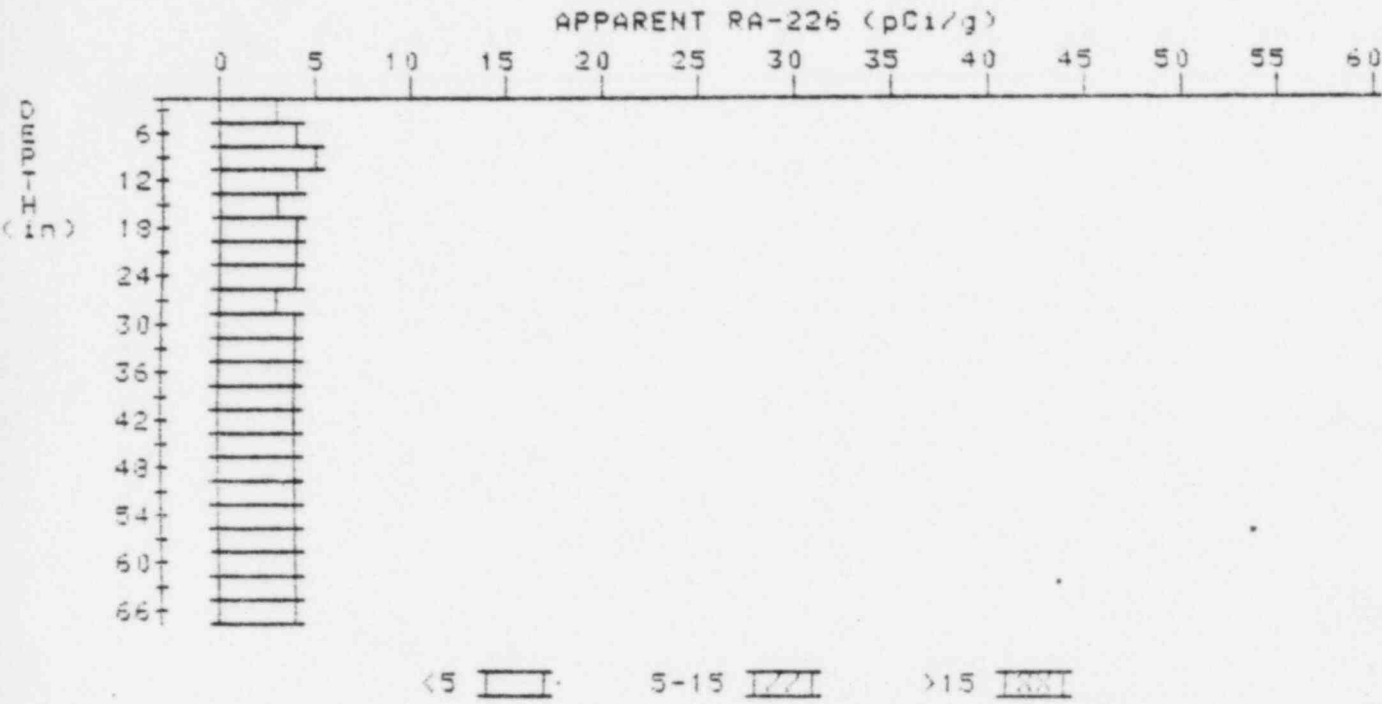
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 41  
LOCATION: 360200



Depth (in)	Apparent Radium-226 (pCi/g) Underconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.5	3.5
6	3.8	4.2
9	3.9	4.3
12	3.9	3.6
15	3.8	3.8
18	3.8	3.6
21	3.9	3.9
24	4.0	4.2
27	4.0	3.6
30	4.2	4.7
33	4.1	4.3
36	3.9	3.7
39	3.8	3.6
42	3.8	3.8
45	3.8	3.8
48	3.8	3.8

# APPARENT RADIUM-226 CONCENTRATION 42 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
 HOLE NUMBER: 42  
 LOCATION: 360220



Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	3.1	3.1
6	3.6	3.8
9	4.0	4.7
12	4.0	4.4
15	3.8	3.4
18	3.8	3.6
21	3.9	4.1
24	3.9	4.1
27	3.8	3.4
30	3.9	4.1
33	3.9	3.7
36	4.0	4.2
39	4.0	4.0
42	4.0	4.2
45	3.9	3.5
48	4.0	4.2

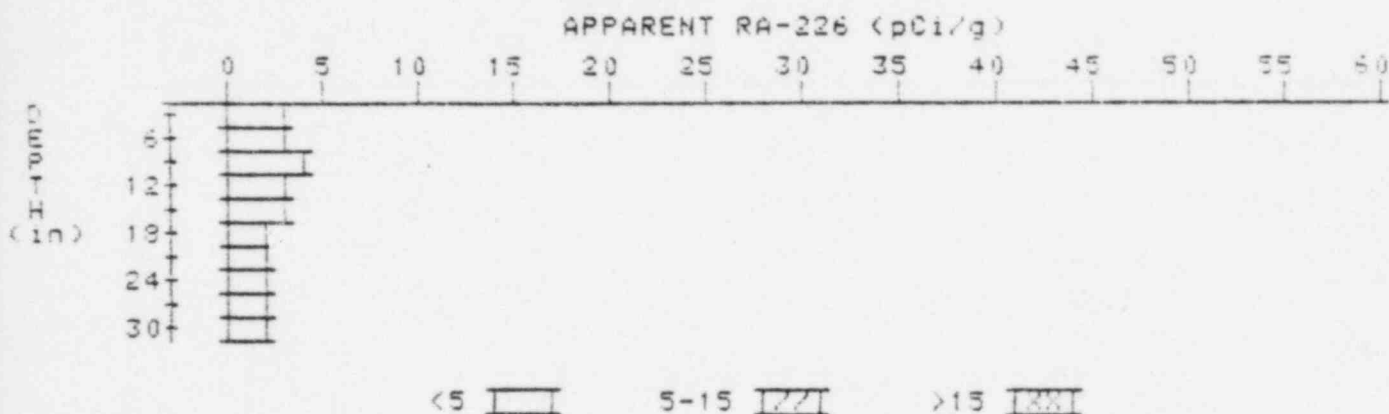
51  
54  
57  
60  
63  
66

4.0  
3.9  
4.0  
4.0  
3.9  
3.9

4.2  
3.8  
4.3  
4.3  
3.7  
3.9

# APPARENT RADIUM-226 CONCENTRATION 43 DECONVOLUTION GRAPH

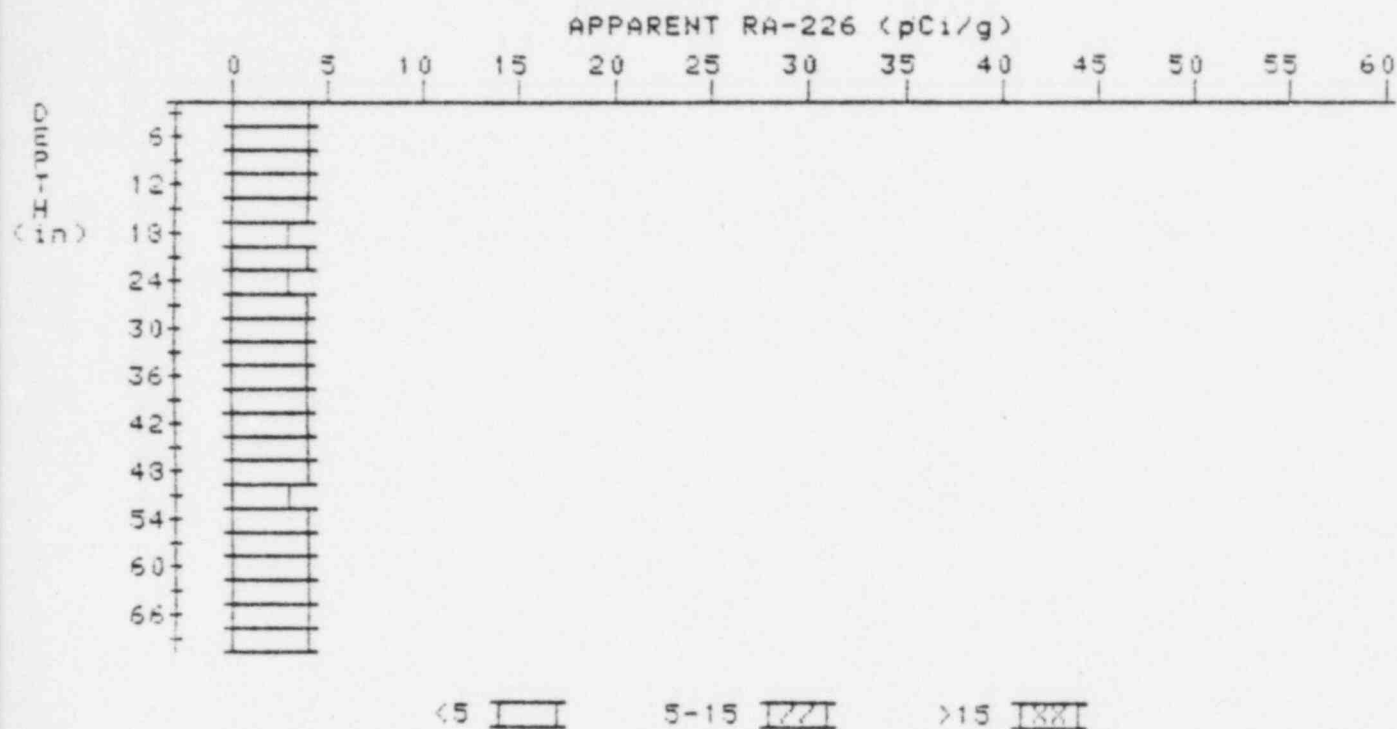
PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 43  
LOCATION: 360260



Depth (in)	Apparent Radium-226 (pCi/g)	Apparent Radium-226 (pCi/g)
	Undeconvolved	Deconvolved
3	2.6	2.6
6	2.9	3.3
9	3.0	3.5
12	2.8	2.8
15	2.6	2.6
18	2.4	2.4
21	2.2	1.9
24	2.2	2.4
27	2.1	1.9
30	2.1	2.1

# APPARENT RADIUM-226 CONCENTRATION 44 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 44  
LOCATION: 362185



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.9	3.9
6	3.7	3.5
9	3.7	3.7
12	3.7	3.7
15	3.7	3.9
18	3.6	3.4
21	3.6	3.6
24	3.6	3.4
27	3.7	3.9
30	3.7	3.7
33	3.7	3.7
36	3.7	3.7
39	3.7	3.7
42	3.7	3.7
45	3.7	3.7

