

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-13029-RS  
ADDRESS: 819 WEST MAIN STREET

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 27, 1985*

REA13029:REA-709

8509100493 850827  
PDR WASTE  
WM-54  
PDR

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## 1.0 EXECUTIVE SUMMARY

### 1.1 Introduction

The location, DOE ID No. GJ-13029-RS, is a single-family residence located at 819 West Main Street, 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, 190 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$10,601. Remedial action on this property will take approximately 14 days to complete.

## 2.0 PROPERTY DESCRIPTION

### 2.1 General Description

Address: 819 West Main Street, Grand Junction, Colorado

Zoning: Residential (RSF-8)

Lot Size: Approximately 3,600 sf (0.08 acres)

Legal Description: West 60 feet of Lots 1 and 2, plus West 60 feet of the north 10 feet of Lot 3, Block 1, Grand River Subdivision, City of Grand Junction, County of Mesa, State of Colorado.

Point of Reference: This property is located approximately 2 mile(s) 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:	West Main Street
South:	Single-family residence
East:	Single-family residence
West:	Alley

### 2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-story residence
Size:	Approximately 1,021 sf
Construction Date:	1898
Construction:	Wood-frame
Foundation:	Wood (mud sill)
Footing Depth:	Approximately 6" to bottom of wood plate from grade
Basement:	None
Crawl Space:	None
Condition:	Good

Other Structures:

Type:	Shed
Size:	Approximately 102 sf
Construction:	Wood-frame
Foundation:	Mud sill
Condition:	Fair

General Remarks:

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

Historical Data:

This structure is over 50 years old. Therefore, it does meet the eligibility criteria for consideration of inclusion on the National Register of Historic Places.

Alterations to Structure: Addition to main structure on the south and east.

Architectural Significance: None known

Historical Significance: None known

### 3.0 RADIOLOGIC SURVEY

#### 3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-13029-RS on June 5, 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 under the city sidewalk along West Main Street.

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: 15 to 17 uR/h  
Highest Outside Gamma Reading (HOG): 138 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: 13 to 15 uR/h  
Highest Inside Gamma Reading (HIG): 27 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 Figure 3.2. Data from these investigations are included in Appendix Tables 3.1 and 3.2.

### 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 3.3 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: lawn  
Direction From Primary Structure: north  
Total Depth of Contamination: estimated at 78 inches  
Comments: The depth of contamination is based on data collected at DOE ID No. GJ-01207-RS.  
Approximate Square Footage: 464
- (Area B) Surface Material: concrete  
Direction From Primary Structure: north  
Total Depth of Contamination: estimated at 78 inches  
Other (height or thickness): concrete is 4 inches thick  
Comments: The depth of contamination is based on data collected at DOE ID No. GJ-01207-RS.  
Approximate Square Footage: 300
- (Area C) Surface Material: soil  
Direction From Primary Structure: north  
Other Directions: south of the city sidewalk  
Total Depth of Contamination: estimated at 78 inches  
Comments: The depth of contamination is based on data collected at DOE ID No. GJ-01207-RS. A chain link fence and shrubs are located in this contaminated area.  
Approximate Square Footage: 141



#### 4.0 RECOMMENDED REMEDIAL ACTION

##### 4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-13029-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 \$10,601.

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 3.2	Sample Locations
Figure 3.3	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-13029-RS

819 West Main Street

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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.		
3	158254	00	DS	1.5		*	West side of primary structure
		06	DS	1.4		*	
4	158269	00	DS	6.2		*	West side of primary structure Horizontal
		06	DS	2.9		*	
		06	DS	1.7		*	
		12	DS	2.3		*	
5	158283	00	DS	2.4		*	Edge of curb Road base between 12 and 15 inches
		06	DS	5.3		*	
		12	DS	10.4		*	
		18	DS	10.0		*	
		24	DS	6.6		*	
6	165270	00	DS	20.1		*	North side of primary structure Horizontal
		06	DS	12.9		*	
		06	DS	<1.0		*	
		12	DS	8.3		*	
		18	DS	3.3		*	
		24	DS	4.1		*	
7	168237	00	DS	1.2		*	Sewer line Auger refusal DC = 0 inches
		03	TC	3.1		*	
		06	TC	3.5		*	
		09	TC	3.7		*	
		12	TC	3.8		*	
		15	TC	3.9		*	
		18	TC	3.9		*	
		21	TC	3.9		*	
		24	TC	4.0		*	
		27	TC	3.9		*	
8	172283	00	DS	13.3		*	North of city sidewalk
		06	DS	7.0		*	
		12	DS	12.0		*	
		18	DS	5.0		*	
		24	DS	7.4		*	
9	173267	03	TC	4.9		*	North side of primary structure Auger refusal DC = 0 inches
		06	TC	5.1		*	
		09	TC	5.0		*	
		12	TC	4.9		*	
		15	TC	4.7		*	

## Radium Concentrations at Exterior Locations

DOE ID #GJ-13029-RS

819 West Main Street

Page 2 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
9	173267	18	TC	4.6		*	
		21	TC	4.5		*	
		24	TC	4.5		*	
		27	TC	4.4		*	
10	180282	03	TC	8.9		*	Auger refusal DC = >42 inches
		06	TC	10.9		*	
		09	TC	10.6		*	
		12	TC	10.3		*	
		15	TC	11.2		*	
		18	TC	13.2		*	
		21	TC	17.4		*	
		24	TC	23.4		*	
		27	TC	32.8		*	
		30	BH	49.3	91.3	*	
		33	TC	70.9		*	
		36	TC	86.8		*	
		39	TC	97.4		*	
		42	TC	98.0		*	
11	184266	00	DS	2.3		*	North of primary structure
		06	DS	2.1		*	
12	190277	00	DS	20.4		*	Sidewalk
		06	DS	28.9		*	Edge of sidewalk
		06	DS	63.3		*	Horizontal
		12	DS	11.5		*	Edge of sidewalk
		18	DS	9.3		*	Top of storm drain
13	192260	03	TC	2.8		*	Water line
		06	TC	2.9		*	Auger refusal
		09	TC	3.1		*	DC = 0 inches
		12	TC	3.2		*	
		15	TC	3.3		*	
		18	TC	3.4		*	
		21	TC	3.4		*	
		24	TC	3.4		*	
		27	TC	3.3		*	
		30	TC	3.4		*	
14	193258	00	DS	1.2		*	Gas line
		18	DS	<1.0		*	

