

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-12373-RS
ADDRESS: 2884 ORCHARD AVENUE

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

August 26, 1985

REAL2373:REA-619

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 EXECUTIVE SUMMARY	1
1.1 Introduction	1
1.2 Evaluation and Recommendation	1
2.0 PROPERTY DESCRIPTION	2
2.1 General Description	2
2.2 Existing Facilities and Structures	2
3.0 RADIOLOGIC SURVEY	4
3.1 Introduction	4
3.2 Gamma Exposure-Rate Surveys	4
3.2.1 Exterior Findings	4
3.2.2 Interior Findings	4
3.3 Boreholes, Soil Samples, and Other Measurements	4
3.4 Radon/Radon Daughter Concentration	5
3.5 Extent of Contamination	5
4.0 RECOMMENDED REMEDIAL ACTION	7
4.1 Decontamination and Restoration	7
4.2 Evaluation of Recommended Remedial Action	7
5.0 REFERENCES	8
6.0 APPENDIX	9

1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-12373-RS, is a single-family residence located at 2884 Orchard Avenue, 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, 47 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$6,068. Remedial action on this property will take approximately 14 days to complete.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 2884 Orchard Avenue, Grand Junction, Colorado

Zoning: Residential (R-4)

Lot Size: Approximately 10,880 sf (0.25 acres)

Legal Description: Beginning 814.0 feet west and 30.0 feet north of southeast corner of the NE 1/4, Section 7, T1S, R1E, UM, thence north 128.0 feet, west 85.0 feet, south 128.0 feet, east to beginning, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2 mile(s) northeast 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/underground to irrigation pump
 Gas: Underground
 Telephone: Overhead
 Sewer: Underground
 Water: Underground
 Cable TV: None

Bordering Properties:

North: Single-family residence
 South: Orchard Avenue
 East: Ashley Lane
 West: Single-family residence

2.2 Existing Facilities and Structures

Primary Structure:

Type: Single-story residence with attached carport
 Size: Approximately 1,600 sf
 Construction Date: 1956
 Construction: Wood-frame with brick veneer
 Foundation: Concrete stemwall on spread footing and monolithic concrete slab-on-grade
 Footing Depth: Approximately 24" to bottom of footing from grade, except at family room slab-on-grade - 6"

Basement: None
Crawl Space: Yes - under entire living area except at
family room in northeast portion of
structure
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-12373-RS on June 28, 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 in the south yard along Orchard Avenue and associated with the concrete carport.

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, team leader notes, deconvolution graphs, and Exterior Gamma Scan map are included in the Appendix (Section 6.0).

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

Background Readings: 13 to 17 uR/h
Highest Outside Gamma Reading (HOG): 43 uR/h

Exterior radium-concentration measurements are presented in Appendix Table 3.1. Grid-point survey results are shown in Appendix Figure 3.1.

3.2.2 Interior Findings

Background Readings: 14 to 16 uR/h
Highest Inside Gamma Reading (HIG): 20 uR/h

Interior radium-concentration measurements are presented in Appendix Table 3.2. Interior gamma exposure-rate measurements are summarized in Appendix Table 3.3.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; these areas are shown in Appendix Figures 3.2a and 3.2b. Data from these investigations are included in Appendix Tables 3.1 and 3.2.

3.4 Radon/Radon Daughter Concentration (RDC)

Determined by CDH: 0.010 gross working level (WL). No additional measurements were taken by Bendix.

3.5 Extent of Contamination

Appendix Figure 3.3 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) Surface Material: Concrete
Direction From Primary Structure: East
Other Directions: Carport
Total Depth of Contamination: 12 inches
Other (height or thickness): Concrete is 4 inches thick
Comments: The carport is covered.
Approximate Square Footage: 855
- (Area B) Surface Material: Soil
Direction From Primary Structure: South
Total Depth of Contamination: 6 inches
Comments: There is buried electrical line in this area;
the line was exposed at 3 inches. The line runs
through the south yard to the irrigation pump.
Approximate Square Footage: 36
- (Area C) Surface Material: Soil
Direction From Primary Structure: South
Total Depth of Contamination: 6 inches
Comments: Flower bed
Approximate Square Footage: 36
- (Area D) Surface Material: Soil
Direction From Primary Structure: Southeast
Other Directions: West of Ashley Lane
Total Depth of Contamination: 12 inches
Comments: Flower bed with flagstone walk in the center
Approximate Square Footage: 42
- (Area E) Surface Material: Lawn
Direction From Primary Structure: South
Total Depth of Contamination: 39 inches
Comments: This deposit is around the water line and should
be monitored closely during remedial action.
Approximate Square Footage: 24
- (Area F) Surface Material: Lawn
Direction From Primary Structure: South
Other Directions: South side of irrigation ditch
Total Depth of Contamination: 12 inches
Approximate Square Footage: 104

(Area G) Surface Material: Lawn
Direction From Primary Structure: South
Other Directions: South side of irrigation ditch
Total Depth of Contamination: 9 inches
Approximate Square Footage: 76

(Area H) Surface Material: Gravel and soil
Direction From Primary Structure: South
Other Directions: North of Orchard Avenue
Total Depth of Contamination: 6 inches
Approximate Square Footage: 168

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-12373-RS, includes removal of all areas identified as containing radioactive material (as discussed in Section 3.5 and shown in Appendix Figure 3.3) 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 \$6,068.

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	Radium Concentrations at Interior Locations
Table 3.3	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 3.2a	Interior Sample Locations
Figure 3.2b	Exterior Sample Locations
Figure 3.3	Exterior Estimated Extent of Contamination
Official Survey Report	
Team Leader Notes	
Deconvolution Graphs (Apparent Radium-226 Concentration)	
Exterior Gamma Scan Map	

Radium Concentrations at Exterior Locations

DOE ID #GJ-12373-RS

2884 Orchard Avenue

Page 1 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
11	148214	00	DS	1.1		*	Gas line
		18	DS	1.7		*	
12	148260	00	DS	1.3		*	West side of primary structure
		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	3.7		*	
		21	TC	3.7		*	
		24	TC	3.7		*	
		27	TC	3.7		*	
		30	TC	3.7		*	
		33	TC	3.7		*	
13	155164	00	DS	9.4		*	Southwest corner of property
		03	TC	11.3		*	
		06	TC	14.5		*	
		09	TC	14.8		*	DC = 39 inches Based on the deconvolution graph
		12	TC	12.8		*	
		15	TC	11.3		*	
		18	TC	11.2		*	
		21	TC	11.6		*	
		24	TC	12.0		*	
		27	TC	12.5		*	
		30	TC	12.2		*	
		33	TC	10.4		*	
		36	TC	8.0		*	
		39	TC	5.9		*	
		42	TC	4.9		*	
		45	TC	4.3		*	
		48	TC	4.1		*	
		51	TC	3.9		*	
		54	TC	3.9		*	
		57	TC	3.8		*	
		60	TC	3.8		*	
14	156208	00	DS	1.3		*	Water line
15	160161	00	DS	2.7		*	Next to Orchard Avenue

Radium Concentrations at Exterior Locations

DOE ID #GJ-12373-RS

2884 Orchard Avenue

Page 2 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
16	160269	00	DS	<1.0		*	North yard
		00	DS	1.3		*	Against foundation
		06	DS	2.1		*	
		12	DS	1.2		*	
		12	DS	<1.0		*	Under footing
		00	GS		<1.0	*	Against footing
		12	GS		1.5	*	Under footing
17	170162	00	DS	9.9		*	South of primary
		06	DS	1.4		*	structure
18	170166	00	DS	15.0		*	South of primary
		03	TC	13.4		*	structure
		06	TC	14.2		*	
		09	TC	11.3		*	DC = 12 inches
		12	TC	8.6		*	Based on the
		15	TC	6.7		*	deconvolution graph
		18	TC	5.5		*	
		21	TC	4.8		*	
		24	TC	4.5		*	
		27	TC	4.2		*	
		30	TC	4.1		*	
		33	TC	4.0		*	
		36	TC	3.9		*	
19	170269	00	DS	1.5		*	North side of
		06	DS	2.3		*	primary structure
		12	DS	1.5		*	
20	172201	00	DS	5.8		*	Flower bed
		06	DS	2.0		*	
21	172250	00	DS	13.1		*	On carport
22	172263	00	DS	14.0		*	Northwest corner of
		03	TC	11.8		*	carport
		06	TC	18.1		*	
		09	TC	14.6		*	DC = 12 inches
		12	TC	9.7		*	Based on the
		15	TC	6.8		*	deconvolution graph
		18	TC	5.7		*	
		21	TC	5.1		*	
		24	TC	4.8		*	
		27	TC	4.6		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-12373-RS

2884 Orchard Avenue

Page 3 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
22	172263	30	TC	4.4		*	
		33	TC	4.4		*	
		36	TC	4.2		*	
		39	TC	4.1		*	
		42	TC	4.0		*	
		45	TC	3.9		*	
		48	TC	3.9		*	
		51	TC	3.8		*	
		54	TC	3.6		*	
		57	TC	3.7		*	
		60	TC	3.6		*	
		63	TC	3.6		*	
		66	TC	3.5		*	
		69	TC	3.5		*	
23	174171	00	DS	1.9		*	Next to irrigation ditch
24	177213	00	DS	8.8		*	Electric line
		06	DS	2.7		*	Exposed at 3 inches
25	177245	00	DS	<1.0		*	Carport
		03	TC	2.7		*	
		06	TC	3.0		*	DC = 0 inches
		09	TC	3.3		*	
		12	TC	3.6		*	
25	177245	15	TC	3.7		*	
		18	TC	3.9		*	
		21	TC	4.0		*	
		24	TC	4.0		*	
		27	TC	4.0		*	
		30	TC	3.9		*	
		33	TC	4.0		*	
		36	TC	4.0		*	
26	180162	00	DS	11.3		*	South of primary structure
		06	DS	1.9		*	
27	180239	00	DS	1.1		*	On carport
28	180260	00	DS	6.4		*	On carport

Radium Concentrations at Exterior Locations

DOE ID #GJ-12373-RS

2884 Orchard Avenue

Page 4 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
29	190160	00	DS	2.5		*	South of primary structure
30	190241	00	DS	25.0		*	On carport
		03	TC	33.4		*	
		06	TC	41.3		*	DC = 12 inches
		09	TC	27.3		*	Based on the
		12	TC	16.0		*	deconvolution graph
		15	TC	10.0		*	
		18	TC	7.1		*	
		21	TC	5.9		*	
		24	TC	5.2		*	
		27	TC	4.9		*	
		30	TC	4.8		*	
		33	TC	4.7		*	
		36	TC	4.7		*	
		39	TC	4.4		*	
		42	TC	4.2		*	
		45	TC	4.0		*	
		48	TC	4.0		*	
		51	TC	3.9		*	
		54	TC	3.8		*	
		57	TC	3.8		*	
		60	TC	3.8		*	
		63	TC	3.7		*	
		66	TC	3.6		*	
31	190267	00	DS	1.5		*	Northeast corner of carport
32	200168	00	DS	10.2		*	South of primary structure
		03	TC	9.0		*	
		06	TC	8.4		*	
		09	TC	6.3		*	DC = 9 inches
		12	TC	5.2		*	Based on the
		15	TC	4.5		*	deconvolution graph
		18	TC	4.3		*	
		21	TC	4.1		*	
		24	TC	3.9		*	
		27	TC	3.9		*	
		30	TC	3.8		*	
		33	TC	3.8		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-12373-RS

