

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-10384-RS  
ADDRESS: 261 CHIPETA 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

*M. Tucker*  
M. TUCKER

DOE PROJECT ENGINEER

DATE

*August 5, 1985*

REA10384:REA-614

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## **1.0 EXECUTIVE SUMMARY**

### **1.1 Introduction**

The location, DOE ID No. GJ-10384-RS, is a single-family residence located at 261 Chipeta 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, 29 cu. yd.; interior, 0 cu. yd.

Estimated cost to perform remedial action, including dislocation when applicable, is \$3,161. Remedial action on this property will take approximately 8 days to complete.

## 2.0 PROPERTY DESCRIPTION

### 2.1 General Description

Address: 261 Chipeta Avenue, Grand Junction, Colorado

Zoning: Residential (RMF-64)

Lot Size: Approximately 6,250 sf (0.14 acres)

Legal Description: Lots 15 and 16, Block 57, 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:	None

Bordering Properties:

North:	Chipeta Avenue
South:	Alley
East:	North 3rd Street
West:	Single-family residence

### 2.2 Existing Facilities and Structures

Primary Structure:

Type:	Single-story residence
Size:	Approximately 1,621 sf
Construction Date:	1885
Construction:	Wood-frame
Foundation:	Masonry block on spread footing
Footing Depth:	Not determined
Basement:	Yes (partial)
Crawl Space:	Yes (partial)
Condition:	Good

Other Structures:

Type:	Garage
Size:	Approximately 230 sf
Construction:	Wood-frame
Foundation:	None (mudsill)
Condition:	Good

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: Moderate additions to the structure and foundation.

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-10384-RS on June 26, 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 involving various portions of the city sidewalk.

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: 14 to 17 uR/h  
Highest Outside Gamma Reading (HOG): 47 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: 15 to 18 uR/h  
Highest Inside Gamma Reading (HIG): 18 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. Data from these investigations are included in Appendix Table 3.1. Exterior locations are shown in Appendix Figure 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: Concrete  
 Direction From Primary Structure: North  
 Other Directions: On city easement  
 Total Depth of Contamination: 12 inches  
 Other (height or thickness): 4-inch-thick concrete  
 Comments: North city sidewalk  
 Approximate Square Footage: 320
  
- (Area B) Surface Material: Soil  
 Direction From Primary Structure: North  
 Other Directions: Adjacent to Area A  
 Total Depth of Contamination: 12 inches  
 Comments: A small portion of this area (12 sf) is beneath  
 4-inch-thick concrete.  
 Approximate Square Footage: 220
  
- (Area C) Surface Material: Concrete  
 Direction From Primary Structure: Southeast  
 Other Directions: On city easement  
 Total Depth of Contamination: 9 inches  
 Other (height or thickness): 4-inch-thick concrete  
 Comments: East city sidewalk  
 Approximate Square Footage: 90
  
- (Area D) Surface Material: Soil  
 Direction From Primary Structure: Southeast  
 Other Directions: Adjacent to east city sidewalk  
 Total Depth of Contamination: 9 inches  
 Approximate Square Footage: 68
  
- (Area E) Surface Material: Concrete  
 Direction From Primary Structure: East  
 Other Directions: On city easement  
 Total Depth of Contamination: 12 inches  
 Other (height or thickness): 4-inch-thick concrete  
 Comments: East of city sidewalk  
 Approximate Square Footage: 42

(Area F) Surface Material: Soil  
Direction From Primary Structure: East  
Other Directions: North of Area E  
Total Depth of Contamination: 18 inches  
Approximate Square Footage: 28

(Area G) Surface Material: Soil  
Direction From Primary Structure: East  
Other Directions: South of Area E  
Total Depth of Contamination: 12 inches  
Approximate Square Footage: 28



#### 4.0 RECOMMENDED REMEDIAL ACTION

##### 4.1 Decontamination and Restoration

The recommended remedial action for this property, DOE ID No. GJ-10384-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 \$3,161.

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	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-10384-RS

261 Chipeta Avenue

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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.		
2	150280	00	DS	1.0		*	North city sidewalk
3	157275	00	DS	6.0		*	North city sidewalk
		03	TC	12.0		*	
		06	TC	11.9		*	DC = 12 inches
		09	TC	8.6		*	Based on the
		12	TC	6.8		*	deconvolution graph
		15	TC	5.7		*	
		18	TC	5.1		*	
		21	TC	4.8		*	
		24	TC	4.6		*	
		27	TC	4.4		*	
		30	TC	4.3		*	
		33	TC	4.2		*	
		36	TC	4.1		*	
		39	TC	4.0		*	
		42	TC	4.0		*	
		45	TC	4.0		*	
		48	TC	4.0		*	
		51	TC	4.0		*	
		54	TC	3.9		*	
		57	TC	3.8		*	
4	158286	00	DS	1.2		*	North city sidewalk
5	159224	03	TC	20.6		*	North city sidewalk
		06	TC	33.1		*	of house
		09	TC	27.9		*	
		12	TC	17.8		*	DC = 12 inches
		15	TC	11.7		*	Based on the
		18	TC	8.4		*	deconvolution graph
		21	TC	6.7		*	
		24	TC	5.8		*	
		27	TC	5.3		*	
		30	TC	5.0		*	
		33	TC	4.7		*	
		36	TC	4.5		*	
		39	TC	4.4		*	
		42	TC	4.3		*	
		45	TC	4.2		*	
		48	TC	4.2		*	
		51	TC	4.2		*	
		54	TC	4.1		*	
		57	TC	4.1		*	

## Radium Concentrations at Exterior Locations

DOE ID #GJ-10384-RS

261 Chipeta Avenue

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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.		
5	159224	60	TC	4.0		*	
6	161255	00	DS	16.2		*	Adjacent to north city sidewalk
		03	TC	10.5		*	
		06	TC	11.8		*	
		09	TC	10.0		*	
		12	TC	7.6		*	DC = 12 inches Based on the deconvolution graph
		15	TC	6.1		*	
		18	TC	5.2		*	
		21	TC	4.8		*	
		24	TC	4.5		*	
		27	TC	4.4		*	
		30	TC	4.2		*	
		33	TC	4.2		*	
		36	TC	4.2		*	
		39	TC	4.1		*	
		42	TC	4.1		*	
		45	TC	4.0		*	
		48	TC	4.0		*	
		51	TC	3.9		*	
		54	TC	4.0		*	
		57	TC	3.9		*	
7	165279	00	DS	12.2		*	North city sidewalk
8	180280	00	DS	1.2		*	East city sidewalk
9	190231	00	DS	1.7		*	Background Foundation at northwest corner of primary structure
		03	TC	3.2		*	
		06	TC	3.3		*	
		09	TC	3.6		*	
		12	TC	3.8		*	DC = 0 inches
		15	TC	3.9		*	
		18	TC	3.9		*	
		21	TC	4.1		*	
		24	TC	4.0		*	
		27	TC	4.1		*	
		30	TC	4.1		*	
		33	TC	4.0		*	
		36	TC	4.0		*	
		39	TC	3.9		*	
		42	TC	3.9		*	
		45	TC	3.9		*	
		48	TC	3.9		*	

