

RADIOLOGIC AND ENGINEERING ASSESSMENT

FOR

DOE ID NO.: GJ-00986-MR
ADDRESS: 124 TELLER AVENUE

MAY 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
DOE PROJECT ENGINEER

DATE _____

REA00986:REA-504

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

The location, DOE ID No. GJ-00986-MR, is a single-family residence located at 124 Teller Avenue, Grand Junction, Colorado.

The purpose of this assessment is to evaluate the extent of uranium millsite contamination at this property and present a recommendation based on this assessment.

1.2 Evaluation and Recommendation

It is recommended that no remedial action be performed and that a brief completion report be prepared for certification of this property.

2.0 PROPERTY DESCRIPTION

2.1 General Description

Address: 124 Teller Avenue, Grand Junction, Colorado

Zoning: Commercial (C-2)

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

Legal Description: Lots 19 and 20, Block 12, City of Grand Junction, County of Mesa, State of Colorado.

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

Utilities: Utility locations are shown in Appendix Figure 2.2.

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

Bordering Properties:

| | |
|--------|-------------------------|
| North: | Alley |
| South: | Teller Avenue |
| East: | Single-family residence |
| West: | Single-family residence |

2.2 Existing Facilities and Structures

Primary Structure:

| | |
|--------------------|--|
| Type: | Single-story residence |
| Size: | Approx. 700 sf |
| Construction Date: | 1905 |
| Construction: | Wood-frame |
| Foundation: | Concrete walls on spread footings |
| Footing Depth: | Approximately 30" to bottom of footing from grade on the north and south sides of the house and 60" to the bottom of footing from grade in the center section of the house |
| Basement: | Yes - under center section |
| Crawl Space: | None |
| Condition: | Good |

Other Structures:

| | |
|---------------|-------------------------------------|
| Type: | Single-story garage |
| Size: | Approximately 484 sf |
| Construction: | Wood-frame |
| Foundation: | Concrete slab-on-grade (monolithic) |
| Condition: | Good |

| | |
|---------------|----------------------|
| Type: | Shed |
| Size: | Approximately 57 sf |
| Construction: | Pre-fabricated metal |
| Foundation: | None |
| Condition: | Good |

Improvements or Attachments to Structure:

| | |
|------------------|--|
| Additions: | None |
| Porches: | None |
| Patios: | |
| Type: | Concrete (two) |
| Size: | Approx. 60 sf and 120 sf, respectively |
| Location: | North sides of the house |
| Driveways: | |
| Type: | Concrete |
| Location: | Along west side of house |
| Sidewalks: | |
| Type: | Concrete |
| Location: | Along east and south sides of the house, from north side of the house to the garage and along north side of the garage |
| Fences: | |
| Type: | Chain link |
| Location: | Along east and west property lines, along half of the north property line |
| 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: Porches on the north and south side of the house were enclosed to expand the living areas. New siding, windows, and roof covering were added to this house.

Architectural Significance: None

Historical Significance: None

3.0 RADIOLOGIC SURVEY

3.1 Introduction

Radiologic data were collected by Bendix at DOE ID No. GJ-00986-MR on March 20, 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 basement of the primary structure.

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

3.2 Gamma Exposure-Rate Surveys

3.2.1 Exterior Findings

Background Readings: 10 to 13 uR/h
Highest Outside Gamma Reading (HOG): 34 uR/h

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

3.2.2 Interior Findings

Background Readings: 13 to 16 uR/h
Highest Inside Gamma Reading (HIG): 32 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. Appendix Figures 3.3a, 3.3b, and 3.3c show interior exposure rates and locations of these measurements.

3.3 Boreholes, Soil Samples, and Other Measurements

Areas which displayed elevated gamma levels were further investigated; these areas are shown in Appendix Figures 3.3a and 3.4. Data from these investigations are included in Appendix Tables 3.1 and 3.2.