2884 Orchard Avenue

Page 5 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
33	200241	00	DS	1.2		*	Sewer line
		00	GS		<1.0	*	
		03	TC	3.3		*	
		06	TC	3.6		*	DC = 0 inches
		09	TC	3.7		*	
		12	TC	3.9		*	
		15	TC	3.9		*	
		18	TC	3.9		*	
		21	TC	3.9		*	
		24	TC	3.9		*	
		27	TC	3.9		*	
		30	TC	3.8		*	
		33	TC	3.8		*	
		36	TC	3.9		*	
		39	TC	3.9		*	
		42	TC	3.9		*	
		45	TC	3.9		*	
		48	TC	3.8		*	
		51	TC	3.7		*	
		54	TC	3.7		*	
34	200260	00	DS	5.9		*	On driveway adjacent to carport
35	210250	00	DS	<1.0		*	On driveway
36	210260	00	DS	1.1		*	On driveway
37	215208	00	DS	7.6		*	Flower garden
		06	DS	9.4		*	
		03	TC	8.0		*	
		06	TC	9.1		*	DC = 12 inches
		09	TC	7.9		*	Based on the
		12	TC	6.1		*	Deconvolution graph
		15	TC	5.0		*	
		18	TC	4.4		*	
		21	TC	4.2		*	
		24	TC	4.1		*	
		27	TC	3.9		*	
		30	TC	3.9		*	
		33	TC	3.9		*	

Radium Concentrations at Exterior Locations

DOE ID #GJ-12373-RS

2884 Orchard Avenue

Page 6 of 6

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
38	220280	00	DS	1.1		*	Background
		00	GS		<1.0	*	
		03	TC	2.9		*	DC = 0 inches
		06	TC	3.3		*	
		09	TC	3.5		*	
		12	TC	3.6		*	
		15	TC	3.7		*	
		18	TC	3.7		*	
		21	TC	3.6		*	
		24	TC	3.6		*	
		27	TC	3.7		*	
		30	TC	3.6		*	
		33	TC	3.7		*	
		36	TC	3.7		*	

Measurement GB = GAD-6 Borehole
Types: 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 = 06-28-85
Team Leader = JH

Radium Concentrations at Interior Locations

DOE ID #GJ-12373-RS

2884 Orchard Avenue

Page 1 of 1

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
1		00	DS	<1.0		*	Southwest corner of family room
2		00	DS	<1.0		*	Northwest corner of family room
3		00	DS	1.2		*	Southeast corner of family room
4		00	DS	<1.0		*	Northeast corner of family room
5		00	DS	<1.0		*	Norht center of family room
6		00	DS	1.2		*	South center of family room
		00	GS		<1.0	*	
7		00	GS		1.7	*	Against fireplace
8		[14]	GS		2.0	*	On deck against fireplace
9		00	DS	1.2		*	In north closet of family room
10		00	DS	1.7		*	In south closet of family room

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 = 06-28-85

Team Leader = JH

Table 3.3

Summary of Interior Gamma Exposure Rates

DOE ID No. GJ-12373-RS

2884 Orchard Avenue

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)
Ground Floor	*	*	*	*	14-16	*
Family Room	09	17-20	18	09	17-19	18

* A walking gamma scan on the ground floor and a grid point gamma survey in the family room were performed to confirm the absence of interior contamination.

Table 4.1
Area and Volume Calculations
DOE ID No. GJ-12373-RS

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					
Concrete					
A	26 x 29.5 =	767			
	4.5 x 19.5 =	88			
		855	x 0.3 =	257	
	Volume of Concrete			= 257 =	257/27 = 10
Contaminated Fill					
A	26 x 29.5 =	767			
	4.5 x 19.5 =	88			
		855	x 0.7 =	599	
B	4 x 9 =	36	x 0.5 =	18	
C	6 x 6 =	36	x 0.5 =	18	
D	7 x 6 =	42	x 1.0 =	42	
E	6 x 4 =	24	x 3.3 =	79	
F	4 x 26 =	104	x 1.0 =	104	
G	4 x 19 =	76	x 0.8 =	61	
H	4 x 42 =	168	x 0.5 =	84	
	Volume of Fill			= 1,005 =	1,005/27 = 37
	TOTAL VOLUME - EXTERIOR				= 47

See Appendix Figure 3.3 For Areas

Table 4.2
Estimated Cost of Decontamination and Restoration
DOE ID No. GJ-12373-RS

Page 1 of 1

EXTERIOR

Remove/replace concrete carport slab	
855 sf @ \$3/sf	\$ 2,565
Remove identified residual radioactive material	
7 cy @ \$44/cy (manual-open)	308
30 cy @ \$14.50/cy (machine-open)	435
Replace areas with topsoil	
12 cy @ \$9.50/cy	114
Replace areas with roadbase	
25 cy @ \$11.50/cy	288
Replace areas with sod	
240 sf @ \$.35/sf	84
Replace plantings	
Lump sum	250