## Radium Concentrations at Exterior Locations

DOE ID #GJ-10384-RS

261 Chipeta Avenue

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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.		
9	190231	51	TC	3.9		*	
		54	TC	3.9		*	
		57	TC	3.9		*	
		60	TC	3.9		*	
10	192283	00	DS	6.6		*	Adjacent to east sidewalk
		06	DS	11.8		*	
		12	DS	4.3		*	
		18	DS	2.5		*	
11	194273	00	DS	1.0		*	East sidewalk
12	195293	00	DS	5.8		*	Adjacent to east sidewalk
		06	DS	2.7		*	
		12	DS	1.7		*	
13	195294	00	DS	5.7		*	East sidewalk
14	210264	00	DS	1.2		*	East foundation DC = 0 inches
		03	TC	3.1		*	
		06	TC	3.3		*	
		09	TC	3.5		*	
		12	TC	3.5		*	
		15	TC	3.6		*	
		18	TC	3.7		*	
		21	TC	3.7		*	
		24	TC	3.7		*	
		27	TC	3.8		*	
		30	TC	3.8		*	
		33	TC	4.0		*	
		36	TC	3.9		*	
		39	TC	3.9		*	
		42	TC	3.7		*	
		45	TC	3.7		*	
		48	TC	3.7		*	
		51	TC	3.7		*	
		54	TC	3.7		*	
		57	TC	3.7		*	
		60	TC	3.7		*	
15	246241	00	DS	1.1		*	Gas line
		20	DS	1.6		*	

## Radium Concentrations at Exterior Locations

DOE ID #GJ-10384-RS

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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	270280	00	DS	<1.0		*	East city sidewalk
17	283279	03	TC	16.4		*	East city sidewalk  DC = 12 inches Based on the deconvolution graph
		06	TC	18.3		*	
		09	TC	11.8		*	
		12	TC	8.0		*	
		15	TC	5.9		*	
		18	TC	5.0		*	
		21	TC	4.5		*	
		24	TC	4.2		*	
		27	TC	4.1		*	
		30	TC	4.0		*	
		33	TC	3.8		*	
		36	TC	3.8		*	
		39	TC	3.8		*	
		42	TC	3.8		*	
18	285282	00	DS	30.0		*	Adjacent to east sidewalk  DC = 9 inches Based on the deconvolution graph
		03	TC	8.6		*	
		06	TC	8.1		*	
		09	TC	6.6		*	
		12	TC	5.3		*	
		15	TC	4.6		*	
		18	TC	4.2		*	
		21	TC	4.1		*	
		24	TC	3.9		*	
		27	TC	3.9		*	
		30	TC	4.0		*	
		33	TC	3.9		*	
		36	TC	3.8		*	
		39	TC	3.8		*	

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 = 06-26-85  
Team Leader = TLC

## Radium Concentrations at Interior Locations

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In Situ Ra-226							
Loc	Grid	Depth	Meas.	(pCi/g)		Chem Ra-226	Comments
#	Location	(in.)	Type	Tot. Ct	Spectr.	(pCi/g)	
-----	-----	-----	-----	-----	-----	-----	
1		00	DS	1.7		*	On basement floor
-----							

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 = 06-26-85  
Team Leader = TLC



Table 3.3

## Summary of Interior Gamma Exposure Rates

DOE ID No. GJ-10384-RS

261 Chipeta Avenue

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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)
Basement	*	*	*	*	15-18	*
Garage	*	*	*	*	14-16	*

\* A walking gamma scan was performed to confirm the absence of interior contamination at this location.

Table 4.1  
Area and Volume Calculations  
DOE ID No. GJ-10384-RS

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<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
EXTERIOR					
Concrete					
A	5 x 58 =	290			
	6 x 5 =	30			
		<hr/>			
		320	x 0.3 =	96	
B	3 x 4 =	12	x 0.3 =	4	
C	18 x 5 =	90	x 0.3 =	27	
E	3 x 14 =	42	x 0.3 =	13	
				<hr/>	
	Volume of Concrete			= 140	= 140/27 = 5
Contaminated Fill					
A	5 x 58 =	290			
	6 x 5 =	30			
		<hr/>			
		320	x 0.7 =	224	
B	2 x 54 =	108	x 1.0 =	108	
	2 x 54 =	100	x 1.0 =	100	
	3 x 4 =	12	x 0.7 =	8 (under concrete)	
		<hr/>			
		220			
C	18 x 5 =	90	x 0.5 =	45	
D	17 x 2 =	34			
	17 x 2 =	34			
		<hr/>			
		68	x 0.8 =	54	

Table 4.1  
Area and Volume Calculations  
DOE ID No. GJ-10384-RS

Page 2 of 2

<u>AREA</u>	<u>CALCULATIONS(ft)</u>	<u>SF</u>	<u>DEPTH(ft)</u>	<u>CF</u>	<u>CUBIC YARDS</u>
E	3 x 14 =	42	x 0.7 =	29	
F	2 x 14 =	28	x 1.5 =	42	
G	2 x 14 =	28	x 1.0 =	28	
				638	
Total Volume of Fill				=	638/27 = 24
					29
TOTAL VOLUME - EXTERIOR					= 29

See Appendix Figure 3.3 For Areas

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Table 4.2  
Estimated Cost of Decontamination and Restoration  
DOE ID No. GJ-10384-RS

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EXTERIOR

Remove/replace concrete 464 sf @ \$3/sf	\$ 1,392
Remove identified residual radioactive material 24 cy @ \$14.50/cy (machine-open)	348
Replace areas with topsoil 8 cy @ \$9.50/cy	76
Replace areas with compacted roadbase 16 cy @ \$11.50/cy	184

---

TOTAL EXTERIOR	\$ 2,000
----------------	----------

TOTAL INTERIOR	0
----------------	---

ACCESS CONTROL	150
----------------	-----

---

SUBTOTAL	\$ 2,150
----------	----------

CONTINGENCY @ 5%	108
------------------	-----

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SUBTOTAL	\$ 2,258
----------	----------