3.4 Radon/Radon Daughter Concentration (RDC)

Determined by CDH: 0.011 gross working level (WL). No additional RDC measurements were taken by Bendix.

3.5 Extent of Contamination

Appendix Figure 3.5 shows the identified area and estimated depth of contamination on this property, based on assessments of all measurements taken. As noted in this figure, the area recommended for remedial action that contains identified residual radioactive materials is:

(AREA A) The concrete floor in the basement of the primary structure is contaminated. The concrete floor is 4 inches thick (approximately 646 sf).

4.0 RECOMMENDED REMEDIAL ACTION

4.1 Decontamination and Restoration

We do not recommend decontamination and restoration of this property. It is recommended that no remedial action be performed and that a brief completion report be prepared for certification of this property.

4.3 Evaluation of Remedial Action Options

The recommendation that no remedial action be performed on this property is made because the levels of radioactivity on this property fall below the EPA standards (40 CFR 192) of: 1) if the indoor radon daughter concentration exceeds 0.02 working level (WL), where practical or 0.03 WL in any event (the gross working level determined by CDH for this property is 0.011); 2) indoor gamma radiation exceeds 20 microroentgens per hour (uR/h) above background levels (interior background readings for this location were found to be 13 to 16 uR/h with the highest inside gamma reading of 32 uR/h).

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 |

Appendix Figures:

| | |
|-------------|--|
| Figure 2.1 | Vicinity Map |
| Figure 2.2 | Site Plan |
| Figure 3.1 | Exterior Grid-Point Exposure Rates |
| Figure 3.2 | Exterior Gamma Scan |
| Figure 3.3a | Interior Gamma Exposure Rates and Sample Locations (Basement) |
| Figure 3.3b | Interior Gamma Exposure Rates (Ground Floor) |
| Figure 3.3c | Interior Gamma Exposure Rates |
| Figure 3.4 | Exterior Sample Locations |
| Figure 3.5 | Estimated Extent of Contamination |

Official Survey Report

Memo of Understanding

Team Leader Notes

Deconvolution Graphs (Apparent Radium-226 Concentration)

Radium Concentrations at Exterior Locations

DOE ID No. GJ-00986-RS

124 Teller Avenue

Page 1 of 3

| Loc No. | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|------------|------------------|----------------|---------------|---------------------------|---------|------------------------|-------------------|
| | | | | Tot. Ct | Spectr. | | |
| 9 | 178235 | 00 | DS | <1.0 | | * | North of sidewalk |
| | | 00-06 | SS | | | 2.6 | Background |
| | | 03 | TC | 2.5 | | * | Sewer |
| | | 06 | TC | 2.8 | | * | |
| | | 09 | TC | 3.0 | | * | DC = 0 inches |
| | | 12 | TC | 3.4 | | * | |
| | | 15 | TC | 3.6 | | * | |
| | | 18 | TC | 3.8 | | * | |
| | | 21 | TC | 3.9 | | * | |
| | | 24 | TC | 4.0 | | * | |
| | | 27 | TC | 4.1 | | * | |
| | | 30 | TC | 4.1 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 4.0 | | * | |
| | | 39 | TC | 4.1 | | * | |
| | | 42 | TC | 4.0 | | * | |
| | | 45 | TC | 4.1 | | * | |
| | | 48 | TC | 4.0 | | * | |
| | | 51 | TC | 4.0 | | * | |
| | | 54 | TC | 4.1 | | * | |
| | | 57 | TC | 4.0 | | * | |
| 10 | 183250 | 00 | DS | <1.0 | | * | NE corner of |
| | | 03 | TC | 3.0 | | * | house |
| | | 06 | TC | 3.3 | | * | Sewer |
| | | 09 | TC | 3.5 | | * | |
| | | 12 | TC | 3.9 | | * | |
| | | 15 | TC | 3.8 | | * | DC = 0 inches |
| | | 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 | 3.8 | | * | |
| | | 39 | TC | 3.9 | | * | |
| | | 42 | TC | 4.0 | | * | |
| | | 45 | TC | 4.0 | | * | |