TOTAL EXTERIOR \$ 4,044

TOTAL INTERIOR 0

ACCESS CONTROL 200

SUBTOTAL \$ 4,244

CONTINGENCY @ 10% 424

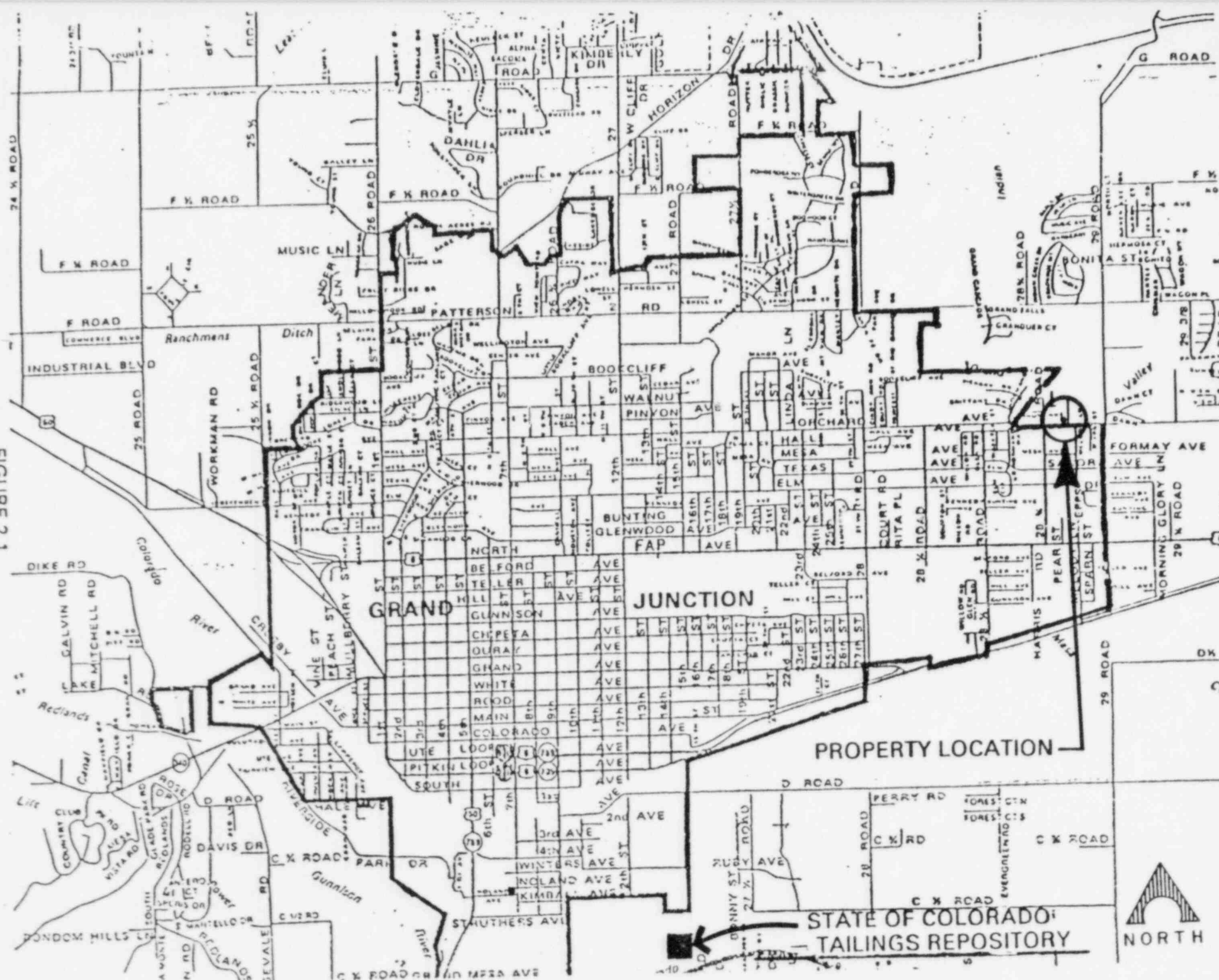
SUBTOTAL \$ 4,668

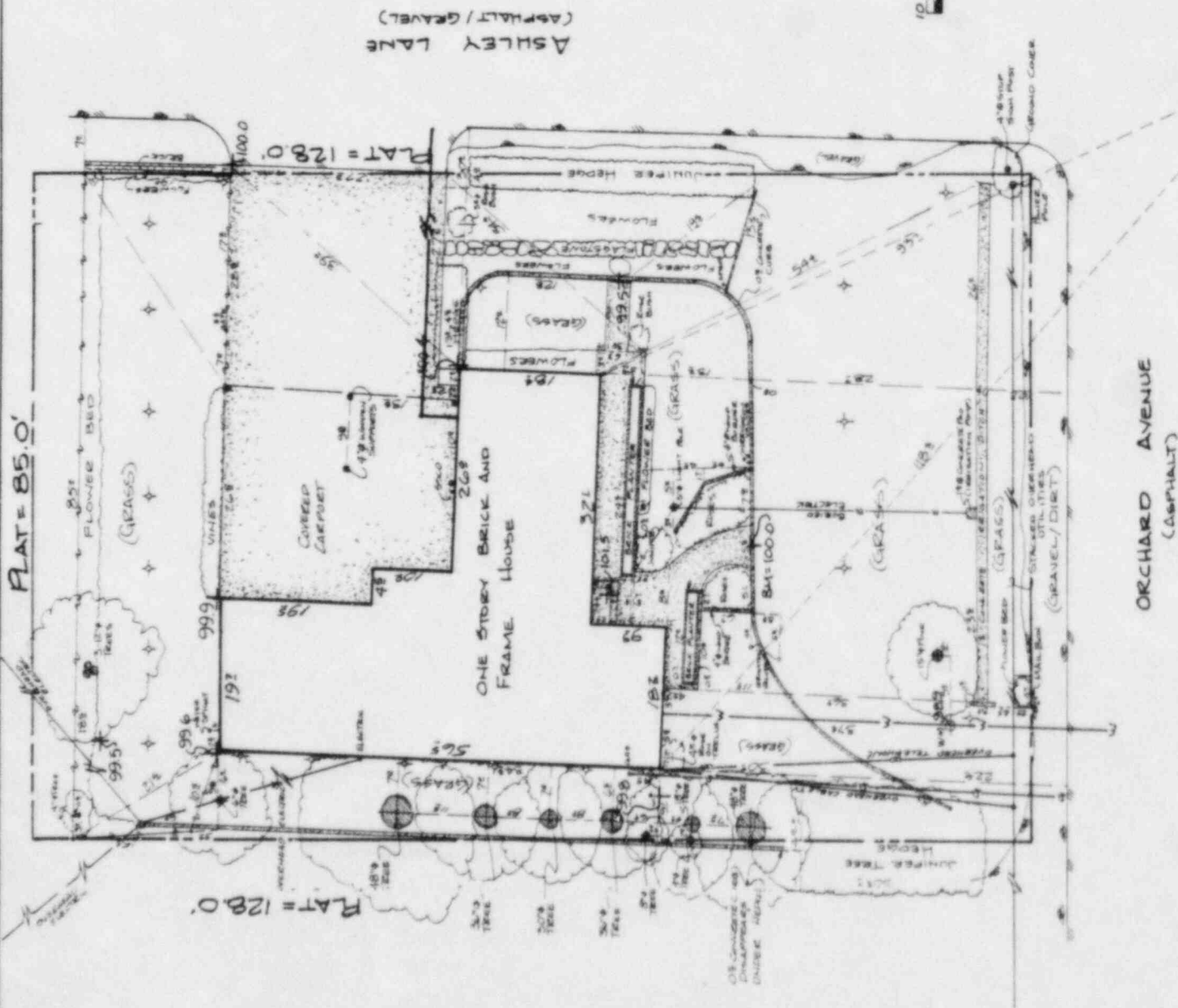
CONTRACTOR OVERHEAD & PROFIT @ 30% 1,400

GRAND TOTAL \$ 6,068

RR082085
REAL2373/REA-619/LMR

FIGURE 2.1
VICINITY MAP



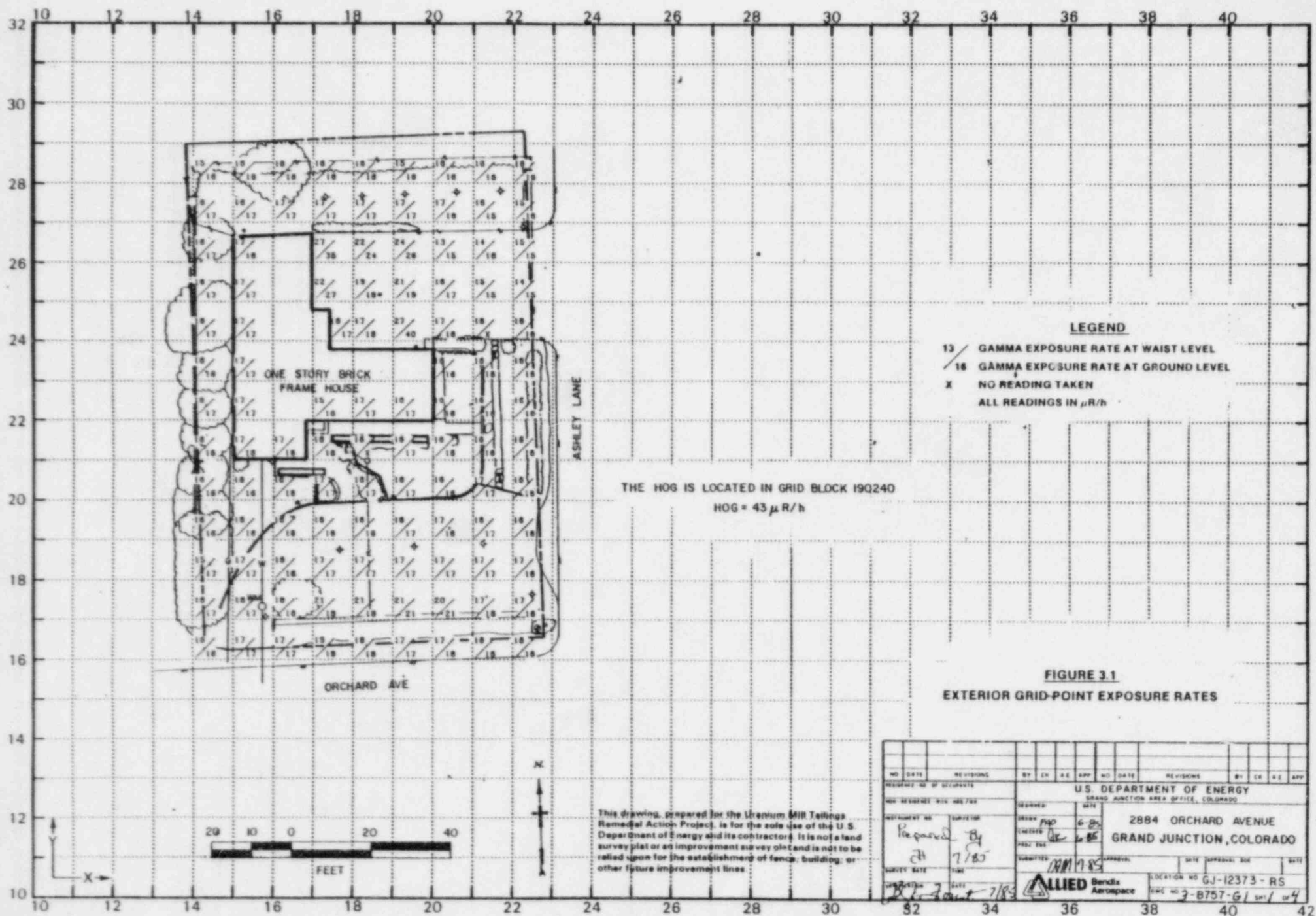


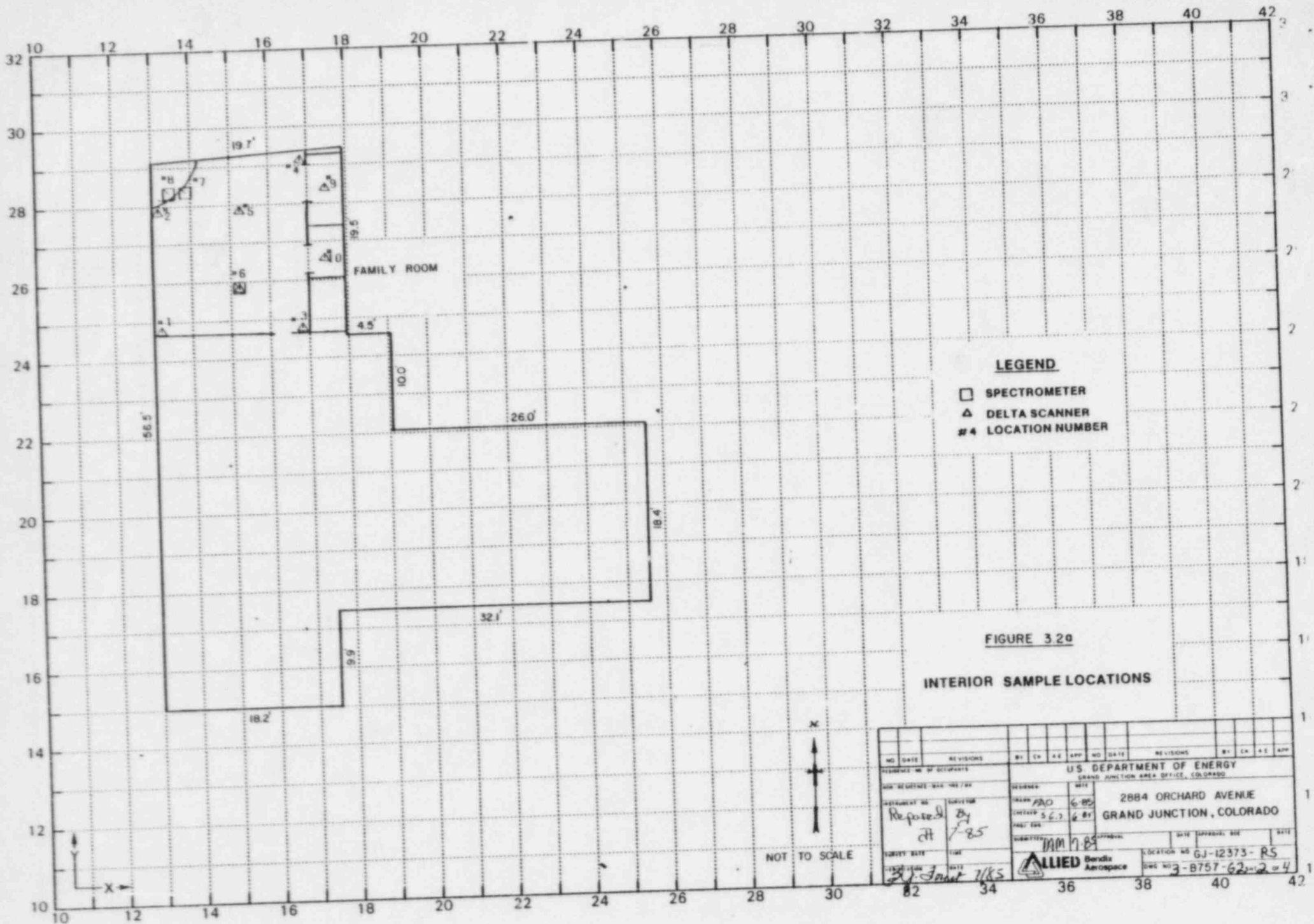
BEGINNING 814.0 FEET WEST AND 30.0 FEET NORTH OF THE SOUTH EAST CORNER OF THE NE 1/4 SECTION 7, T.15, R.1E, 10M., MESA COUNTY, COLORADO, THENCE NORTH 128.0 FEET, THENCE WEST 85.0 FEET, THENCE SOUTH 128.0 FEET, THENCE EAST TO BEGINNING.