CONTRACTOR OVERHEAD & PROFIT @ 40%	903
------------------------------------	-----

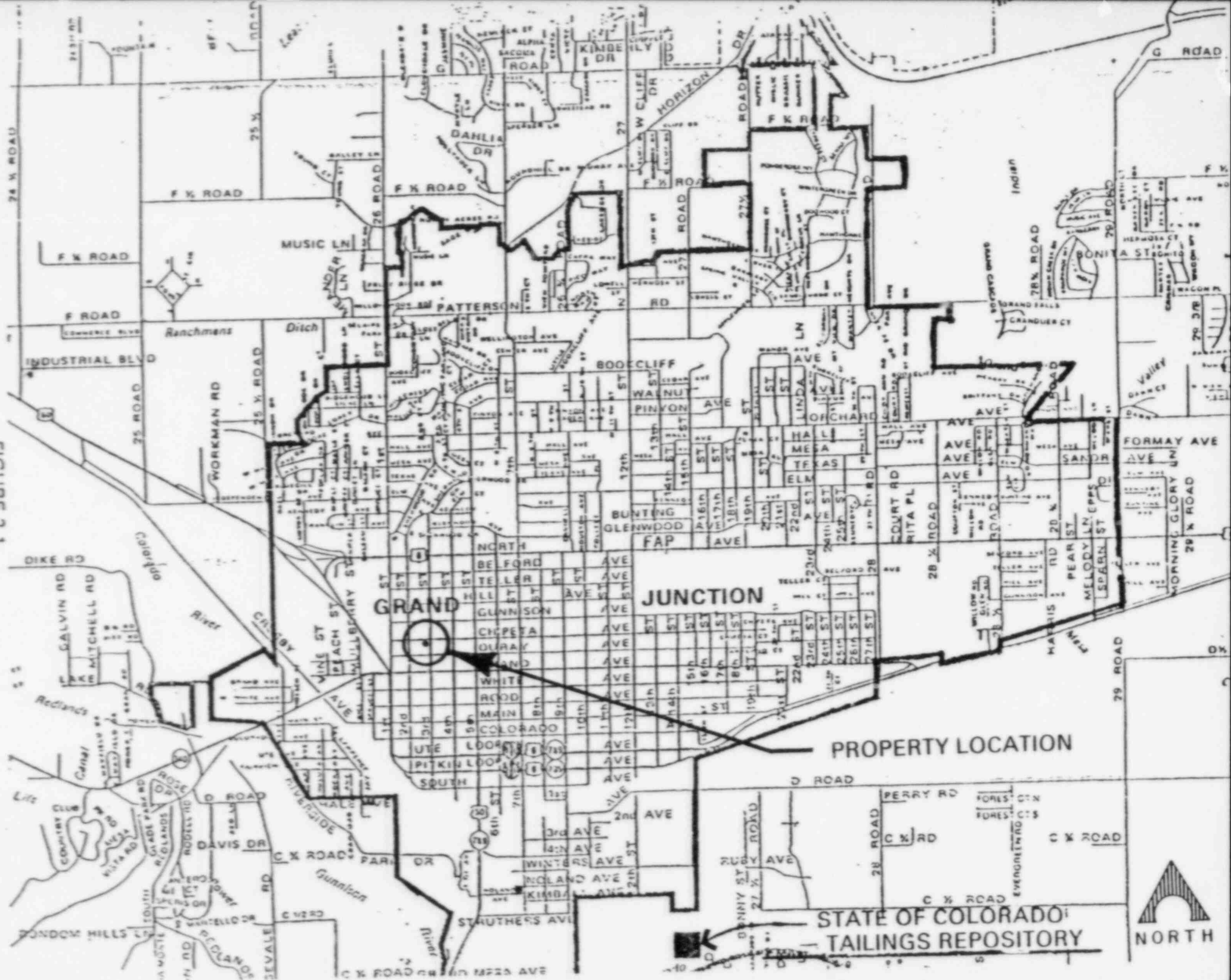
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GRAND TOTAL	\$ 3,161
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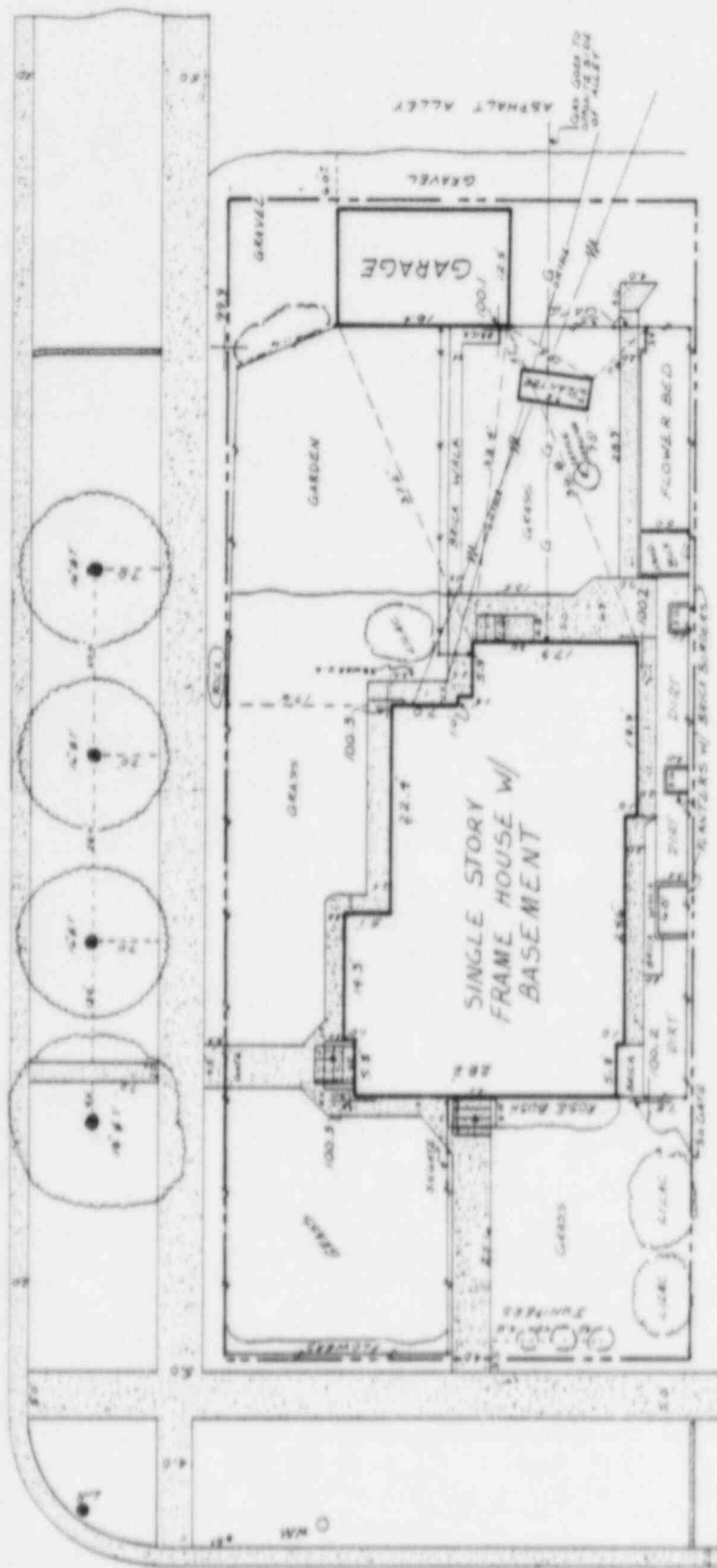
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FAV080185  
REAL0384/REA-614/LMR

FIGURE 2.1  
VICINITY MAP



NORTH 3<sup>rd</sup> STREET  
(WIDTH 33.0')



CHIPETA AVE.  
(WIDTH 33.0')

LEGAL DESC.  
LOTS 15 AND 16  
BLOCK 57, IN  
GRAND JUNCTION  
ORIGINAL TOWNSITE



FEET

FIGURE 2.2 SITE PLAN



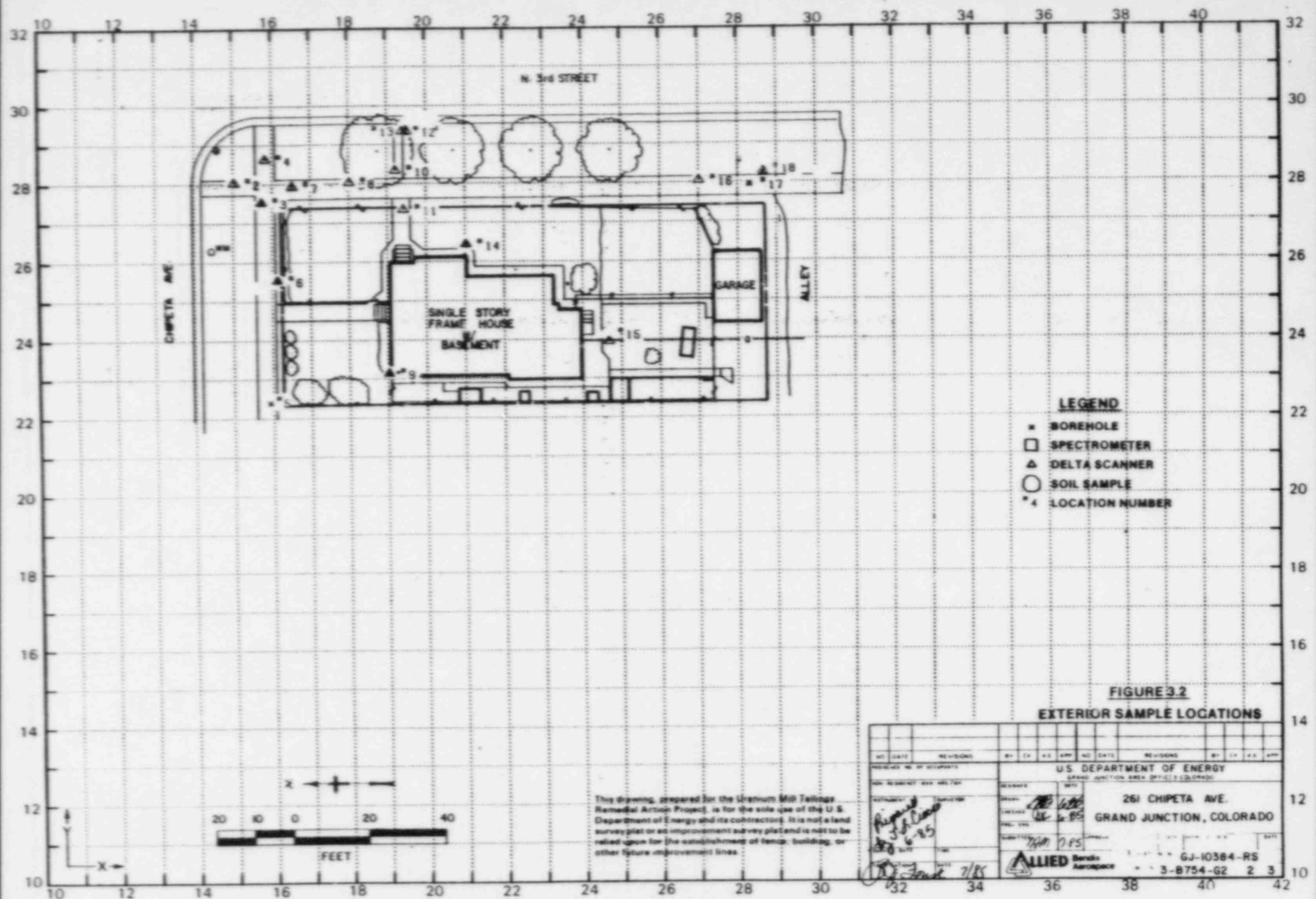
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U.S. DEPARTMENT OF ENERGY  
GRAND JUNCTION PROJECT OFFICE, CONRAD  
ADDRESS 261 CHIPETA AVE.  
GRAND JUNCTION, CO.  
SUBV. W.H.L. 16-2083 DRAFT ASJ 16-2182  
DRAWING NO. 3C.754-F1