## Radium Concentrations at Exterior Locations

DOE ID #GJ-13029-RS

819 West Main Street

Page 3 of 4

Loc #	Grid Location	Depth (in.)	Meas. Type	In Situ Ra-226 (pCi/g)		Chem Ra-226 (pCi/g)	Comments
				Tot. Ct	Spectr.		
15	193268	00	DS	4.9		*	South of city
		06	DS	2.9		*	sidewalk
		12	DS	2.8		*	DC = >24 inches
		18	DS	3.6		*	
		03	TC	4.9		*	
		06	TC	5.2		*	
		09	TC	5.3		*	
		12	TC	5.3		*	
		15	TC	5.5		*	
		18	TC	5.5		*	
		21	TC	5.5		*	
		24	TC	5.4		*	
16	200230	00	DS	1.0		*	Background
		03	TC	2.9		*	DC = 0 inches
		06	TC	3.4		*	
		09	TC	3.5		*	
		12	TC	3.7		*	
		15	TC	3.8		*	
		18	TC	3.8		*	
		21	TC	3.9		*	
		24	TC	4.0		*	
		27	TC	4.0		*	
17	200283	00	DS	4.2		*	North of city
		06	DS	7.9		*	sidewalk
		12	DS	14.5		*	
		18	DS	38.4		*	
		24	DS	29.7		*	
18	206269	03	TC	6.2		*	North fence line
		06	TC	6.9		*	Auger refusal
		09	TC	6.9		*	DC = >30 inches
		12	BH	6.6	4.4	*	
		15	TC	6.6		*	
		18	TC	6.5		*	
		21	TC	6.4		*	
		24	TC	6.2		*	
		27	TC	6.3		*	
		30	TC	6.2		*	

## Radium Concentrations at Exterior Locations

DOE ID #GJ-13029-RS

819 West Main Street

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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	212284	03	TC	5.9		*	Auger refusal DC = >36 inches
		06	TC	6.9		*	
		09	TC	7.3		*	
		12	TC	8.2		*	
		15	TC	9.3		*	
		18	TC	10.5		*	
		21	TC	11.9		*	
		24	TC	13.4		*	
		27	TC	14.4		*	
		30	TC	15.3		*	
		33	TC	15.6		*	
		36	TC	14.9		*	
20	217284	00	DS	3.5		*	Auger refusal DC = >36 inches
		03	TC	4.7		*	
		06	TC	5.7		*	
		09	TC	6.7		*	
		12	TC	7.6		*	
		15	TC	8.6		*	
		18	TC	9.6		*	
		21	TC	11.0		*	
		24	TC	12.4		*	
		27	TC	13.4		*	
		30	TC	13.8		*	
		33	TC	13.9		*	
21	218266	00	DS	1.7		*	Northeast corner of property
		06	DS	2.2		*	

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 = 06-06-85  
Team Leader = PT

## Radium Concentrations at Interior Locations

DOE ID #GJ-13029-RS

819 West Main Street

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	5.4		*	
2		00	DS	<1.0		*	

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 = 06-06-85  
Team Leader = PT



Table 3.3

## Summary of Interior Gamma Exposure Rates

DOE ID No. GJ-13029-RS 819 West Main Street

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)
ROOM A	08	14-15	14	08	14-15	15
ROOM B	10	15-27	18	10	15-25	18
ROOM C	05	13-14	13	05	12-14	13
ROOM D	06	14-14	14	06	14-15	14
ROOM E	09	15-19	17	09	15-18	16
ROOM F	18	12-15	14	18	13-15	14
GARAGE	03	14-15	14	03	14-14	14

Table 4.1  
Area and Volume Calculations  
DOE ID No. GJ-13029-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				
B	60 x 5 =	300	x 0.3 =	90	
	Volume of Concrete = 90 = 90/27 = 3				
	Contaminated Fill				
A	33 x 8 =	264			
	25 x 8 =	200			
		464	x 6.5 =	3,016	
B	60 x 5 =	300	x 6.2 =	1,860	
C	47 x 3 =	141	x 6.5 =	917	
	Storm Sewer (48")				
	Minus (3.14 x 22 x 60) = (754)				
	Volume of Fill = 5,039 = 5,039/27 = 187				
	TOTAL VOLUME - EXTERIOR = 190				

See Appendix Figure 3.3 For Areas

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Table 4.2  
Estimated Cost of Decontamination and Restoration  
DOE ID No. GJ-13029-RS

Page 1 of 1

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EXTERIOR

Remove/replace concrete sidewalk 300 sf @ \$3/sf	\$ 900
Remove identified residual radioactive material 150 cy @ \$14.50/cy (machine-open)	2,175
37 cy @ \$44/cy (manual-open)	1,628
Replace areas with compacted roadbase 165 cy @ \$11.50/cy	1,898
Replace areas with topsoil 22 cy @ \$9.50/cy	209
Support concrete storm sewer 60 lf @ \$5/lf	300
Provide cribbing at sides of excavation 20 lf @ \$20/lf	400
	<hr/>
TOTAL EXTERIOR	\$ 7,510
TOTAL INTERIOR	0
ACCESS CONTROL	200
	<hr/>
SUBTOTAL	\$ 7,710
CONTINGENCY @ 10%	771
	<hr/>
SUBTOTAL	\$ 8,481
CONTRACTOR OVERHEAD & PROFIT @ 25%	2,120
	<hr/>
GRAND TOTAL	\$ 10,601

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FAV082085  
REAL3029/REA-709/AP