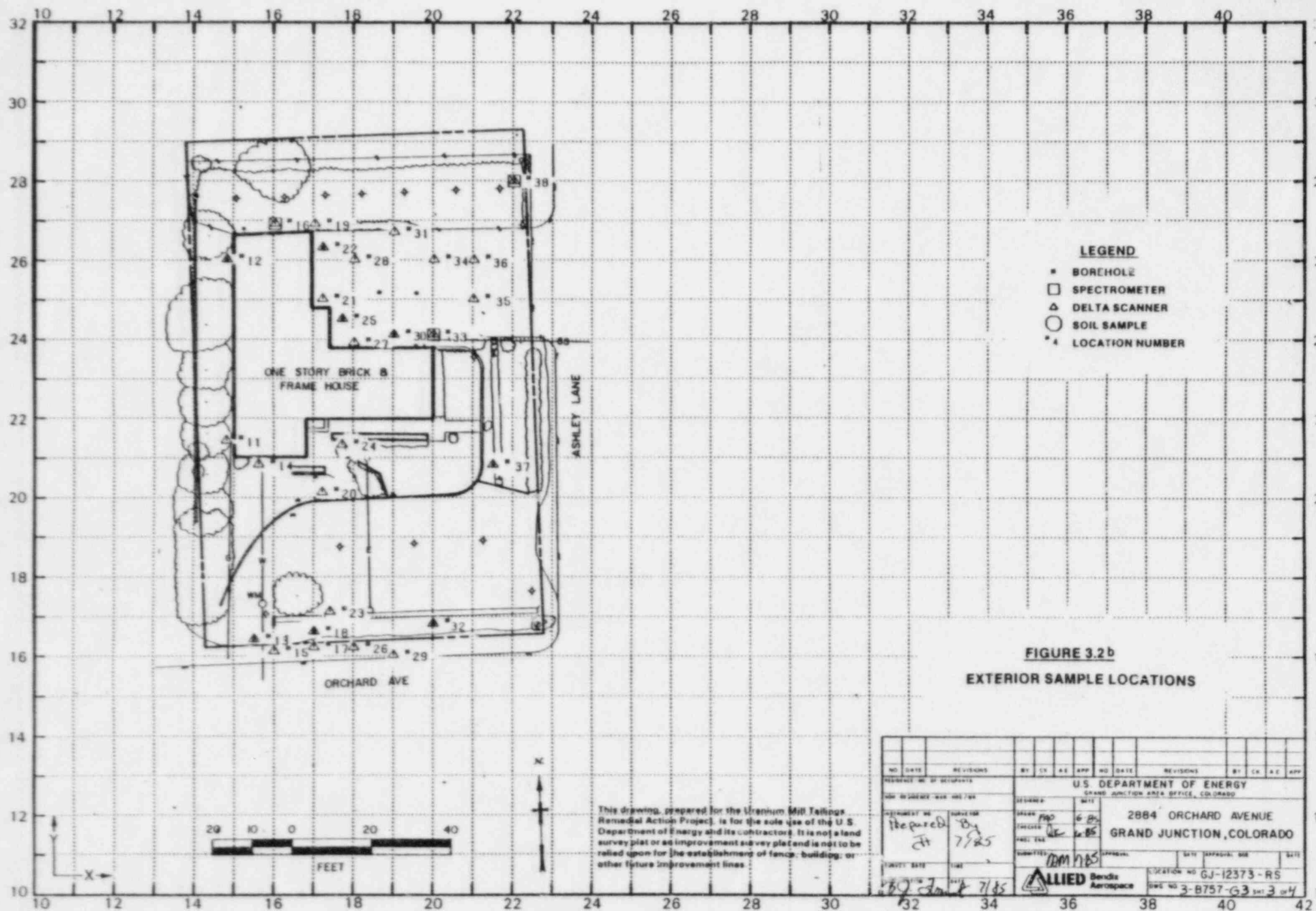
This drawing prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and is not to be used for any other purpose without the written consent of the U.S. Department of Energy. The U.S. Department of Energy is not responsible for the accuracy or reliability of the information shown on this drawing, nor for the establishment of fence building, or other future improvement lines.

Tax Schedule No. 1943-071-00-034	U.S. DEPARTMENT OF ENERGY	U.S. GEOLOGICAL SURVEY
GRAND JUNCTION PROJECT OFFICE, COLORADO	ADDRESS 2804 ORCHARD AVENUE	GRAND JUNCTION, COLORADO
GRAND JUNCTION, COLORADO	DATE 10/21/85	DRAWN BY 3 C 157 F1
U.S. GEOLOGICAL SURVEY	U.S. GEOLOGICAL SURVEY	U.S. GEOLOGICAL SURVEY
U.S. GEOLOGICAL SURVEY	U.S. GEOLOGICAL SURVEY	U.S. GEOLOGICAL SURVEY

FIGURE 2.2 SITE PLAN







This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

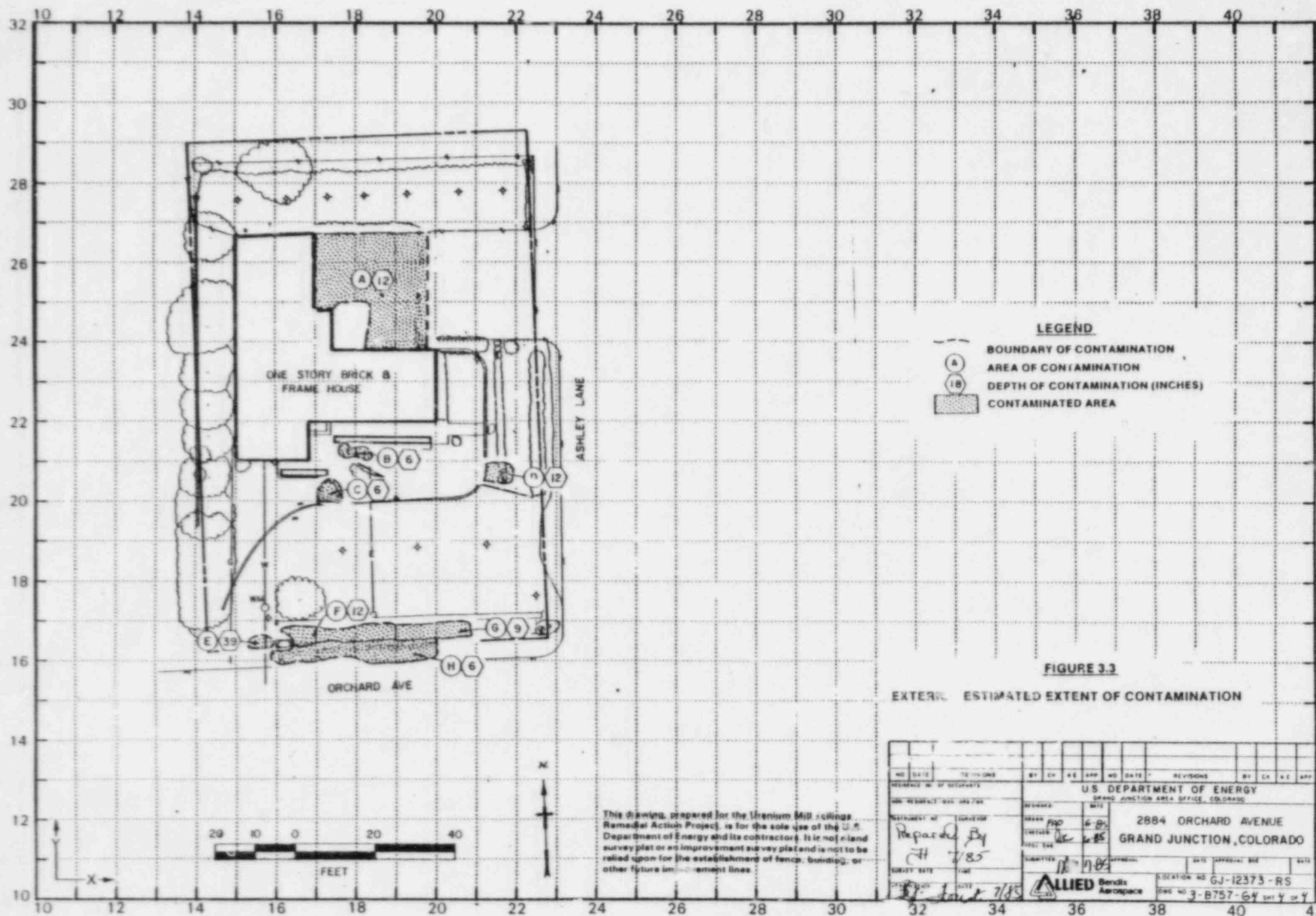


FIGURE 3.3

EXTERNAL ESTIMATED EXTENT OF CONTAMINATION

[illegible]

3/85

DOE ID NO. GJ-12373-RS

Date July 19, 1985

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

Official Survey Report

Property Address 2884 Orchard Avenue

Property Owner Mr. Robert E. Coane

Address of Owner (if different from above) -----

Report Prepared By Juna Hebel

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

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

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

1 XX 1 In open areas.

1 XX 1 Under or around exterior improvements.

1 1 Under or around a typically nonoccupied structure.

1 XX 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 XX 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/CDH

J. Themelis, Mgr. UMTRA Proj. Off.

HIG = 20 uR/h
HOG = 43 uR/h

MEMORANDUM

ALLIED Bendix
Aerospace

Bendix Field Engineering Corporation
Grand Junction Operations
Grand Junction, Colorado

Date: June 28, 1985

To: Files

From: Juna Hebel

Subject: Team Leader Notes - GJ-12373-RS

Address: 2884 Orchard Avenue

Owner: Robert E. Coane

Occupancy: Two

Telephone: 242-4479

Weather: Sunny, hot, nice

Colorado Department of Health (CDH) and Oak Ridge National Laboratory (ORNL) data indicates contamination in the south yard extending to Orchard Avenue, and under and around the carport.

Team Members

J. Hebel (Team Leader)	D. Dow
M. Gilfillan	L. Kula
G. Meeker	M. Duran
R. Beltz	

Instruments

Crutch Scintillometers: C-1214, C-1020, C-1149, C-1115, C-1196, C-1182, C-1206, C-3510
Delta Scintillometers: C-4066, C-3942, C-4060
Total Count Meters: C-3957, C-4005, C-9202
Surface Spectrometer: C-1372

Team Leader Notes
Juna Hebel
GJ-12373-RS
June 28, 1985
Page 2

The Bendix team arrived at 2884 Orchard Avenue at 8:00 AM on 28 June 1985.

The approval to survey was verbally given by Mr. Coane. Mr. Coane stated that he purchased the house in 1967 and thought the house was approximately 31 years old. The carport was already there, but the driveway was put in approximately 15 years ago. The family room was already there when he purchased the house, but was informed by previous owners that it was at one time used as a garage.

An interior gamma survey was performed on the ground floor of the primary structure, no elevated readings were found. A walking scan range was used for this section (90 to 115 counts per second [cps]).

Elevated readings were noted in the family room, which is located in the northwest portion of the primary structure. This area was investigated with grid points, deltas, and surface spectrometer measurements. The family room has a wood floor which sits on top of a concrete slab. A fireplace is located in the northwest portion of the room, which was put in approximately 4 or 5 years ago. There are two closets in this room on the east side. On the back side of these closets are storage space compartments which are located on the west side of the carport. No evidence of contamination was found from readings which were taken.

On the exterior, the property was laid out in 10- by 10-foot grids. An exterior gamma scan and grid point survey was performed to verify or deny data taken by CDH and ORNL.