Radium Concentrations at Exterior Locations

DOE ID No. GJ-00986-RS

124 Teller Avenue

Page 2 of 3

| Loc No. | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|---------|---------------|-------------|------------|------------------------|---------|---------------------|---------------|
| | | | | Tot. Ct | Spectr. | | |
| 10 | 183250 | 48 | TC | 4.1 | | * | |
| | | 51 | TC | 4.1 | | * | |
| | | 54 | TC | 4.2 | | * | |
| | | 57 | TC | 4.1 | | * | |
| | | 60 | TC | 4.1 | | * | |
| | | 63 | TC | 3.9 | | * | |
| | | 66 | TC | 4.0 | | * | |
| | | 69 | TC | 4.0 | | * | |
| 11 | 204256 | 00 | DS | 1.3 | | * | Gas line |
| | | 03 | TC | 3.0 | | * | |
| | | 06 | TC | 3.3 | | * | DC = 0 inches |
| | | 09 | TC | 3.7 | | * | |
| | | 12 | TC | 3.8 | | * | |
| | | 15 | TC | 4.0 | | * | |
| | | 18 | TC | 4.0 | | * | |
| | | 21 | TC | 4.1 | | * | |
| | | 24 | TC | 4.2 | | * | |
| | | 27 | TC | 4.2 | | * | |
| | | 30 | TC | 4.1 | | * | |
| | | 33 | TC | 4.1 | | * | |
| | | 36 | TC | 4.1 | | * | |
| | | 39 | TC | 4.2 | | * | |
| | | 42 | TC | 4.1 | | * | |
| | | 45 | TC | 4.0 | | * | |
| | | 48 | TC | 3.9 | | * | |
| | | 51 | TC | 3.8 | | * | |
| 12 | 231256 | 00 | DS | <1.0 | | * | Water |
| | | 03 | TC | 3.0 | | * | |
| | | 06 | TC | 3.3 | | * | DC = 0 inches |
| | | 09 | TC | 3.4 | | * | |
| | | 12 | TC | 3.7 | | * | |
| | | 15 | TC | 3.8 | | * | |
| | | 18 | TC | 3.8 | | * | |
| | | 21 | TC | 3.7 | | * | |
| | | 24 | TC | 3.8 | | * | |
| | | 27 | TC | 3.8 | | * | |
| | | 30 | TC | 3.9 | | * | |
| | | 33 | TC | 3.9 | | * | |
| | | 36 | TC | 3.9 | | * | |
| | | 39 | TC | 4.0 | | * | |
| | | 42 | TC | 3.9 | | * | |
| | | 45 | TC | 3.8 | | * | |

Radium Concentrations at Exterior Locations

DOE ID No. GJ-00986-RS

124 Teller Avenue

Page 3 of 3

| Loc No. | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|---------|---------------|-------------|------------|------------------------|---------|---------------------|-----------------|
| | | | | Tot. Ct | Spectr. | | |
| 12 | 231256 | 48 | TC | 3.7 | | * | |
| | | 51 | TC | 3.8 | | * | |
| | | 54 | TC | 3.8 | | * | |
| | | 57 | TC | 3.9 | | * | |
| | | 60 | TC | 4.0 | | * | |
| | | 63 | TC | 3.9 | | * | |
| 13 | 264217 | 00 | DS | 1.5 | | * | W property line |

Tool 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 = 03-20-85
 Team Leader = JJ