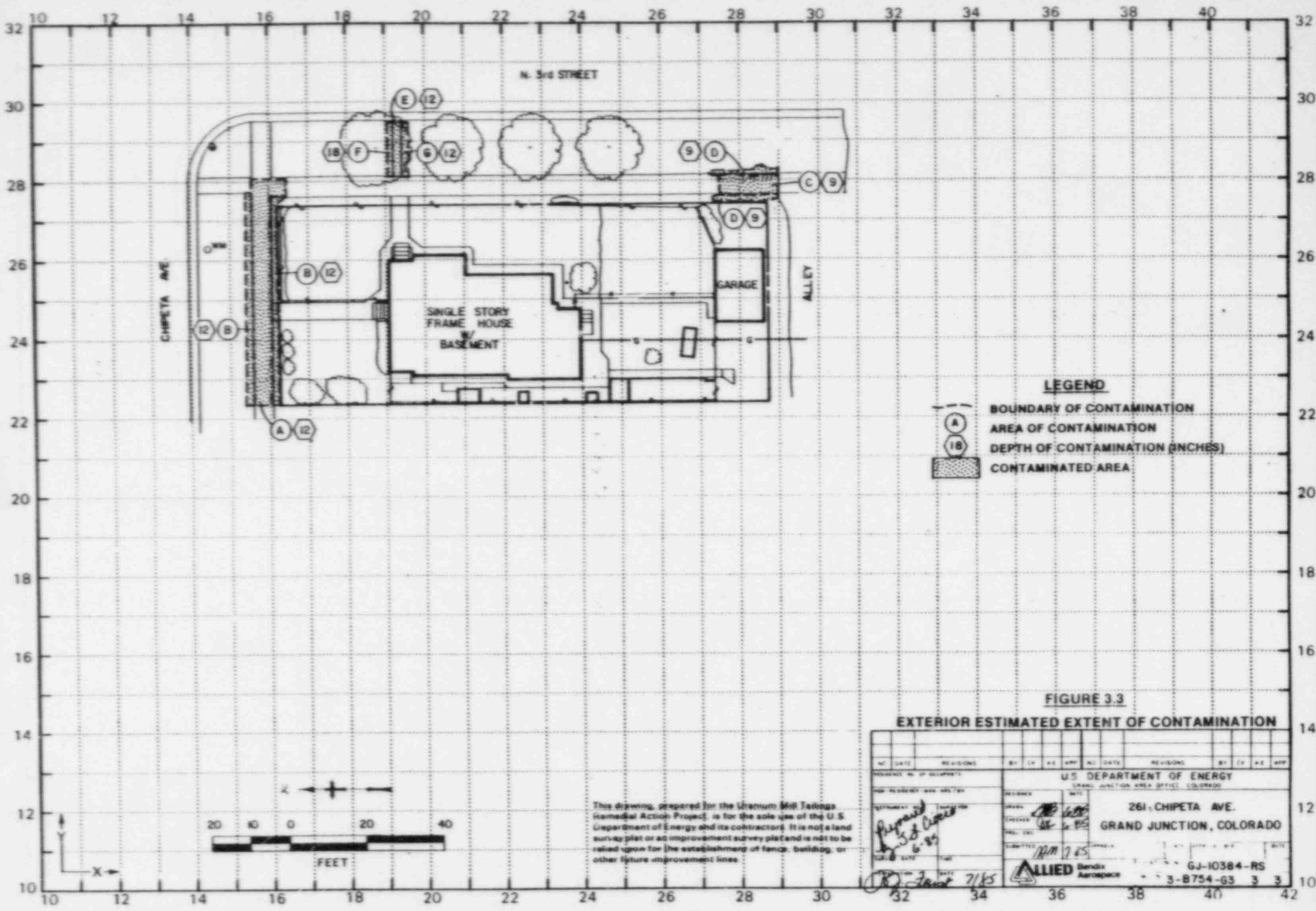
DOE FILE NO. GJ10384-RS  
AUGUST 1982  
ON MCT 16-18  
SHEET 1 OF 1











**LEGEND**

- BOUNDARY OF CONTAMINATION
- (A) AREA OF CONTAMINATION
- (18) DEPTH OF CONTAMINATION (INCHES)
- [Shaded Box] CONTAMINATED AREA

**FIGURE 3.3**

**EXTERIOR ESTIMATED EXTENT OF CONTAMINATION**

NO. DATE REVISIONS BY CH AS APP NO. DATE REVISIONS BY CH AS APP			
RESIDENT NO. OF OCCUPANTS			
U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO			
HIGH RESIDENTIAL USE AREA		261 CHIPETA AVE. GRAND JUNCTION, COLORADO	
APPROVED <i>[Signature]</i> DATE 6-85	DESIGNED <i>[Signature]</i> DATE 6-85	DRAWN <i>[Signature]</i> DATE 7-85	
CHECKED <i>[Signature]</i> DATE 7-85		ALLIED Bendix Aerospace	
GJ-10384-RS		3-B754-63 3 3	

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

Official Survey Report

Property Address 261 Chipeta Avenue

Property Owner Anson Metzger JR.

Address of Owner (if different from above) \_\_\_\_\_

Report Prepared By Teri L. Ciocco

I. PRESENCE/ABSENCE OF RESIDUAL RADIOACTIVE MATERIALS

1      No evidence of residual radioactive material on surveyed property.

1 XXX Residual radioactive materials found at the following locations:

1      In open areas.

1 XXX Under or around exterior improvements.

1      Under or around a typically nonoccupied structure.

1      Under or around a typically occupied structure.

II. RESULTS OF RADIOLOGIC ASSESSMENT

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 XXX 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 = 18 uR/h  
HOG = 47 uR/h

MEMORANDUM

ALLIED Bendix  
Aerospace

Bendix Field Engineering Corporation  
Grand Junction Operations  
Grand Junction, Colorado

Date: June 26, 1985

To: Files

From: Teri L. Ciocco

Subject: Team Leader Notes - GJ-10384-RS

Address: 261 Chipeta Avenue

Owner: Anson Metzger, Jr.