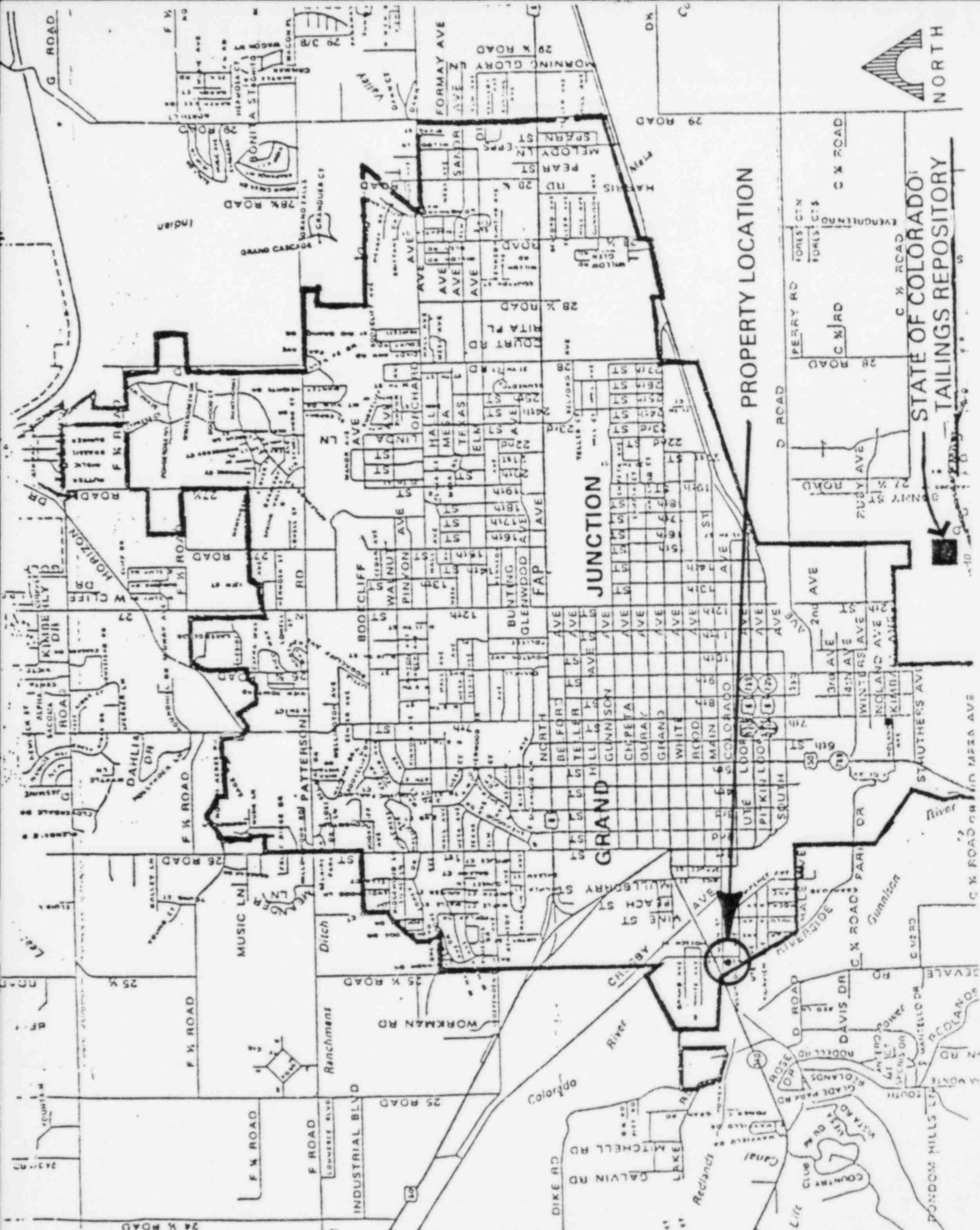


FIGURE 2.1  
VICINITY MAP

[illegible]

WEST 60 FEET OF LOTS 1  
AND 2, AND THE WEST 60  
FEET OF THE NORTH 10 FEET  
OF LOT 3, ALL IN BLOCK 1,  
GRAND RIVER SUBDIVISION,  
WITHIN GRAND JUNCTION  
CITY LIMITS, MESA COUNTY

ALLEY



A horizontal number line with tick marks at 0, 10, 20, and 30. The word "FEET" is written below the line.

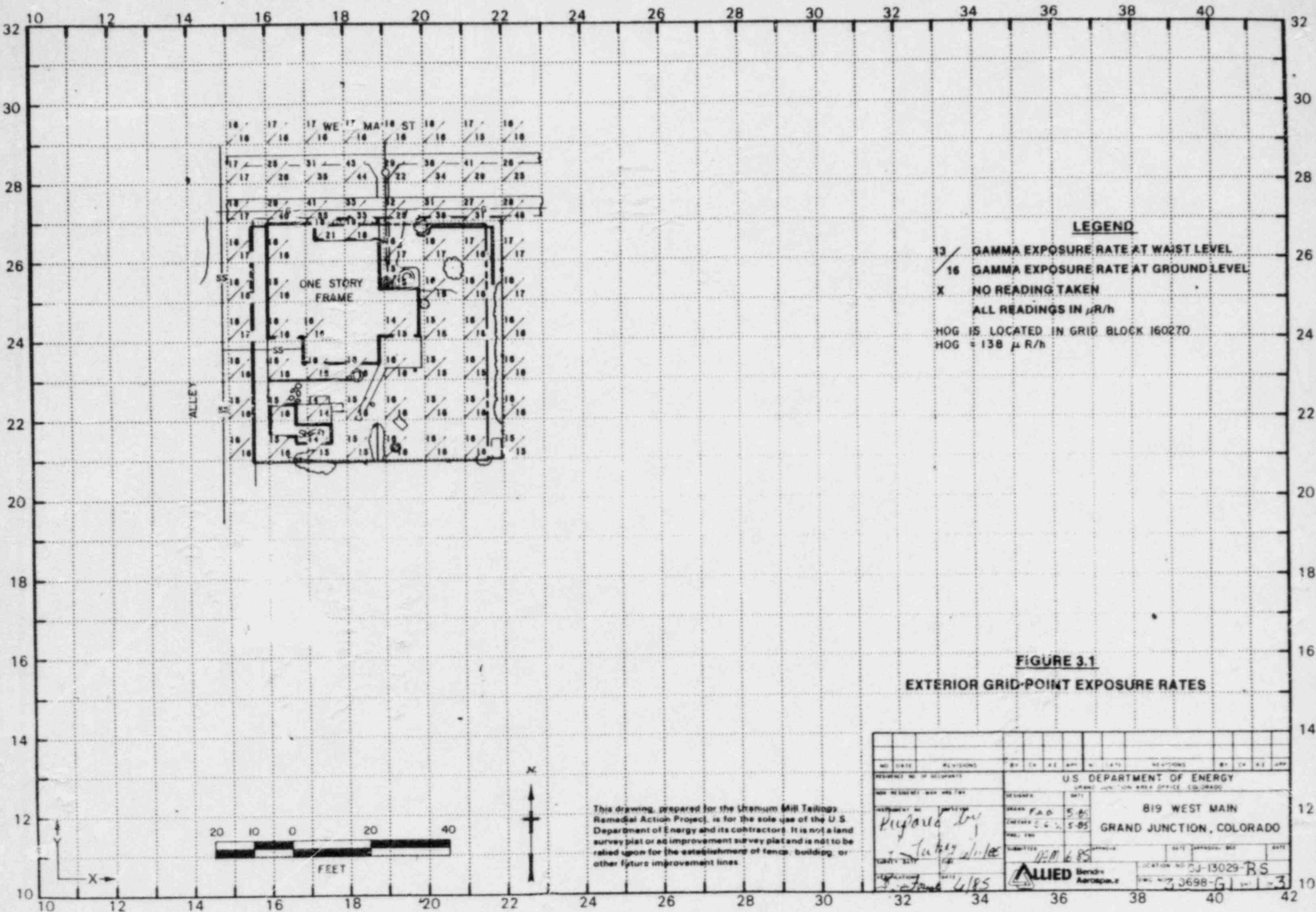
FIGURE 2.2 SITE PLAN

FIGURE 2.2 SITE PLAN

U.S. DEPARTMENT OF ENERGY		DOE ID NO
GRAND JUNCTION PROJECT OFFICE, COLORADO		GJ13029RS
ADDRESS	819 WEST MAIN GRAND JUNCTION, CO	ALLIED Service Grand Junction Engineering Corporation Grand Junction, Colorado
SURV	ALA-52885 DRAFT AGJ-529-85	CR 25-1265
DRAWING NO	3C-698-F1	SHEET 1 OF 1