Elevated measurements were detected in the south yard, east yard, adjacent to Orchard Avenue, and on the carport, which is covered. These areas were further investigated with deltas, surface spectrometer, and auger holes. The holes were then logged with a total count meter. Cores were augered on the carport. The concrete core was 4-inches thick, holes were then logged.

There is a buried electrical line in the south yard. The line runs to a light pole in the yard and then through the yard to an irrigation pump. The pump is located on the north side of the irrigation ditch, which runs east and west along the property line.

Team Leader Notes
Juna Hebel
GJ-12373-RS
June 28, 1985
Page 3

The electrical line was exposed at 3 inches next to the walkway, which is adjacent to the primary structure. Elevated readings were noted in this section. A surface and subsurface delta was performed in order to investigate elevated readings.

On the northwest side of the primary structure a surface and subsurface delta and a surface spectrometer was performed on and against the foundation and footing. An auger hole was also done on the west side of the structure to check if elevated readings in the family room were caused by a contaminated foundation. No evidence of contamination was noted from the data taken.

Mr. Coane assisted the Bendix team in locating the sewer line, which runs along the south side of the carport and driveway. The sewer line is adjacent to the primary structure and runs towards the east out to Ashley Lane as far as we could detect. The sewer and water lines were investigated with auger holes that were then logged. A surface and subsurface delta was performed over and on top of the gas lines, which is located on the west side of the primary structure. When digging the gas line a water sprinkler line was hit and broken. The Bendix office was called and informed of the situation. The water sprinkler line was then repaired. No evidence of contamination was noted around the utilities, nor was there evidence of contamination around the foundation.

All work details and actions were performed in a safe manner. No accidents occurred while on the site. The Bendix crew was frisked for possible contamination, none was found on persons.

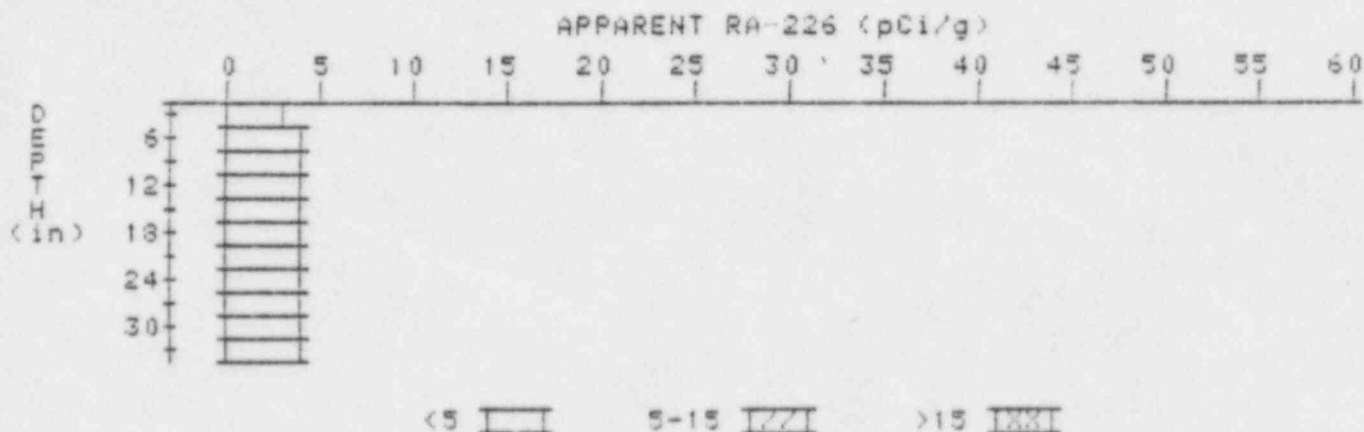
APPARENT RADIUM-226 CONCENTRATION 12

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-12373-RS

HOLE NUMBER: 12

LOCATION: 148260



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	4.0
18	3.7	3.5
21	3.7	3.7
24	3.7	3.7
27	3.7	3.7
30	3.7	3.7
33	3.7	3.7

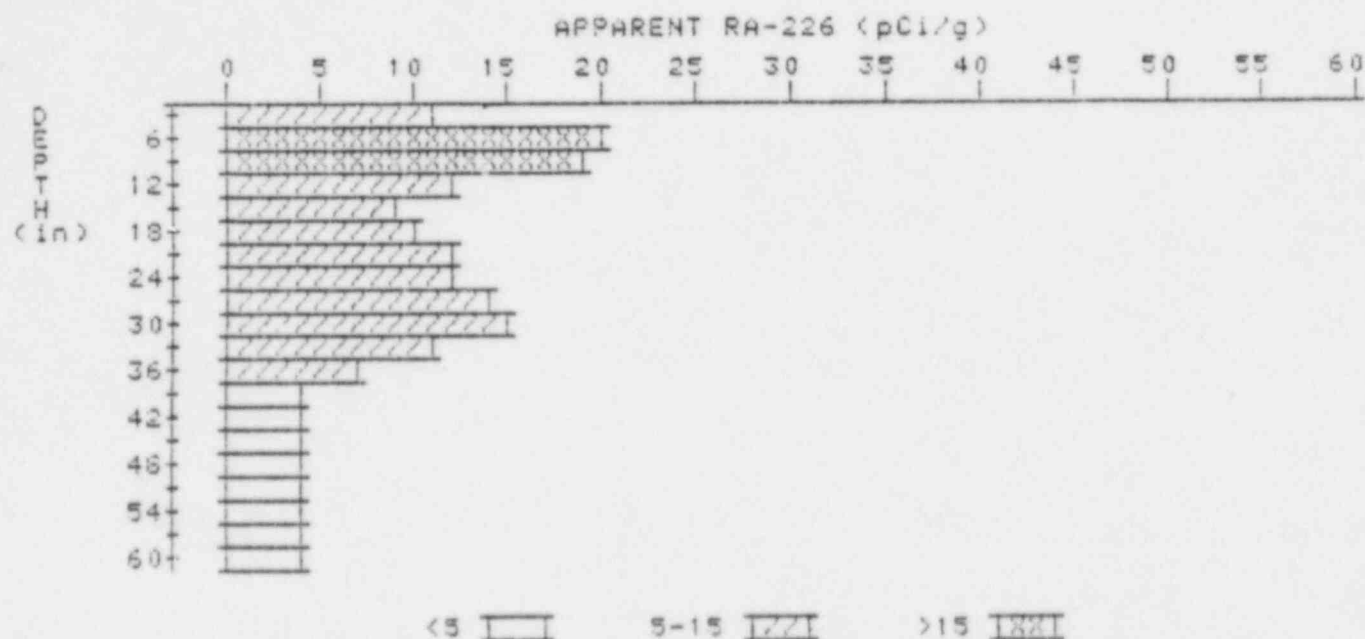
APPARENT RADIUM-226 CONCENTRATION 13

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-12373-RS

HOLE NUMBER: 13

LOCATION: 155164



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	11.3	11.3
6	14.5	19.7
9	14.8	18.9
12	12.8	11.9
15	11.3	8.8
18	11.2	10.3
21	11.6	11.6
24	12.0	11.8
27	12.5	13.9
30	12.2	14.9
33	10.4	11.5
36	8.0	7.5
39	5.9	3.9
42	4.9	4.2
45	4.3	3.6
48	4.1	4.1
51	3.9	3.8
54	3.9	4.1

57
60

3.2
3.2

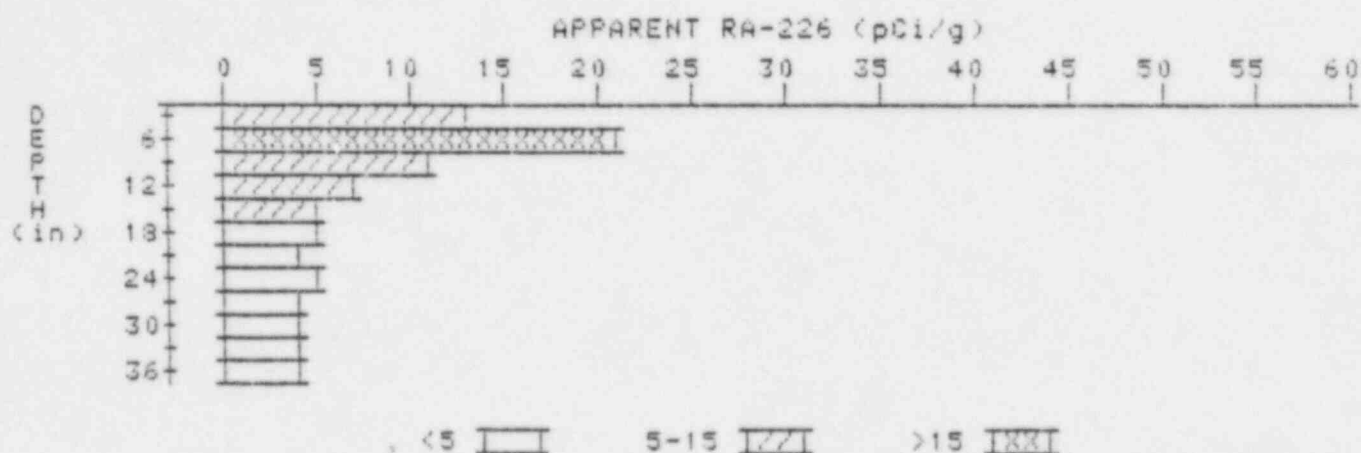
3.6
3.2

APPARENT RADIUM-226 CONCENTRATION 18 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-12373-RS

HOLE NUMBER: 18

LOCATION: 170166



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	13.4	13.4
6	14.2	20.8
9	11.3	10.9
12	8.6	7.2
15	6.7	5.5
18	5.5	4.6
21	4.8	4.1
24	4.5	4.5
27	4.2	3.8
30	4.1	4.1
33	4.0	4.0
36	3.9	3.9