Telephone: 242-8396

Occupancy: Four

Team Members

T. Ciocco (Team Leader)  
G. Meeker  
M.E. Dexter  
N. Wallace  
R. Wilkins

D. Dille  
S. Southern  
P. Hardy  
D. Clay  
H. Lucero

Oak Ridge National Laboratory (ORNL) data indicated contamination being located on various portions of the city sidewalk.

No interior contamination, or any leading up to the house was noted.

All team members were alpha scanned before coffee break and before departing from the property.

Dave Mackler visited the property and gave Dave Dille a property and instructions to take the crew with him.

All gates were closed and locked and the property was restored to its previous condition.

Team Leader Notes  
Teri L. Ciocco  
GJ-10384-RS  
June 26, 1985  
Page 2

Dave Diss from Health and Safety visited the property. D. Diss wanted to make sure everyone washed before lunch. No hazards were sighted.

At 255 Chipeta Avenue, elevated readings spilled over onto this property and city sidewalk. No spillover consent form was obtained. Information is now being processed.

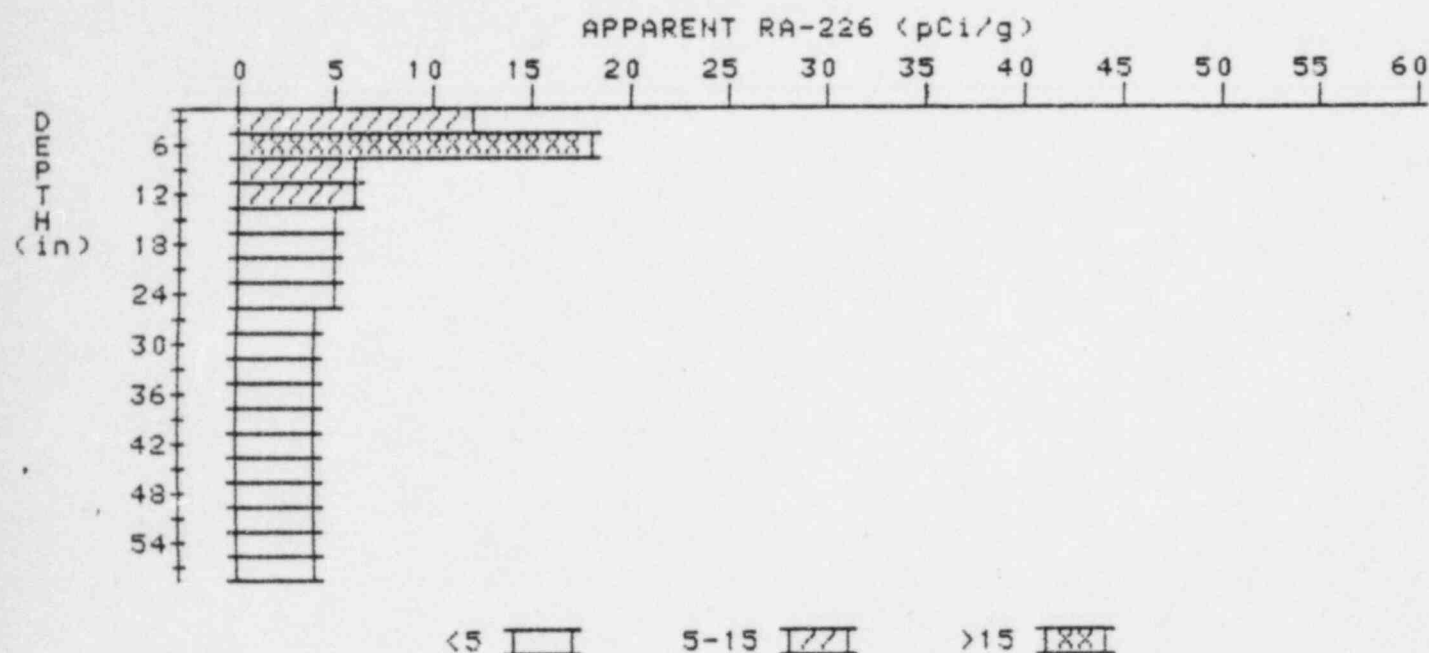
# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

3

PROPERTY NUMBER: GJ-10384-RS

HOLE NUMBER: 3

LOCATION: 157275



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	12.0	12.0
6	11.9	17.6
9	8.6	5.9
12	6.8	5.6
15	5.7	4.3
18	5.1	4.6
21	4.3	4.6
24	4.6	4.6
27	4.4	4.2
30	4.3	4.3
33	4.2	4.2
36	4.1	4.1
39	4.0	3.3
42	4.0	4.0
45	4.0	4.0
48	4.0	4.0
51	4.0	4.2
54	3.9	3.9

57

3.8

3.8

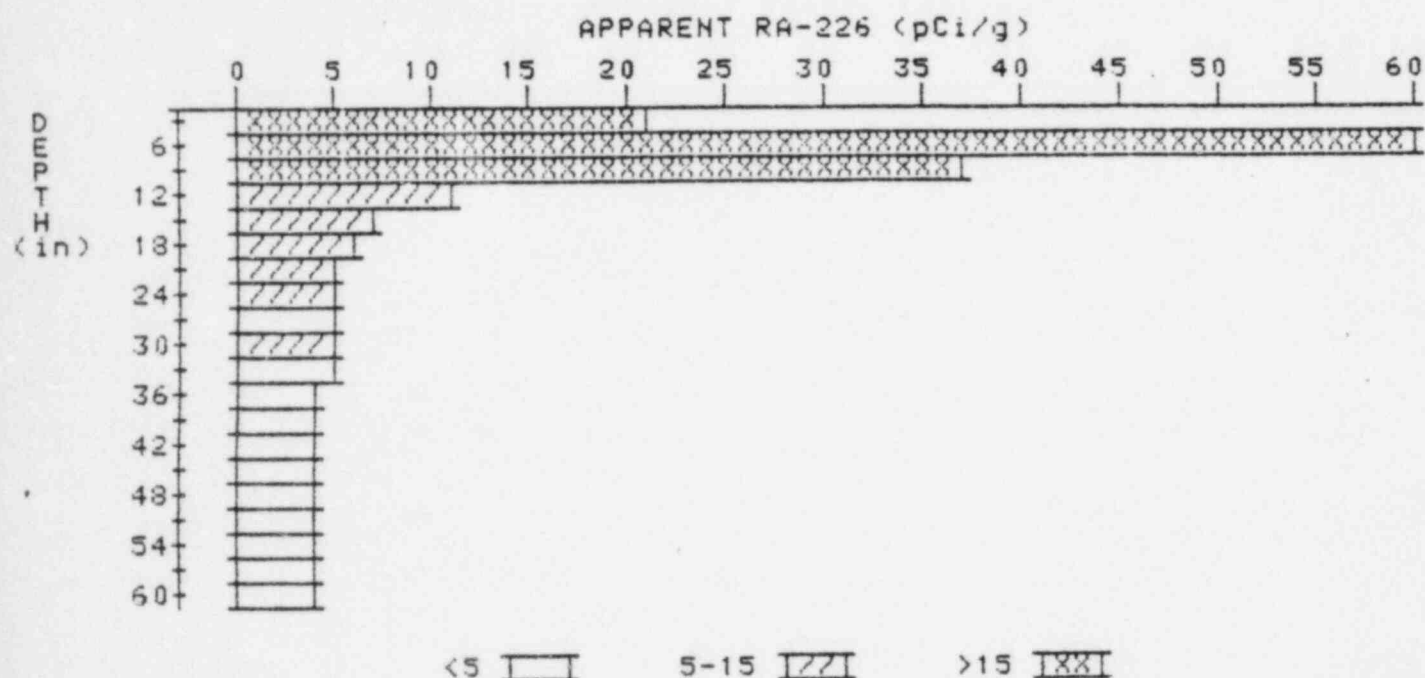
# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