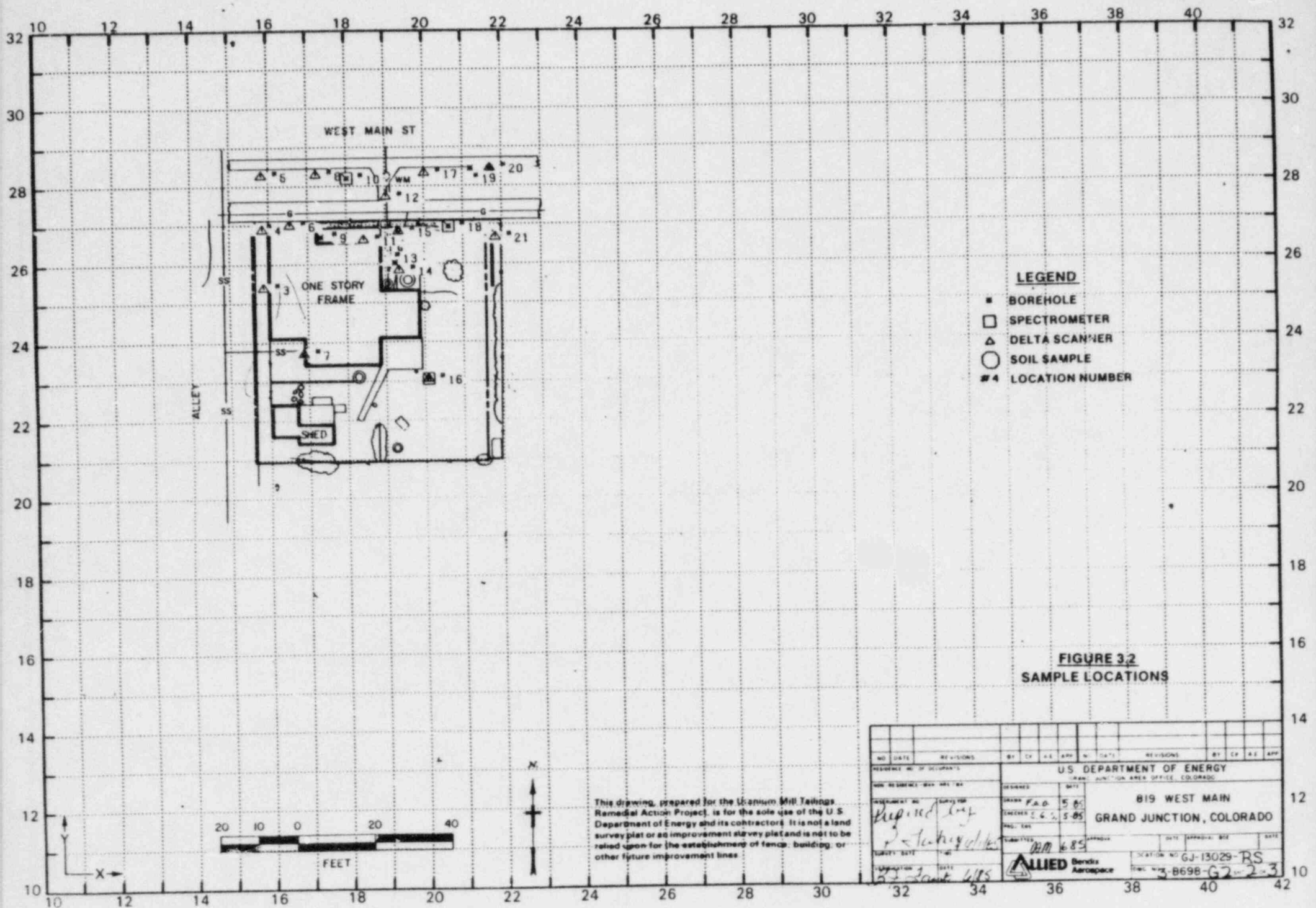
This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U. S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement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





**FIGURE 3.1**  
**EXTERIOR GRID-POINT EXPOSURE RATES**

[illegible]



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.





3/85

DOE ID NO. GJ-13029-RS Date June 11, 1985

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

Official Survey Report

Property Address 819 West Main Street  
Property Owner O.R & R.E. Mercer  
Address of Owner (if different from above) 519 28 1/4 Road  
Report Prepared By Penny Tuhey

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

☐ No evidence of residual radioactive material on surveyed property.

☒ Residual radioactive materials found at the following locations:

☒ In open areas. Under city sidewalk

☒ Under or around exterior improvements.

☐ Under or around a typically nonoccupied structure.

☒ Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

☐ 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.

☒ 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/CDR

J. Themelis, Mgr. UMTRA Proj. Off.

HIC = 27 uR/h  
EOG = 138 uR/h

MEMORANDUM

ALLIED Bendix  
Aerospace

Bendix Field Engineering Corporation  
Grand Junction Operations  
Grand Junction, Colorado