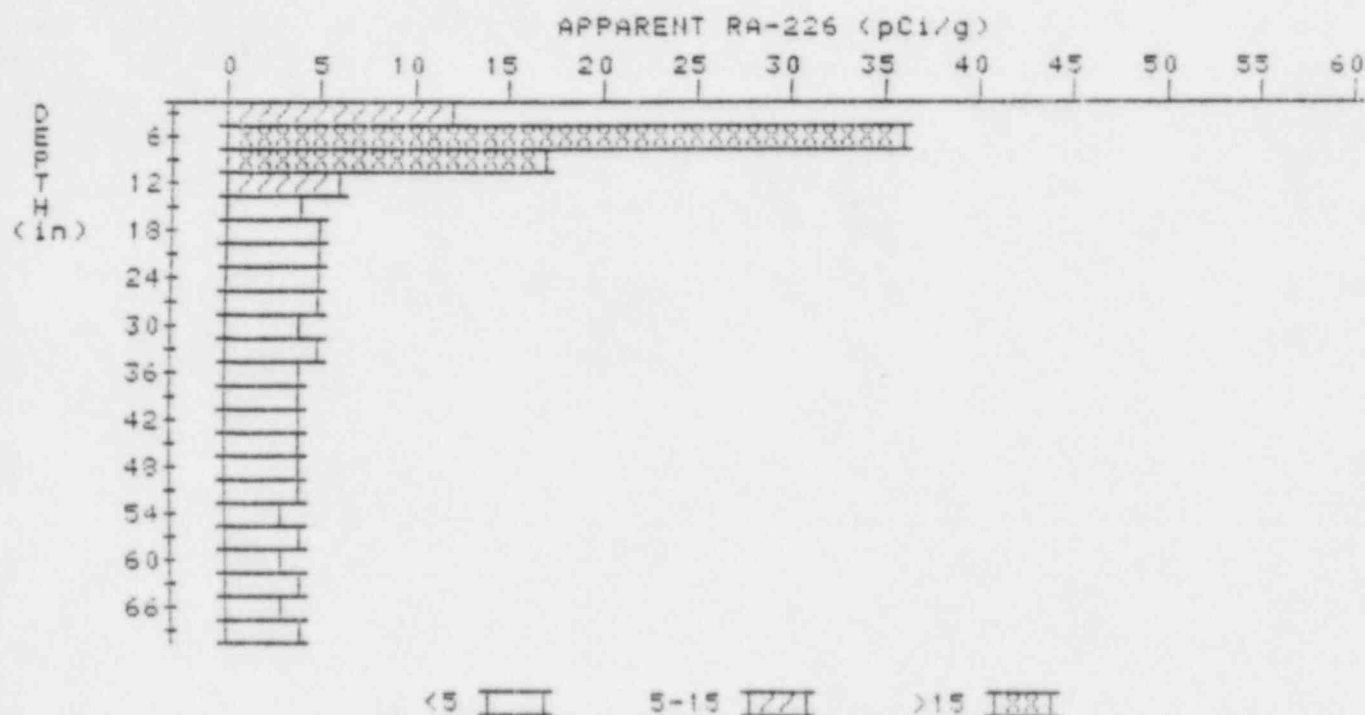
APPARENT RADIUM-226 CONCENTRATION 22

DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-12373-RS

HOLE NUMBER: 22

LOCATION: 172263



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	11.8	11.8
6	18.1	35.5
9	14.6	17.1
12	9.7	6.1
15	6.8	3.6
18	5.7	4.8
21	5.1	4.6
24	4.8	4.6
27	4.6	4.6
30	4.4	4.0
33	4.4	4.8
36	4.2	4.0
39	4.1	4.1
42	4.0	4.0
45	3.9	3.7

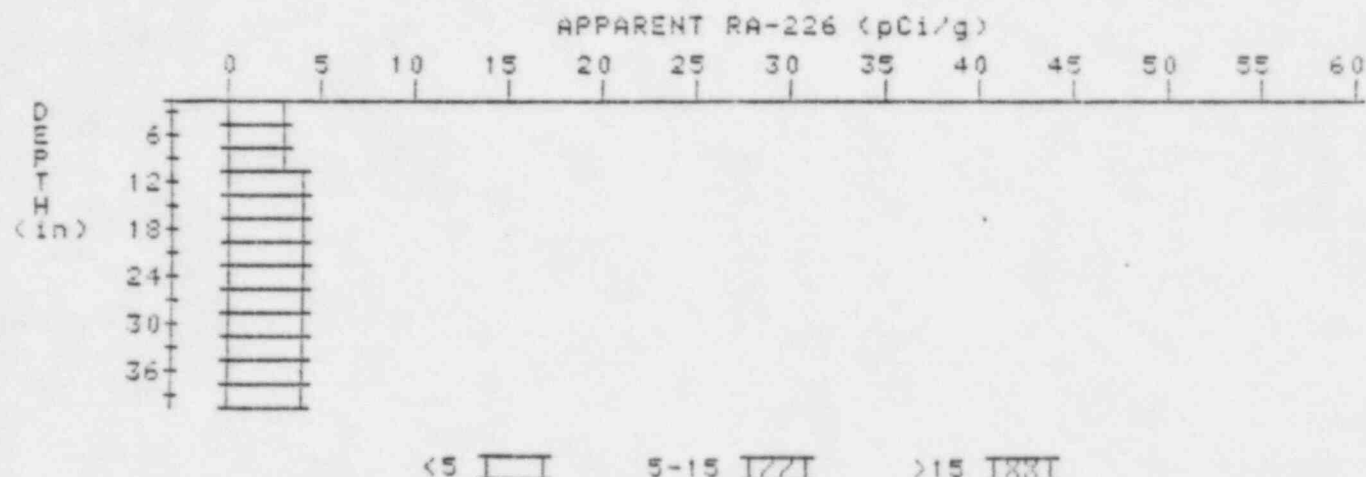
48
51
54
57
60
63
66
69

3.9
3.8
3.6
3.7
3.6
3.6
3.5
3.8

4.1
4.0
3.1
4.1
3.4
3.8
3.3
3.5

APPARENT RADIUM-226 CONCENTRATION 25 DECONVOLUTION GRAPH

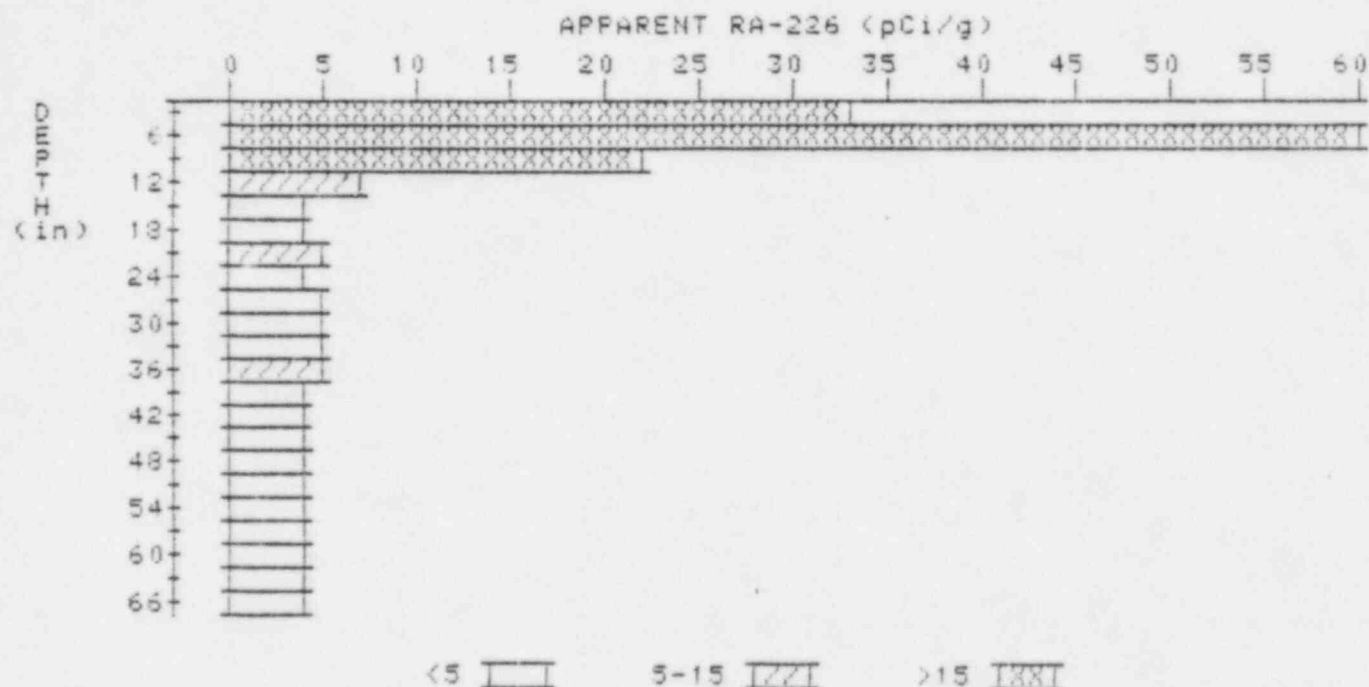
PROPERTY NUMBER: GJ-12373-RS
HOLE NUMBER: 25
LOCATION: 177245



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.7	2.7
6	3.0	3.0
9	3.3	3.3
12	3.6	4.0
15	3.7	3.5
18	3.9	4.1
21	4.0	4.2
24	4.0	4.0
27	4.0	4.2
30	3.9	3.5
33	4.0	4.2
36	4.0	4.2
39	3.9	3.9

APPARENT RADIUM-226 CONCENTRATION 30 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-12373-RS
HOLE NUMBER: 30
LOCATION: 190241



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	33.4	33.4
6	41.3	30.2
9	27.3	22.5
12	16.0	6.6
15	10.0	4.5
18	7.1	4.1
21	5.9	5.0
24	5.2	4.5
27	4.9	4.5
30	4.8	4.3
33	4.7	4.5
36	4.7	5.2
39	4.4	4.2
42	4.2	4.2
45	4.0	3.6
48	4.0	4.2

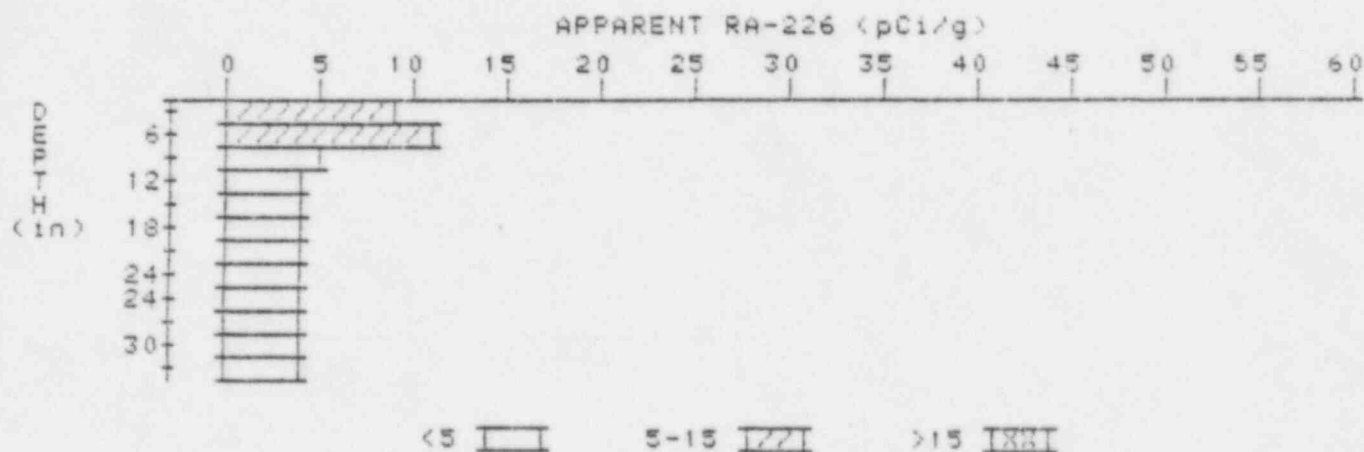
51
54
57
60
63
66

61 61 61 61 61
61 61 61 61 61
61 61 61 61 61
61 61 61 61 61
61 61 61 61 61
61 61 61 61 61