5

PROPERTY NUMBER: GJ-10384-RS

HOLE NUMBER: 5

LOCATION: 159224



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	20.6	20.6
6	33.1	64.6
9	27.9	36.6
12	17.8	10.7
15	11.7	6.7
18	8.4	5.6
21	6.7	5.3
24	5.8	5.1
27	5.3	4.9
30	5.0	5.0
33	4.7	4.5
36	4.5	4.3
39	4.4	4.4
42	4.3	4.3
45	4.2	4.0
48	4.2	4.2
51	4.2	4.4
54	4.1	3.9

57  
60

4.1  
4.0

4.3  
4.0



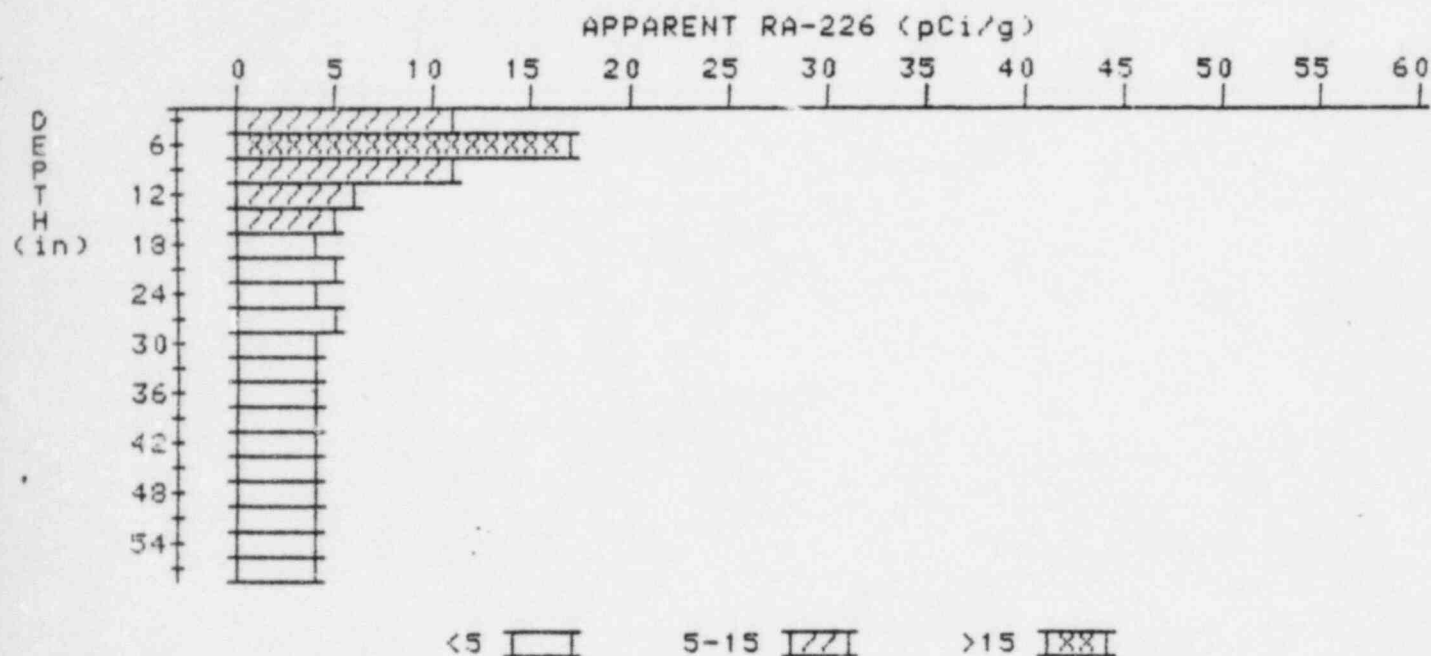
# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

6

PROPERTY NUMBER: GJ-10384-RS

HOLE NUMBER: 6

LOCATION: 161255



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	10.5	10.5
6	11.8	17.3
9	10.0	11.1
12	7.6	6.0
15	6.1	5.0
18	5.2	4.3
21	4.8	4.6
24	4.5	4.1
27	4.4	4.6
30	4.2	3.8
33	4.2	4.2
36	4.2	4.4
39	4.1	3.9
42	4.1	4.3
45	4.0	3.8
48	4.0	4.2
51	3.9	3.5
54	4.0	4.4

57

3.9

3.9

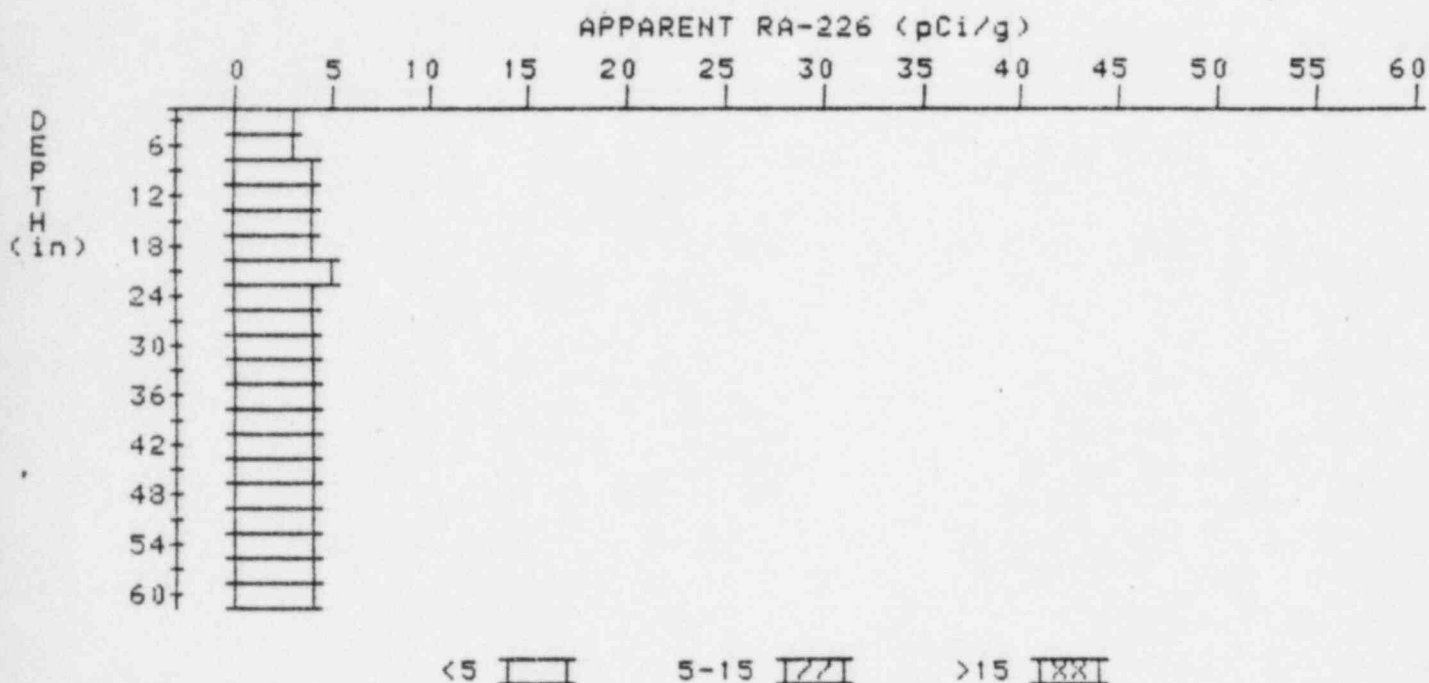
# APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