Date: June 5, 1985

To: Files

From: Penny Tuhey

Subject: Team Leader Notes - GJ-13029-RS

Address: 819 West Main Street

Owner: O.R. and R.E. Mercer

Team Members

P. Tuhey (Team Leader)	G. Meeker
D. Dow	L. Kula
P.J. Bonner	K. Roemer
A. Raabe	S. Southern
M. Johnson	

Instruments

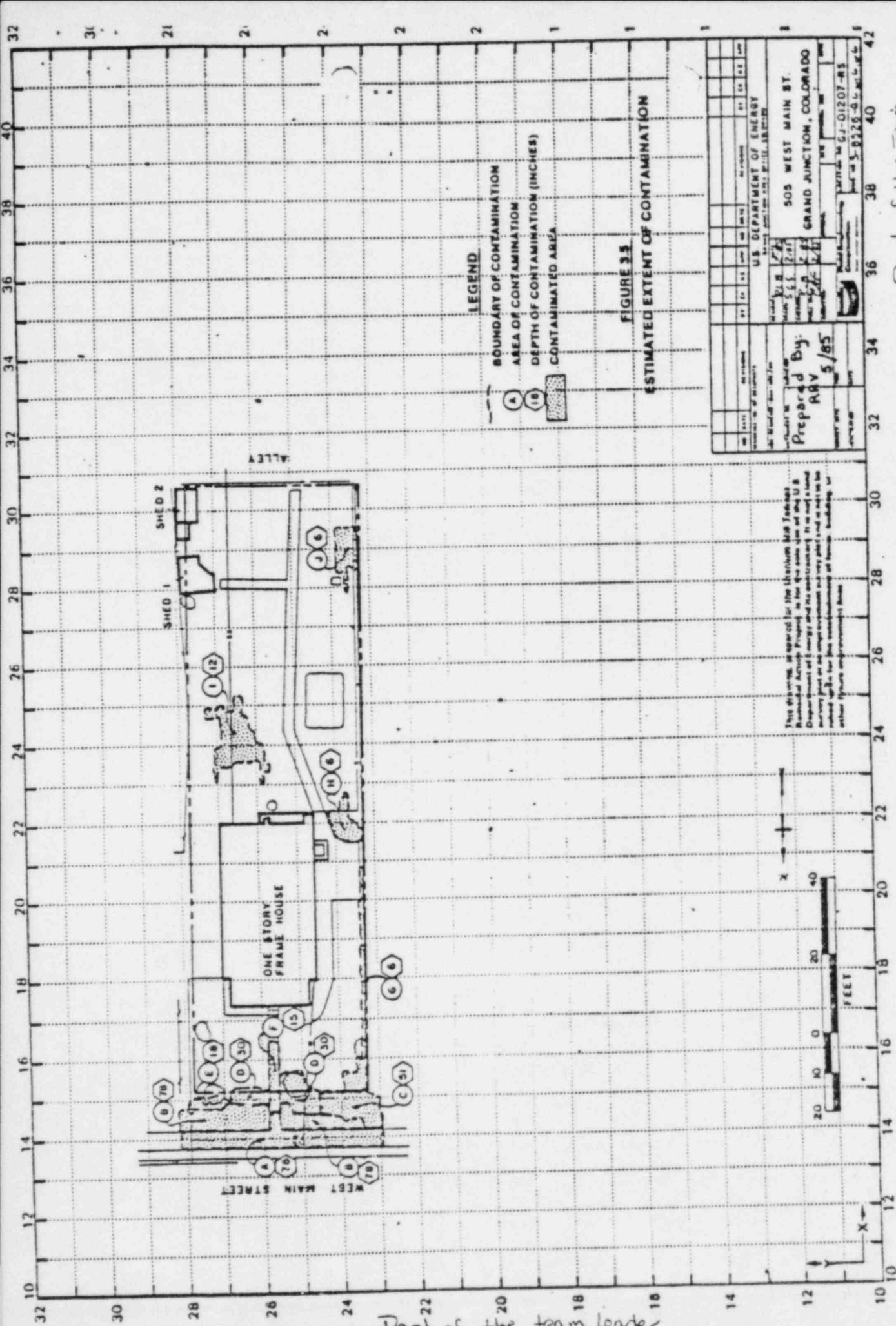
C-1042, C-1206, C-3510, C-1128, C-1247, C-1185, C-3938, C-3935,  
C-1062, C-3959, C-2474, C-3361

There is a storm drain that runs under and along the City sidewalk north of the primary structure, which is approximately 4-feet wide and 5-feet deep. Due to the storm drain being embedded with river rock, I (P. Tuhey) was unable to obtain data deeper than 42 inches.

Tailings were visible all along the city sidewalk area.

All utility lines were investigated for possible tailings.

All team members were frisked before leaving the property.

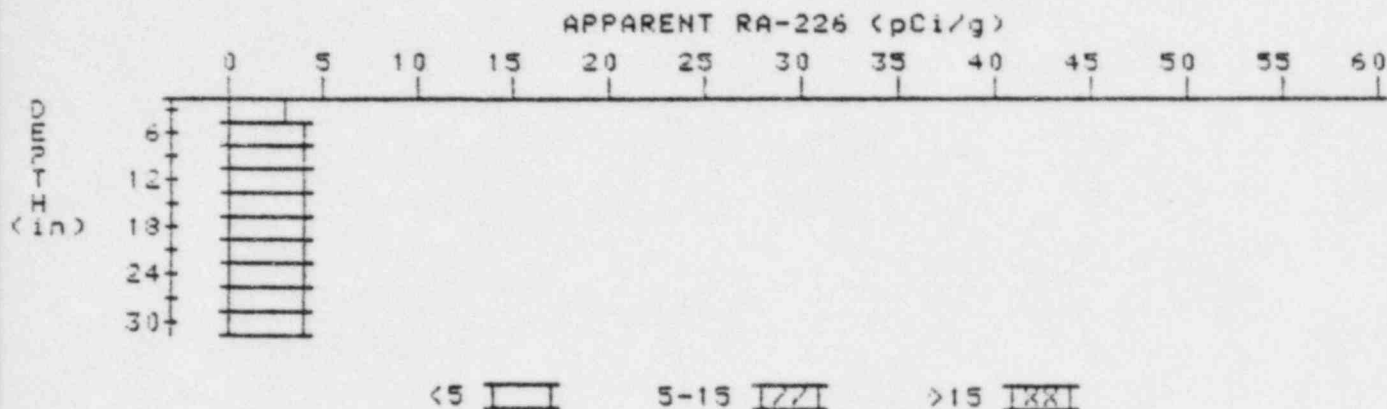


Part of the team  
Leader notes

Part of the team leader  
Notes

# APPARENT RADIUM-226 CONCENTRATION 7 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-13029-RS  
HOLE NUMBER: 7  
LOCATION: 168237



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.5	3.9
9	3.7	3.9
12	3.8	3.8
15	3.9	4.1
18	3.9	3.9
21	3.9	3.7
24	4.0	4.4
27	3.9	3.7
30	3.9	3.9



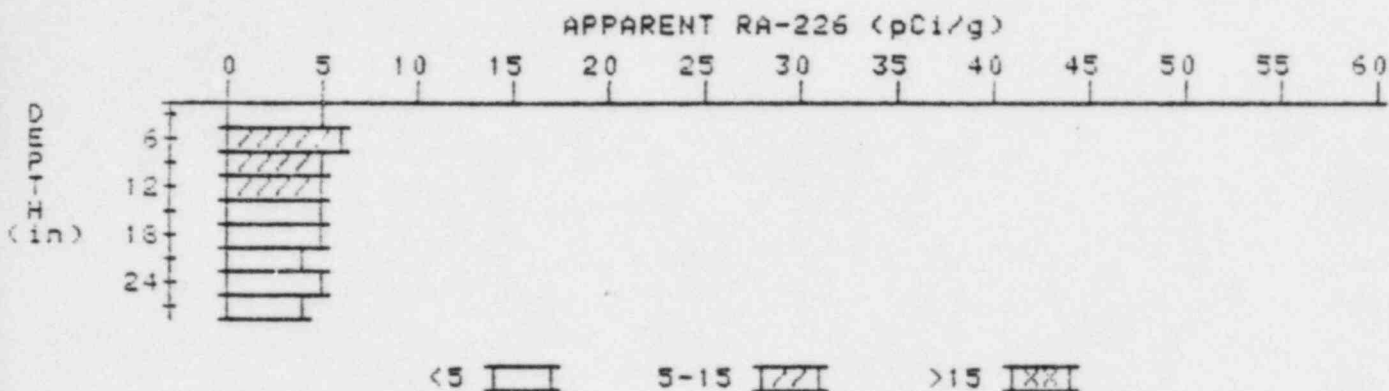
# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

9

PROPERTY NUMBER: GJ-13029-RS

HOLE NUMBER: 9

LOCATION: 173267



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.9	4.9
6	5.1	5.6
9	5.0	5.0
12	4.9	5.1
15	4.7	4.5
18	4.6	4.6
21	4.5	4.3
24	4.5	4.7
27	4.4	4.4