61 61 61 61 61
61 61 61 61 61
61 61 61 61 61
61 61 61 61 61
61 61 61 61 61
61 61 61 61 61

APPARENT RADIUM-226 CONCENTRATION 32 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-12373-RS
HOLE NUMBER: 32
LOCATION: 200168



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	9.0	9.0
6	8.4	11.1
9	6.3	4.5
12	5.2	4.5
15	4.5	3.6
18	4.3	4.3
21	4.1	3.9
24	4.0	4.0
24	3.9	3.7
27	3.9	4.1
30	3.8	3.6
33	3.8	3.8

APPARENT RADIUM-226 CONCENTRATION 33 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-12373-RS
HOLE NUMBER: 33
LOCATION: 200241



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.3	3.3
6	3.6	4.0
9	3.7	3.5
12	3.9	4.3
15	3.9	3.9
18	3.9	3.9
21	3.9	3.9
24	3.9	3.9
27	3.9	4.1
30	3.8	3.6
33	3.8	3.6
36	3.9	4.1
39	3.9	3.9
42	3.9	3.9
45	3.9	4.1
48	3.9	3.9

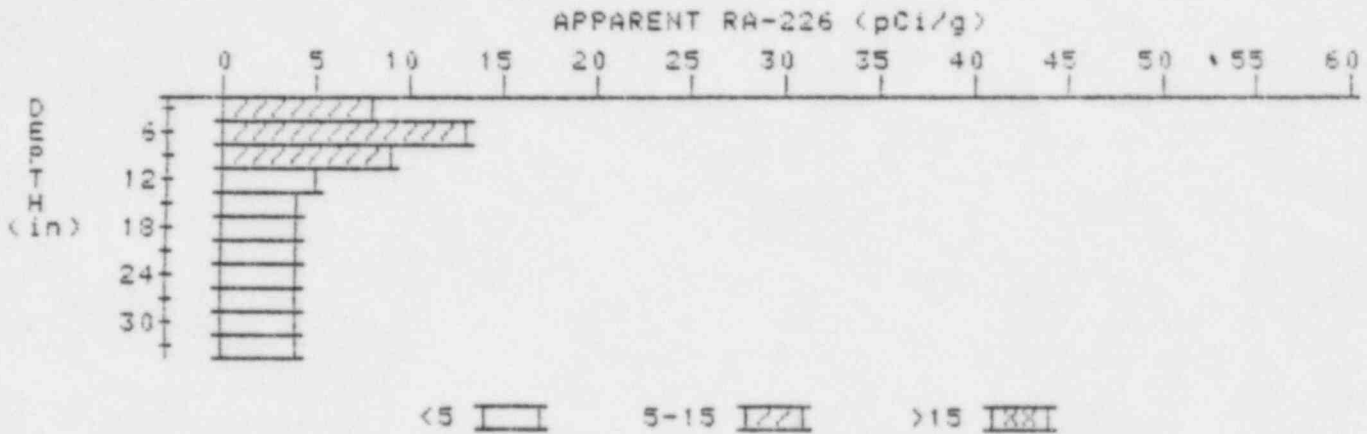
51
54
57
60
63
66

6.7
6.7
6.7
6.6
6.5
6.4

6.5
6.7
6.9
6.8
6.8
6.4

APPARENT RADIUM-226 CONCENTRATION 37 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-12373-RS
HOLE NUMBER: 37
LOCATION: 215208



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.0	8.0
6	9.1	13.2
9	7.9	9.0
12	6.1	4.9
15	5.0	4.1
18	4.4	3.7
21	4.2	4.0
24	4.1	4.3
27	3.9	3.5
30	3.9	3.9
33	3.9	3.9

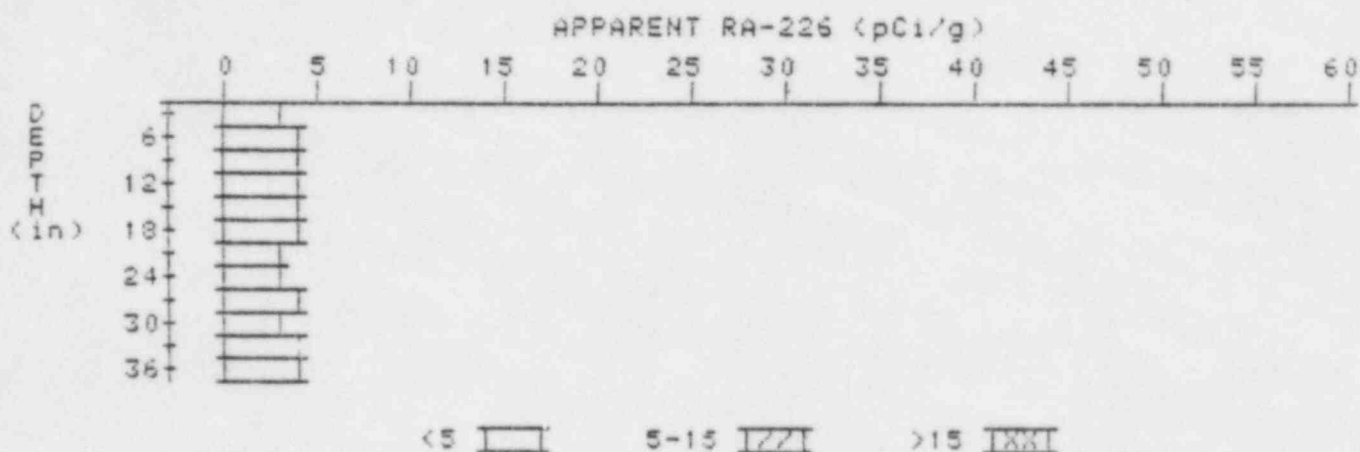
APPARENT RADIUM-226 CONCENTRATION 38

DECONVOLUTION GRAPH

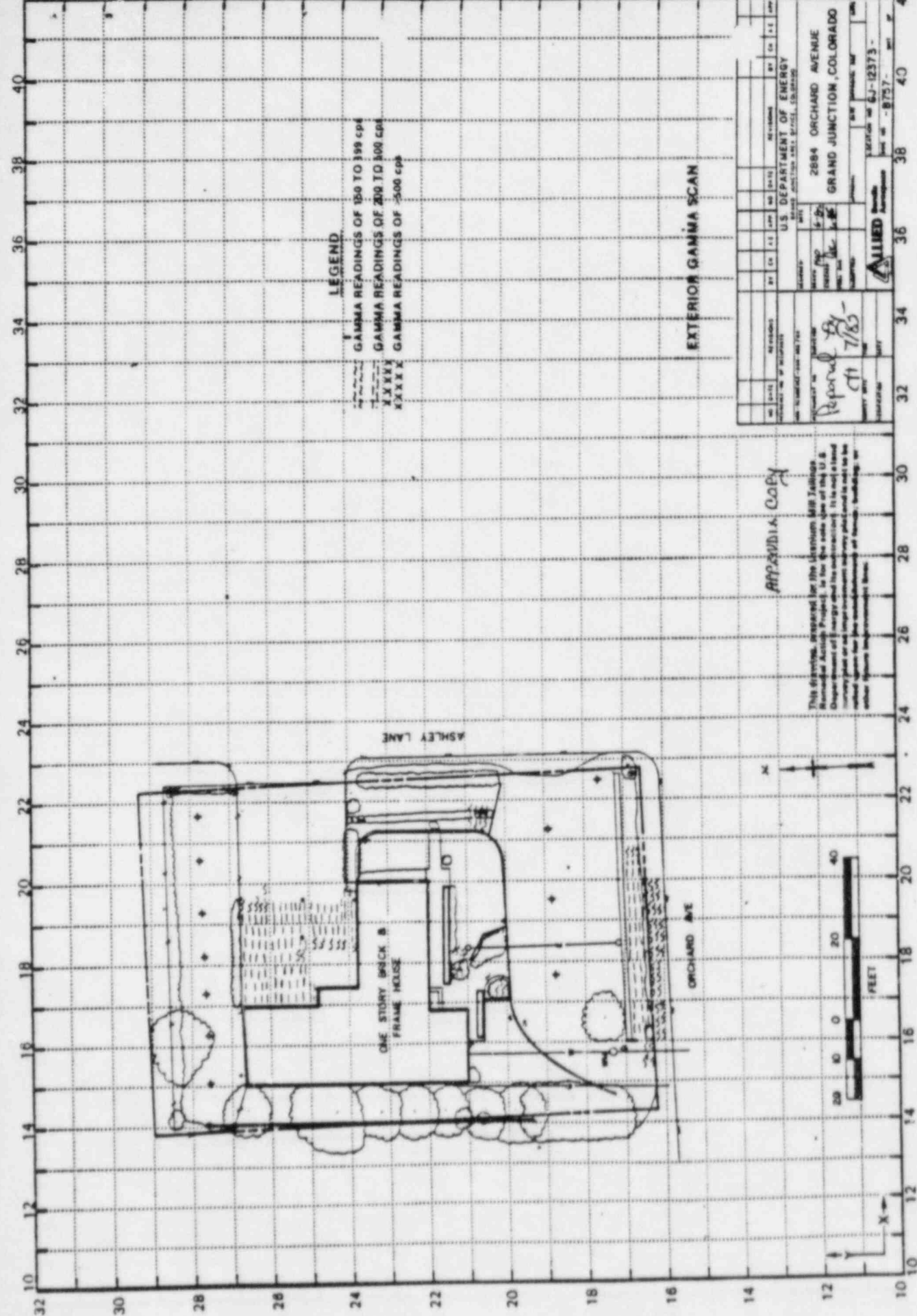
PROPERTY NUMBER: GJ-12373-RS

HOLE NUMBER: 38

LOCATION: 220280



Depth (in)	Apparent Radium-226 (pCi/g) Underconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.9	2.9
6	3.3	3.7
9	3.5	3.7
12	3.6	3.6
15	3.7	3.9
18	3.7	3.9
21	3.6	3.4
24	3.6	3.4
27	3.7	4.1
30	3.6	3.2
33	3.7	3.9
36	3.7	3.7



APPENDIX COPY

This drawing prepared for the Uranium Mill Tailings Remedial Action Project for the site of the U.S. Department of Energy and the contractor. It is not a final survey map or a large-scale map and should not be used for other purposes without the approval of the U.S. Department of Energy.