9

PROPERTY NUMBER: GJ-10384-RS

HOLE NUMBER: 9

LOCATION: 190231



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.2	3.2
6	3.3	2.9
9	3.6	3.8
12	3.8	4.0
15	3.9	4.1
18	3.9	3.5
21	4.1	4.6
24	4.0	3.6
27	4.1	4.3
30	4.1	4.3
33	4.0	3.8
36	4.0	4.2
39	3.9	3.7
42	3.9	3.9
45	3.9	3.9
48	3.9	3.9
51	3.9	3.9
54	3.9	3.9

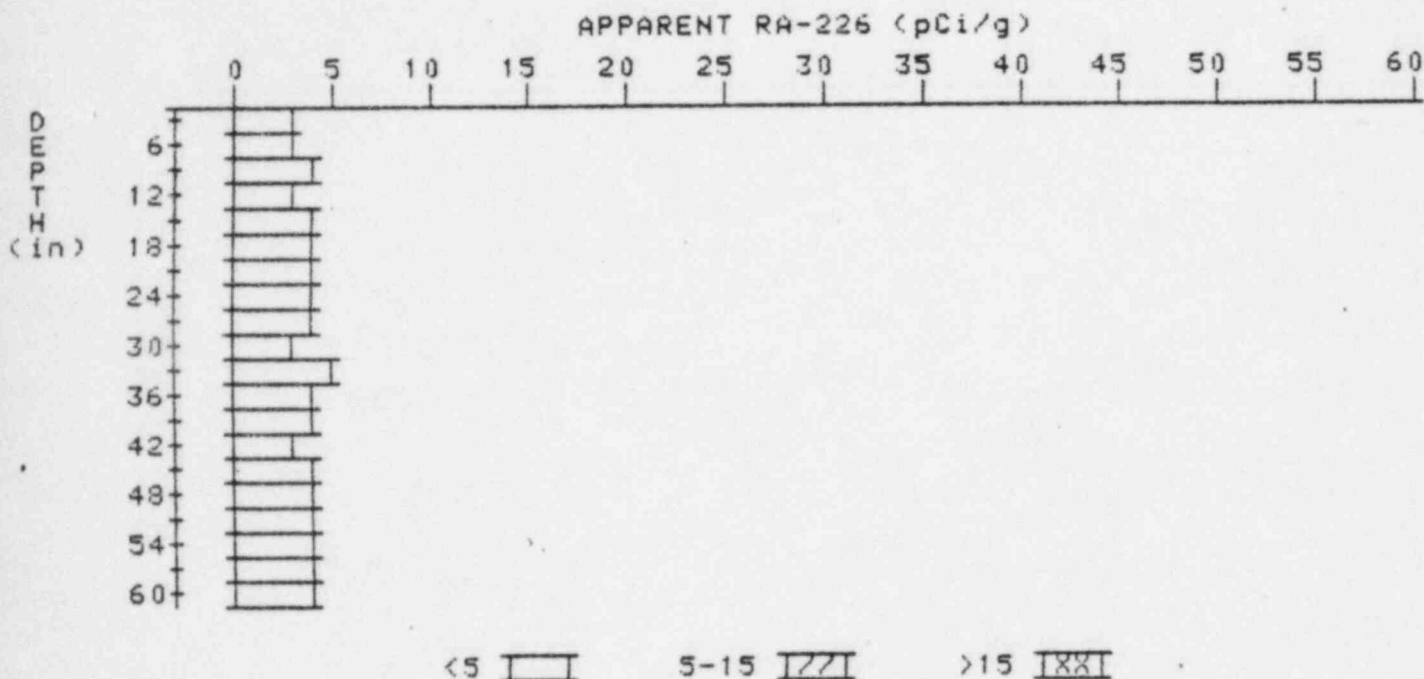
57  
60

3.9  
3.9

3.9  
3.9

# APPARENT RADIUM-226 CONCENTRATION 14 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10384-RS  
HOLE NUMBER: 14  
LOCATION: 210264



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	3.1	3.1
6	3.3	3.3
9	3.5	3.9
12	3.5	3.3
15	3.6	3.6
18	3.7	3.9
21	3.7	3.7
24	3.7	3.5
27	3.8	4.0
30	3.8	3.4
33	4.0	4.5
36	3.9	3.7
39	3.9	4.3
42	3.7	3.3
45	3.7	3.7
48	3.7	3.7
51	3.7	3.7
54	3.7	3.7

57  
60

3.7  
3.7

3.7  
3.7

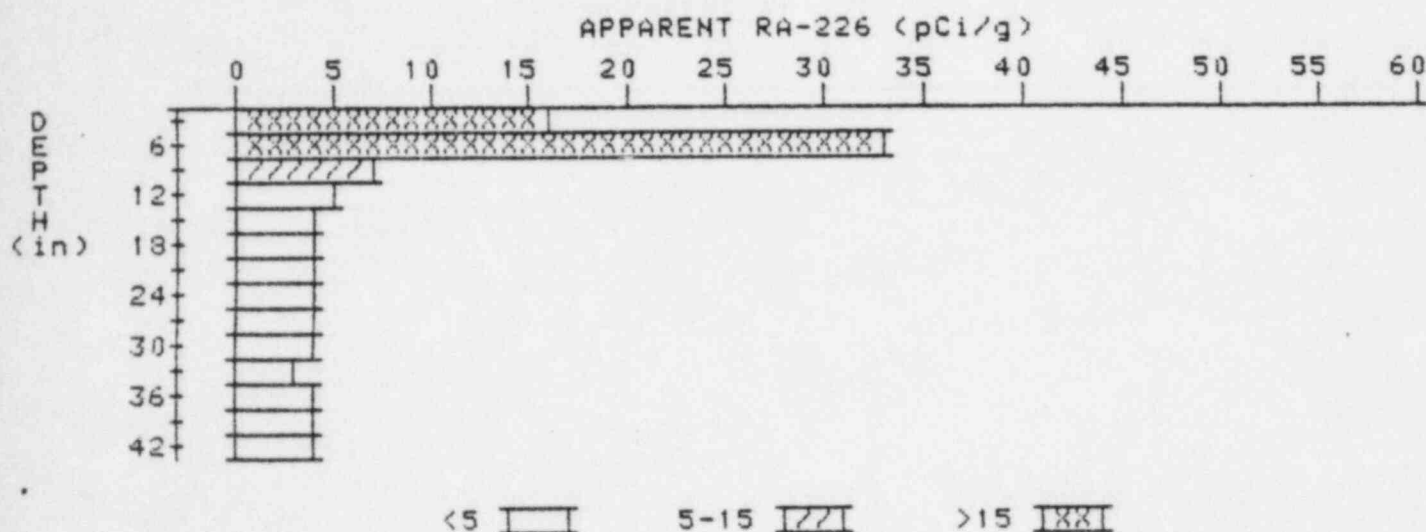
# APPARENT RADIUM-226 CONCENTRATION 17

## DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10384-RS

HOLE NUMBER: 17

LOCATION: 283279



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	16.4	16.4
6	18.3	33.2
9	11.8	7.0
12	8.0	5.0
15	5.9	3.8
18	5.0	4.3
21	4.5	4.1
24	4.2	3.8
27	4.1	4.1
30	4.0	4.2
33	3.8	3.4
36	3.8	3.8
39	3.8	3.8
42	3.8	3.8