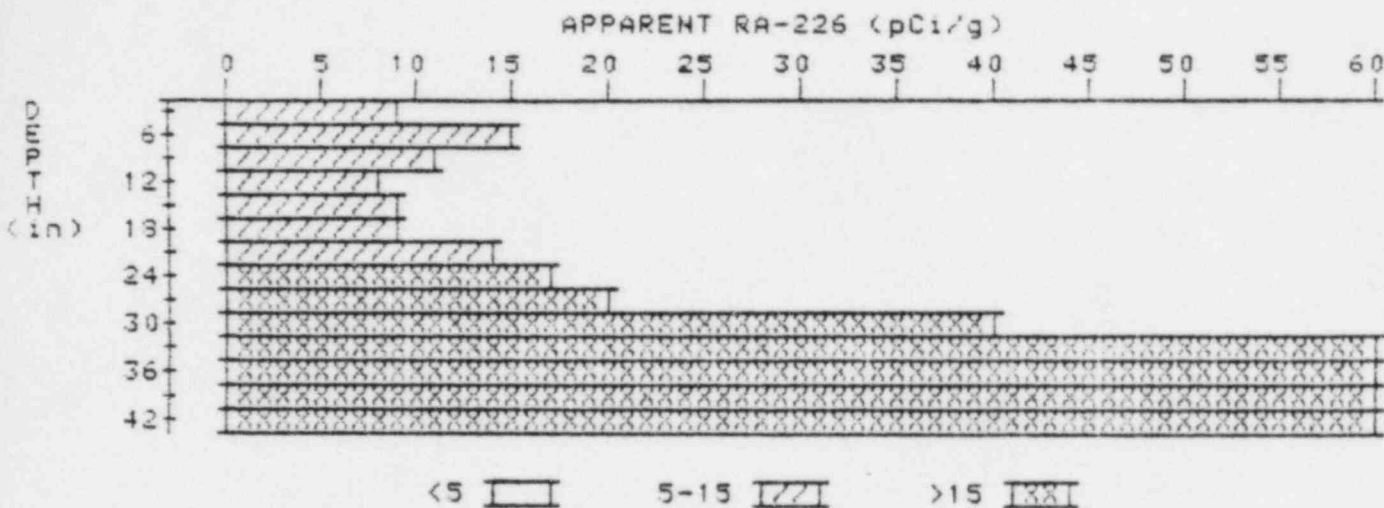
# APPARENT RADIUM-226 CONCENTRATION 10

## DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-13029-RS

HOLE NUMBER: 10

LOCATION: 130232



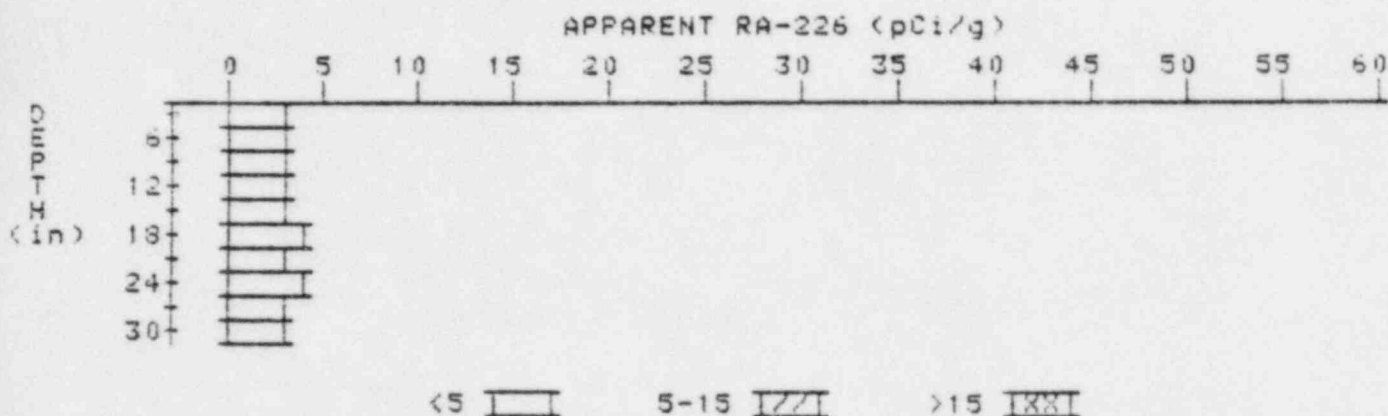
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.9	8.9
6	10.9	15.0
9	10.6	10.6
12	10.3	8.2
15	11.2	9.2
18	13.2	9.3
21	17.4	14.2
24	23.4	17.4
27	32.8	20.2
30	49.3	40.2
33	70.9	81.0
36	86.8	96.2
39	97.4	115.2
42	98.0	98.0



# APPARENT RADIUM-226 CONCENTRATION 13

## DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-13029-R3  
 HOLE NUMBER: 13  
 LOCATION: 192260



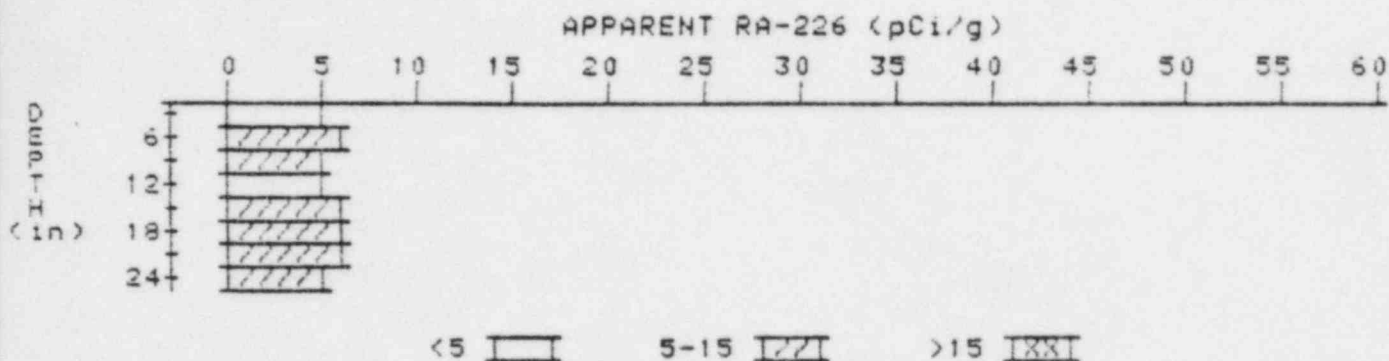
Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.8	2.8
6	2.9	2.7
9	3.1	3.3
12	3.2	3.2
15	3.3	3.3
18	3.4	3.6
21	3.4	3.4
24	3.4	3.6
27	3.3	2.9
30	3.4	3.4