NO. 1-112	NO. 1-113	NO. 1-114	NO. 1-115	NO. 1-116	NO. 1-117	NO. 1-118	NO. 1-119	NO. 1-120	NO. 1-121	NO. 1-122	NO. 1-123	NO. 1-124	NO. 1-125	NO. 1-126	NO. 1-127	NO. 1-128	NO. 1-129	NO. 1-130	
U.S. DEPARTMENT OF ENERGY										2884 ORCHARD AVENUE GRAND JUNCTION, COLORADO									
Report by 7/1/83										ALLIED									
NO. 1-131										NO. 1-132									
NO. 1-133										NO. 1-134									
NO. 1-135										NO. 1-136									
NO. 1-137										NO. 1-138									
NO. 1-139										NO. 1-140									
NO. 1-141										NO. 1-142									
NO. 1-143										NO. 1-144									
NO. 1-145										NO. 1-146									
NO. 1-147										NO. 1-148									
NO. 1-149										NO. 1-150									
NO. 1-151										NO. 1-152									
NO. 1-153										NO. 1-154									
NO. 1-155										NO. 1-156									
NO. 1-157										NO. 1-158									
NO. 1-159										NO. 1-160									
NO. 1-161										NO. 1-162									
NO. 1-163										NO. 1-164									
NO. 1-165										NO. 1-166									
NO. 1-167										NO. 1-168									
NO. 1-169										NO. 1-170									
NO. 1-171										NO. 1-172									
NO. 1-173										NO. 1-174									
NO. 1-175										NO. 1-176									
NO. 1-177										NO. 1-178									
NO. 1-179										NO. 1-180									
NO. 1-181										NO. 1-182									
NO. 1-183										NO. 1-184									
NO. 1-185										NO. 1-186									
NO. 1-187										NO. 1-188									
NO. 1-189										NO. 1-190									
NO. 1-191										NO. 1-192									
NO. 1-193										NO. 1-194									
NO. 1-195										NO. 1-196									
NO. 1-197										NO. 1-198									
NO. 1-199										NO. 1-200									
NO. 1-201										NO. 1-202									
NO. 1-203										NO. 1-204									
NO. 1-205										NO. 1-206									
NO. 1-207										NO. 1-208									
NO. 1-209										NO. 1-210									
NO. 1-211										NO. 1-212									
NO. 1-213										NO. 1-214									
NO. 1-215										NO. 1-216									
NO. 1-217										NO. 1-218									
NO. 1-219										NO. 1-220									
NO. 1-221										NO. 1-222									
NO. 1-223										NO. 1-224									
NO. 1-225										NO. 1-226									
NO. 1-227										NO. 1-228									
NO. 1-229										NO. 1-230									
NO. 1-231										NO. 1-232									
NO. 1-233										NO. 1-234									
NO. 1-235										NO. 1-236									
NO. 1-237										NO. 1-238									
NO. 1-239										NO. 1-240									
NO. 1-241										NO. 1-242									
NO. 1-243										NO. 1-244									
NO. 1-245										NO. 1-246									
NO. 1-247										NO. 1-248									
NO. 1-249										NO. 1-250									
NO. 1-251										NO. 1-252									
NO. 1-253										NO. 1-254									
NO. 1-255										NO. 1-256									
NO. 1-257										NO. 1-258									
NO. 1-259										NO. 1-260									
NO. 1-261										NO. 1-262									
NO. 1-263										NO. 1-264									
NO. 1-265										NO. 1-266									
NO. 1-267										NO. 1-268									
NO. 1-269										NO. 1-270									
NO. 1-271										NO. 1-272									
NO. 1-273										NO. 1-274									
NO. 1-275										NO. 1-276									
NO. 1-277										NO. 1-278									
NO. 1-279										NO. 1-280									
NO. 1-281										NO. 1-282									
NO. 1-283										NO. 1-284									
NO. 1-285										NO. 1-286									
NO. 1-287										NO. 1-288									
NO. 1-289										NO. 1-290									
NO. 1-291										NO. 1-292									
NO. 1-293										NO. 1-294									
NO. 1-295										NO. 1-296									
NO. 1-297										NO. 1-298									
NO. 1-299										NO. 1-300									
NO. 1-301										NO. 1-302									
NO. 1-303										NO. 1-304									
NO. 1-305										NO. 1-306									
NO. 1-307										NO. 1-308									
NO. 1-309										NO. 1-310									
NO. 1-311										NO. 1-312									
NO. 1-313										NO. 1-314									
NO. 1-315										NO. 1-316									
NO. 1-317										NO. 1-318									
NO. 1-319										NO. 1-320									
NO. 1-321										NO. 1-322									
NO. 1-323										NO. 1-324									
NO. 1-325										NO. 1-326									
NO. 1-327										NO. 1-328									
NO. 1-329										NO. 1-330									
NO. 1-331										NO. 1-332									
NO. 1-333										NO. 1-334									
NO. 1-335										NO. 1-336									
NO. 1-337										NO. 1-338									
NO. 1-339										NO. 1-340									
NO. 1-341										NO. 1-342									
NO. 1-343										NO. 1-344									
NO. 1-345										NO. 1-346									
NO. 1-347										NO. 1-348									
NO. 1-349										NO. 1-350									
NO. 1-351										NO. 1-352									
NO. 1-353										NO. 1-354									
NO. 1-355										NO. 1-356									
NO. 1-357										NO. 1-358									
NO. 1-359										NO. 1-360									
NO. 1-361										NO. 1-362									
NO. 1-363										NO. 1-364									
NO. 1-365										NO. 1-366									
NO. 1-367										NO. 1-368									
NO. 1-369										NO. 1-370									
NO. 1-371										NO. 1-372									
NO. 1-373										NO. 1-374									
NO. 1-375										NO. 1-376									
NO. 1-377										NO. 1-378									
NO. 1-379										NO. 1-380									
NO. 1-381										NO. 1-382									
NO. 1-383										NO. 1-384									
NO. 1-385										NO. 1-386									
NO. 1-387										NO. 1-388									
NO. 1-389										NO. 1-390									
NO. 1-391										NO. 1-392									
NO. 1-393										NO. 1-394									
NO. 1-395										NO. 1-396									
NO. 1-397										NO. 1-398									
NO. 1-399										NO. 1-400									
NO. 1-401										NO. 1-402									
NO. 1-403										NO. 1-404									
NO. 1-405										NO. 1-406									
NO. 1-407										NO. 1-408									
NO. 1-409										NO. 1-410									
NO. 1-411										NO. 1-412									
NO. 1-413										NO. 1-414									
NO. 1-415										NO. 1-416									
NO. 1-417										NO. 1-418									
NO. 1-419										NO. 1-420									
NO. 1-421										NO. 1-422									
NO. 1-423										NO. 1-424									
NO. 1-425										NO. 1-426									
NO. 1-427										NO. 1-428									
NO. 1-429										NO. 1-430									
NO. 1-431										NO. 1-432									
NO. 1-433										NO. 1-434									
NO. 1-435										NO. 1-436									
NO. 1-437										NO. 1-438									
NO. 1-439										NO. 1-440									
NO. 1-441										NO. 1-442									
NO. 1-443										NO. 1-444									
NO. 1-445										NO. 1-446									
NO. 1-447										NO. 1-448									
NO. 1-449										NO. 1-450									
NO. 1-451										NO. 1-452									
NO. 1-453										NO. 1-454									
NO. 1-455										NO. 1-456									
NO. 1-457										NO. 1-458									
NO. 1-459										NO. 1-460									
NO. 1-461										NO. 1-462									
NO. 1-463										NO. 1-464									
NO. 1-465										NO. 1-466									
NO. 1-467										NO. 1-468									
NO. 1-469										NO. 1-470									
NO. 1-471										NO. 1-472									
NO. 1-473										NO. 1-474									
NO. 1-475										NO. 1-476									
NO. 1-477										NO. 1-478									
NO. 1-479										NO. 1-480									
NO. 1-481										NO. 1-482									
NO. 1-483										NO. 1-484									
NO. 1-485										NO. 1-486									
NO. 1-487										NO. 1-488									
NO. 1-489										NO. 1-490									
NO. 1-491										NO. 1-492									
NO. 1-493										NO. 1-494									
NO. 1-495										NO. 1-496									
NO. 1-497										NO. 1-498									
NO. 1-499										NO. 1-500									
NO. 1-501										NO. 1-502									
NO. 1-503										NO. 1-504									
NO. 1-505										NO. 1-506									
NO. 1-507										NO. 1-508									
NO. 1-509										NO. 1-510									
NO. 1-511										NO. 1-512									
NO. 1-513										NO. 1-514									
NO. 1-515										NO. 1-516									
NO. 1-517										NO. 1-518									
NO. 1-519										NO. 1-520									
NO. 1-521										NO. 1-522									
NO. 1-523										NO. 1-524									
NO. 1-525										NO. 1-526									
NO. 1-527										NO. 1-528									
NO. 1-529										NO. 1-530									
NO. 1-531										NO. 1-532									
NO. 1-533										NO. 1-534									
NO. 1-535										NO. 1-536									
NO. 1-537										NO. 1-538									
NO. 1-539										NO. 1-540									
NO. 1-541										NO. 1-542									
NO. 1-543										NO. 1-544									
NO. 1-545										NO. 1-546									
NO. 1-547										NO. 1-548									
NO. 1-549										NO. 1-550									
NO. 1-551										NO. 1-552									
NO. 1-553										NO. 1-554									
NO. 1-555										NO. 1-556									
NO. 1-557										NO. 1-558									
NO. 1-559										NO. 1-560									
NO. 1-561										NO. 1-562									
NO. 1-563										NO. 1-564									
NO. 1-565										NO. 1-566									
NO. 1-567										NO. 1-568									
NO. 1-569										NO. 1-570									
NO. 1-571										NO. 1-572									
NO. 1-573										NO. 1-574									
NO. 1-575										NO. 1-576									
NO. 1-577										NO. 1-578									
NO. 1-579										NO. 1-580									
NO. 1-581										NO. 1-582									
NO. 1-583										NO. 1-584									
NO. 1-585										NO. 1-586									
NO. 1-587										NO. 1-588									
NO. 1-589										NO. 1-590									
NO. 1-591										NO. 1-592									
NO. 1-593										NO. 1-594									
NO. 1-595										NO. 1-596									
NO. 1-597										NO. 1-598									
NO. 1-599										NO. 1-600									
NO. 1-601										NO. 1-602									
NO. 1-603										NO. 1-604									
NO. 1-605										NO. 1-606									
NO. 1-607										NO. 1-608									
NO. 1-609										NO. 1-610									
NO. 1-611										NO. 1-612									
NO. 1-613										NO. 1-614									
NO. 1-615										NO. 1-616									
NO. 1-617										NO. 1-618									
NO. 1-619										NO. 1-620									
NO. 1-621										NO. 1-622									
NO. 1-623										NO. 1-624									
NO. 1-625										NO. 1-626									
NO. 1-627										NO. 1-628									
NO. 1-629										NO. 1-630									
NO. 1-631										NO. 1-632									
NO. 1-633										NO. 1-634									
NO. 1-635										NO. 1-636									
NO. 1-637										NO. 1-638									
NO. 1-639										NO. 1-640									
NO. 1-641										NO. 1-642									
NO. 1-643										NO. 1-644									
NO. 1-645										NO. 1-646									
NO. 1-647										NO. 1-648									
NO. 1-649										NO. 1-650									
NO. 1-651										NO. 1-652									
NO. 1-653										NO. 1-654									
NO. 1-655										NO. 1-656									
NO. 1-657										NO. 1-658									
NO. 1-659										NO. 1-660									
NO. 1-661										NO. 1-662									
NO. 1-663										NO. 1-664									
NO. 1-665										NO. 1-666									
NO. 1-667										NO. 1-668									