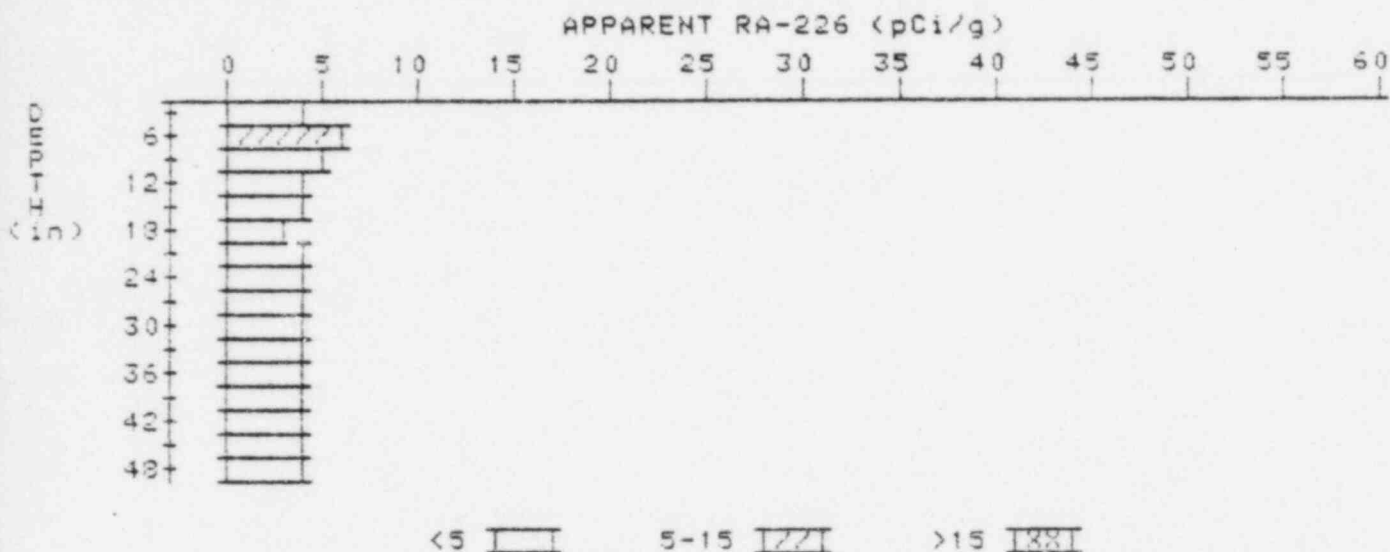
48  
51  
54  
57  
60  
63  
66  
69

3.7  
3.6  
3.7  
3.8  
3.8  
3.7  
3.6  
3.5

3.9  
3.2  
3.7  
4.0  
4.0  
3.7  
3.6  
3.5

# APPARENT RADIUM-226 CONCENTRATION 45 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 45  
LOCATION: 376177

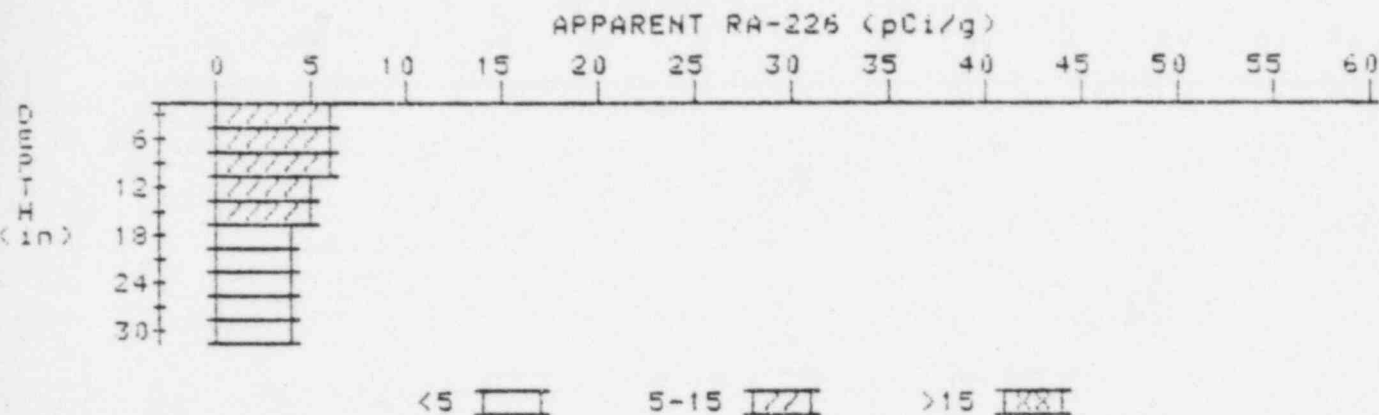


Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.0	4.0
6	4.7	6.1
9	4.6	4.8
12	4.4	4.4
15	4.2	4.4
18	3.9	3.4
21	3.9	3.9
24	3.9	3.9
27	3.9	3.9
30	3.9	3.9
33	3.9	3.7
36	4.0	4.4
39	3.9	3.7
42	3.9	3.9
45	3.9	3.9
48	3.9	3.9



# APPARENT RADIUM-226 CONCENTRATION 46 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-37695-CS  
HOLE NUMBER: 46  
LOCATION: 377200



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	5.6	5.6
6	5.6	5.6
9	5.6	6.1
12	5.3	5.3
15	5.0	5.4
18	4.5	4.1
21	4.2	4.0
24	4.0	3.6
27	4.0	4.2
30	3.9	3.9