# APPARENT RADIUM-226 CONCENTRATION 15 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-13029-RS

HOLE NUMBER: 15

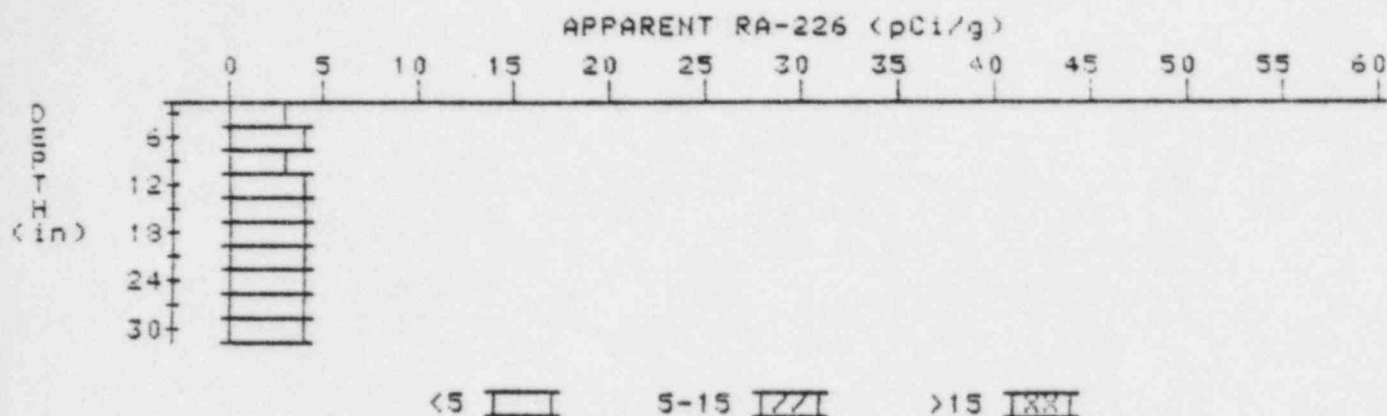
LOCATION: 193268



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.9	4.9
6	5.2	5.6
9	5.3	5.5
12	5.3	4.9
15	5.5	5.9
18	5.5	5.5
21	5.5	5.7
24	3.4	5.4

# APPARENT RADIUM-226 CONCENTRATION 16 DECONVOLUTION GRAPH

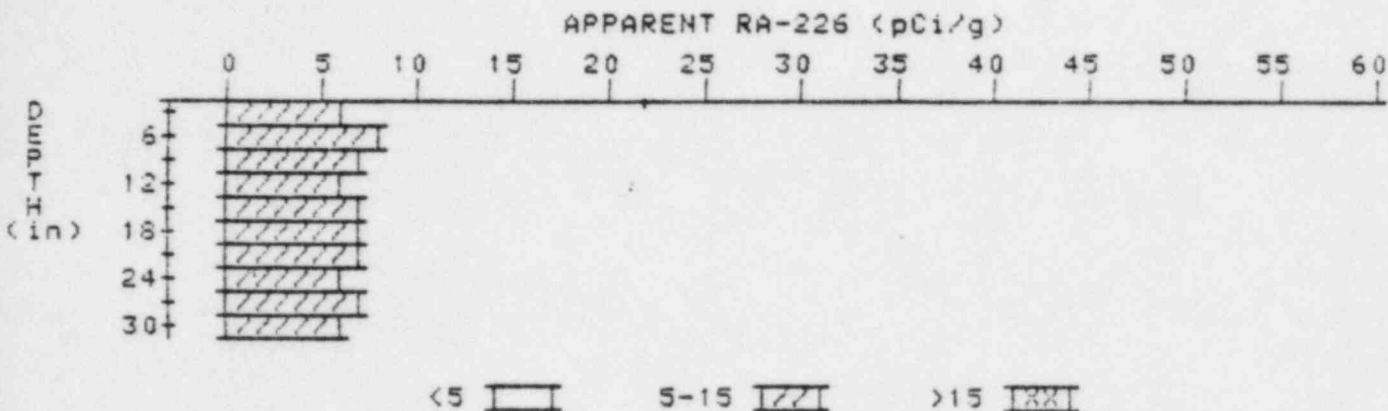
PROPERTY NUMBER: GJ-13029-RS  
HOLE NUMBER: 16  
LOCATION: 200230



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	2.9	2.9
6	3.4	4.1
9	3.5	3.3
12	3.7	3.9
15	3.8	4.0
18	3.8	3.6
21	3.9	3.9
24	4.0	4.2
27	4.0	4.0
30	4.0	4.0

# APPARENT RADIUM-226 CONCENTRATION 18 DECONVOLUTION GRAPH

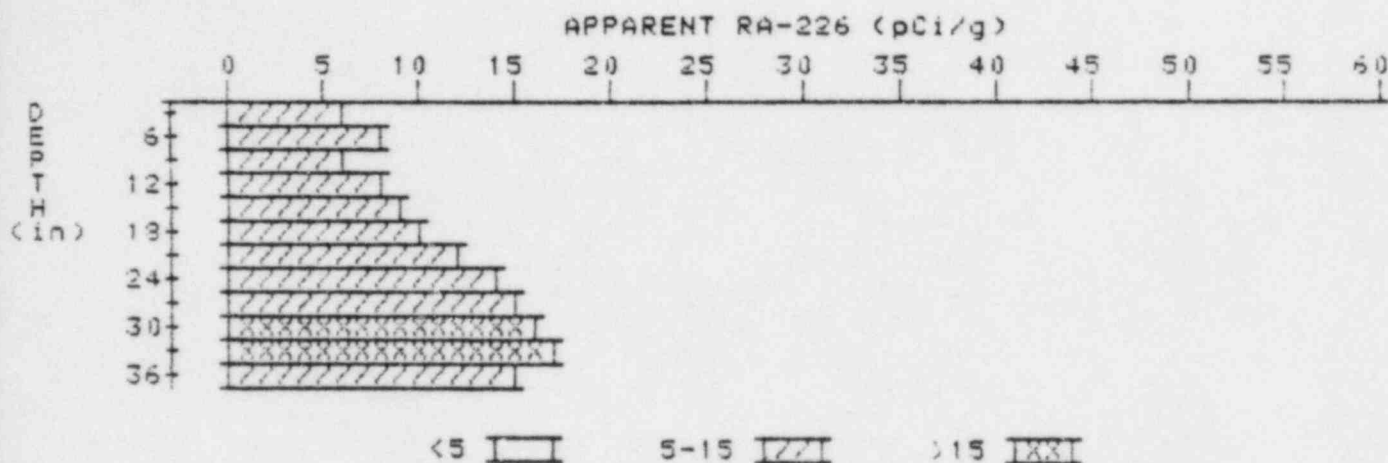
PROPERTY NUMBER: GJ-13029-RS  
HOLE NUMBER: 18  
LOCATION: 206269



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	6.2	6.2
6	6.9	8.1
9	6.9	7.4
12	6.6	6.1
15	6.6	6.8
18	6.5	6.5
21	6.4	6.6
24	6.2	5.7
27	6.3	6.7
30	6.2	6.2

# APPARENT RADIUM-226 CONCENTRATION 19 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-13029-RS  
HOLE NUMBER: 19  
LOCATION: 212284