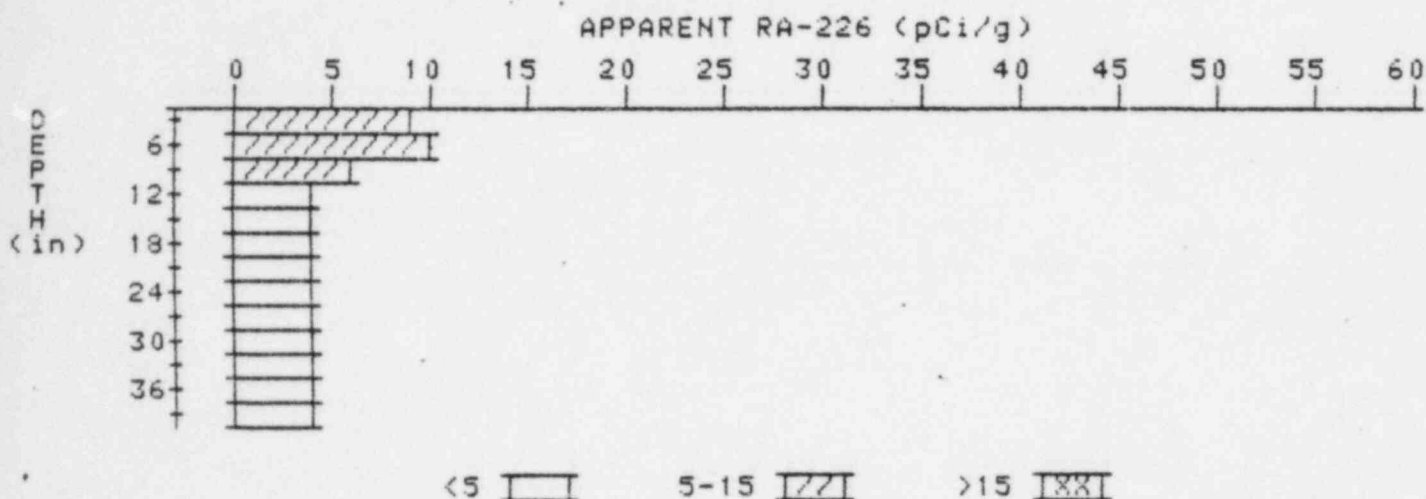
# APPARENT RADIUM-226 CONCENTRATION 18

## DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-10384-RS

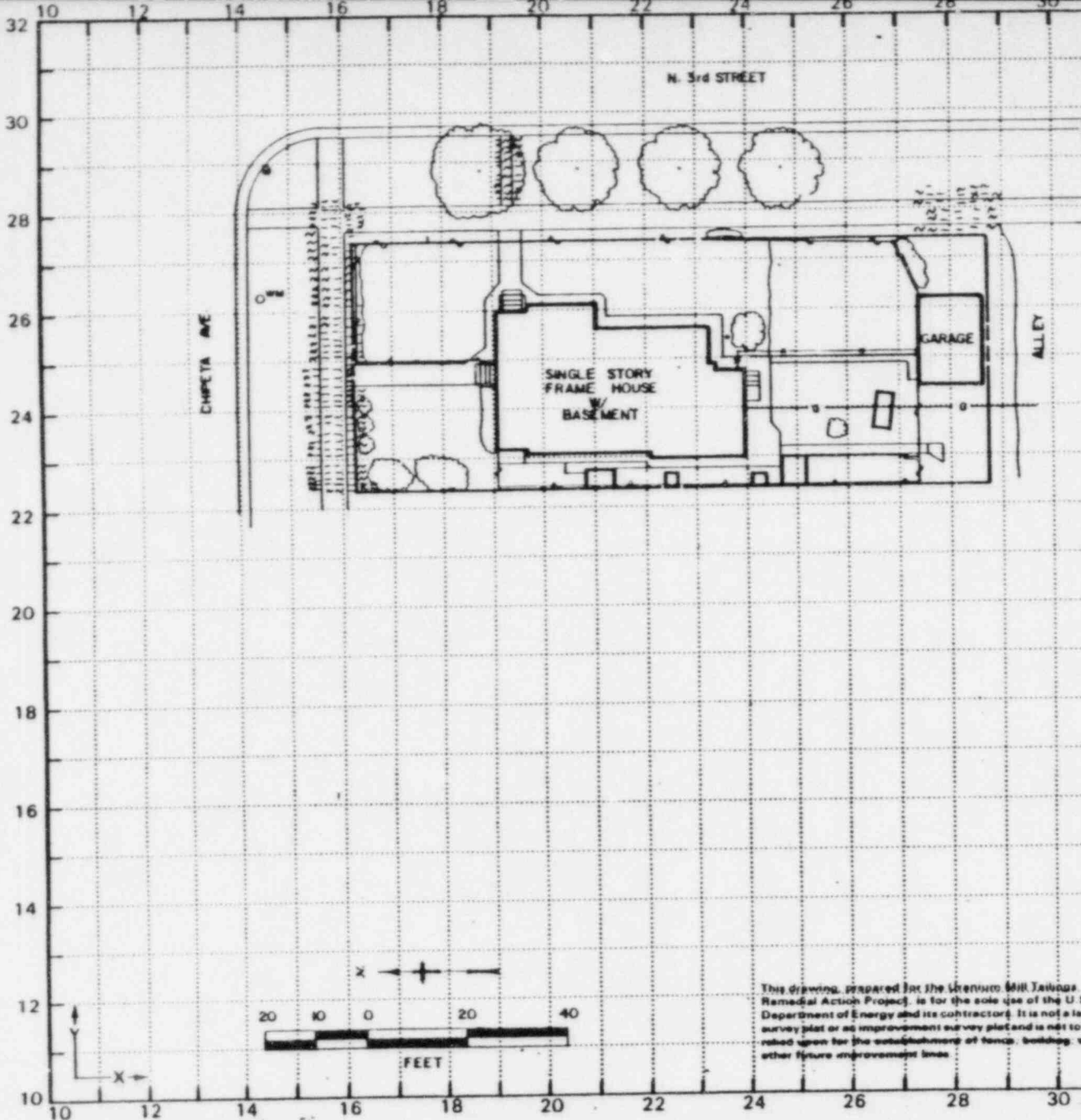
HOLE NUMBER: 18

LOCATION: 285282



Depth (in)	Apparent Radium-226 (pCi/g) Undeconvolved	Apparent Radium-226 (pCi/g) Deconvolved
3	8.6	8.6
6	8.1	9.9
9	6.6	6.2
12	5.3	4.2
15	4.6	4.1
18	4.2	3.7
21	4.1	4.3
24	3.9	3.5
27	3.9	3.7
30	4.0	4.4
33	3.9	3.9
36	3.8	3.6
39	3.8	3.8





Gamma Readings of 150 to 199 cps  
 --- Gamma Readings of 200 to 300 cps  
 XXXX Gamma Readings of > 300 cps

# EXTERIOR GAMMA SCAN APPENDIX COPY

DATE	REVISION	BY	LP	NS	APP	NO	DATE	REVISION	BY	LP	NS	APP
<p>U.S. DEPARTMENT OF ENERGY</p> <p>GRAND JUNCTION AREA OFFICE, COLORADO</p> <p>261 CHIPETA AVE.</p> <p>GRAND JUNCTION, COLORADO</p> <p>GJ-40384-R-1</p> <p>0-8754-1 17</p>												
<p>DESIGNER</p> <p>DATE</p>				<p>ALLIED</p> <p>Grand Junction</p>								
<p>CHECKER</p> <p>DATE</p>				<p>0-8754-1 17</p>								
<p>APPROVED</p> <p>DATE</p>				<p>0-8754-1 17</p>								
<p>VERIFICATION</p> <p>DATE</p>				<p>0-8754-1 17</p>								

This drawing, prepared for the Grand Junction Area Office, 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.