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	5.9	5.9
6	6.9	6.0
9	7.3	6.4
12	8.2	7.8
15	9.3	9.1
18	10.5	10.1
21	11.9	11.7
24	13.4	14.3
27	14.4	14.6
30	15.3	16.4
33	15.6	17.4
36	14.9	14.9

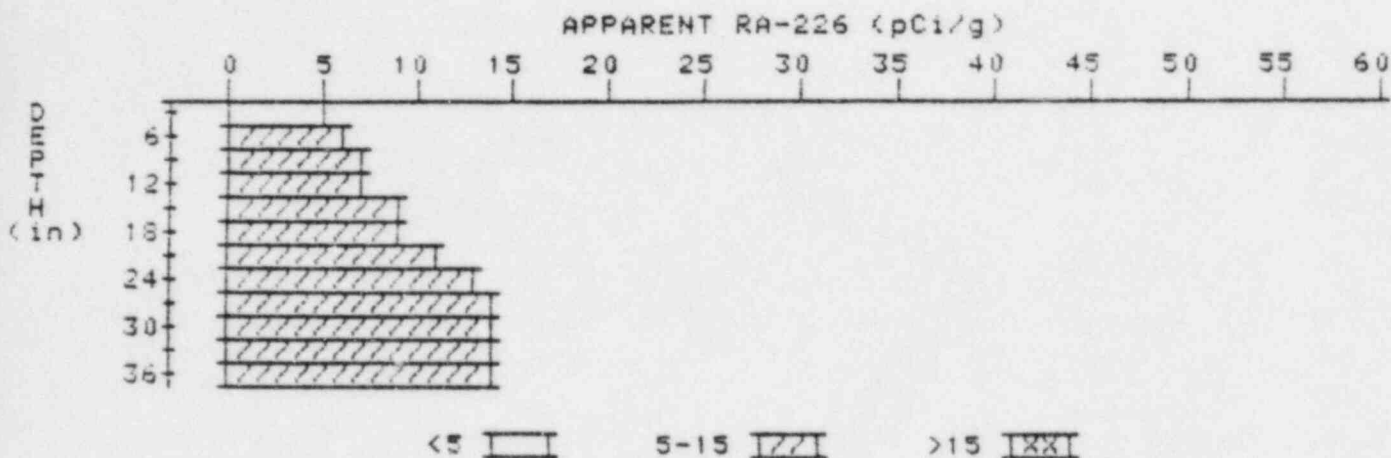
# APPARENT RADIUM-226 CONCENTRATION 20

## DECONVOLUTION GRAPH

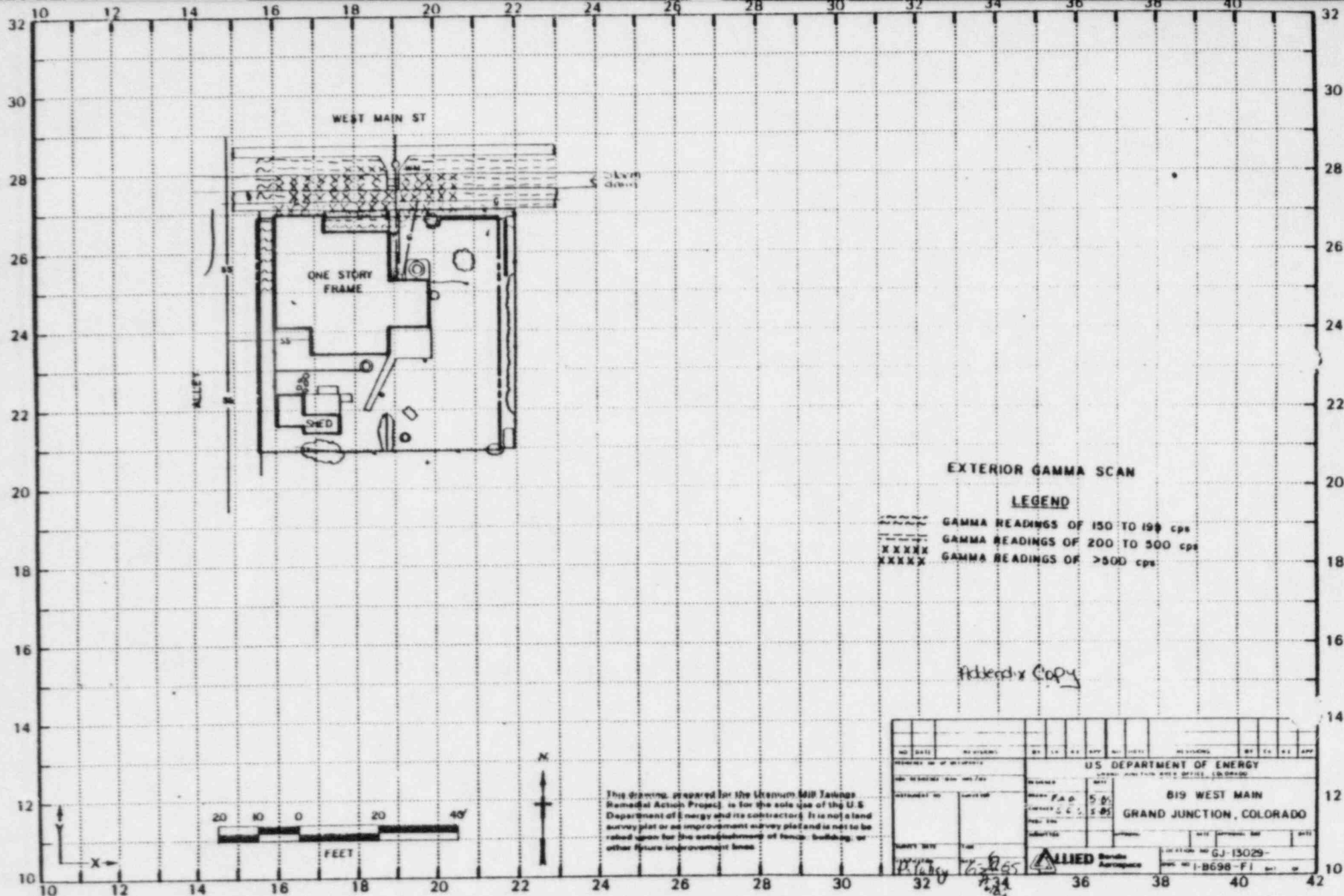
PROPERTY NUMBER: GJ-13029-RS

HOLE NUMBER: 20

LOCATION: 217284



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	4.7	4.7
6	5.7	5.7
9	6.7	6.9
12	7.6	7.4
15	8.6	8.6
18	9.6	8.9
21	11.0	11.0
24	12.4	13.1
27	13.4	14.5
30	13.8	14.3
33	13.9	14.4
36	13.7	13.7



EXTERIOR GAMMA SCAN

### LEGEND

XXXXX GAMMA READINGS OF 150 TO 199 cps  
XXXXX GAMMA READINGS OF 200 TO 300 cps  
XXXXX GAMMA READINGS OF >300 cps

Appendix C of 4

[illegible]