Radium Concentrations at Interior Locations

DOE ID No. GJ-00986-RS

124 Teller Avenue

Page 1 of 2

| Loc No. | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|---------|---------------|-------------|------------|------------------------|---------|---------------------|----------------------|
| | | | | Tot. Ct | Spectr. | | |
| 1 | | 00 | DS | 6.9 | | * | Northwest basement |
| | | 00-04 | SS | | | 10.7 | Core |
| | | 04-10 | SS | | | 3.3 | Soil and concrete |
| | | 03 | TC | 5.6 | | * | |
| | | 06 | TC | 5.3 | | * | DC = 4 inches |
| | | 09 | TC | 4.6 | | * | Based on the |
| | | 12 | TC | 4.3 | | * | thickness of the |
| | | 15 | TC | 4.0 | | * | concrete slab |
| | | 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 | 3.8 | | * | |
| 2 | | 00 | DS | 14.2 | | * | Basement slab |
| 3 | | [14] | DS | <1.0 | | * | On northwest footing |
| 4 | | 00 | DS | 4.0 | | * | SW room/basement |
| | | 12 | DS | <1.0 | | * | |
| | | 00-04 | SS | | | 8.0 | Core |
| | | 04-10 | SS | | | 2.0 | Soil and concrete |
| | | | | | | | DC = 4 inches |
| | | | | | | | Based on the |
| | | | | | | | thickness of the |
| | | | | | | | concrete slab |
| 5 | | 00 | DS | <1.0 | | * | Sump room |
| 6 | | 00 | DS | 7.7 | | * | 4X4 slab/sump room |
| | | | | | | | DC = 4 inches |
| | | | | | | | Based on the |
| | | | | | | | thickness of the |
| | | | | | | | concrete slab |
| 7 | | 00 | DS | 1.1 | | * | On the stairs |

Radium Concentrations at Interior Locations

DOE ID No. GJ-00986-RS

124 Teller Avenue

Page 2 of 2

| Loc No. | Grid Location | Depth (in.) | Meas. Type | In Situ Ra-226 (pCi/g) | | Chem Ra-226 (pCi/g) | Comments |
|---------|---------------|-------------|------------|------------------------|---------|---------------------|-------------------|
| | | | | Tot. Ct | Spectr. | | |
| 8 | | [36] | DS | <1.0 | | * | On wall of stairs |

Tool Types: GB = GAD-6 Borehole
DS = Delta Scintillometer
TC = Total Count Borehole
SS = Soil Sampler
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 = 03-20-85
Team Leader = JJ

Table 3.3
Summary of Interior Gamma Exposure Rates

DOE ID No. GJ-00986-RS 124 Teller 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) |
|---------------|---|--------------------------------------|-------------------------------------|--|-------------------------------|---------------------------|
| ROOM A | 01 | 18-18 | 18 | 01 | 19-19 | 19 |
| ROOM B | 02 | 18-19 | 19 | 02 | 17-32 | 25 |
| ROOM C | 02 | 17-19 | 18 | 02 | 17-28 | 23 |
| ROOM D | 06 | 17-20 | 18 | 06 | 17-27 | 21 |
| ROOM E | 03 | 16-19 | 18 | 03 | 17-27 | 22 |
| ROOM F | 05 | 17-19 | 18 | 05 | 18-25 | 21 |
| ROOM G | 02 | 18-19 | 19 | 02 | 17-27 | 22 |
| ROOM H | 06 | 13-16 | 15 | 06 | 13-16 | 15 |
| ROOM I | 05 | 14-16 | 15 | 05 | 14-17 | 16 |
| ROOM J | 02 | 14-15 | 15 | 02 | 15-15 | 15 |
| ROOM K | 09 | 13-15 | 14 | 09 | 14-16 | 15 |
| ROOM L | 07 | 14-16 | 15 | 07 | 15-17 | 15 |
| GARAGE | 09 | 12-14 | 13 | 08 | 12-14 | 13 |
| METAL SHED | 03 | 12-13 | 12 | 03 | 12-14 | 13 |

*Exposure Rates and Room Locations Shown in Appendix Figures 3.3a, 3.3b, and 3.3c.



FIGURE 2.1
VICINITY MAP

LOTS 19 AND 20 BLOCK 12
CITY OF GRAND JUNCTION,
MESA COUNTY, COLORADO.

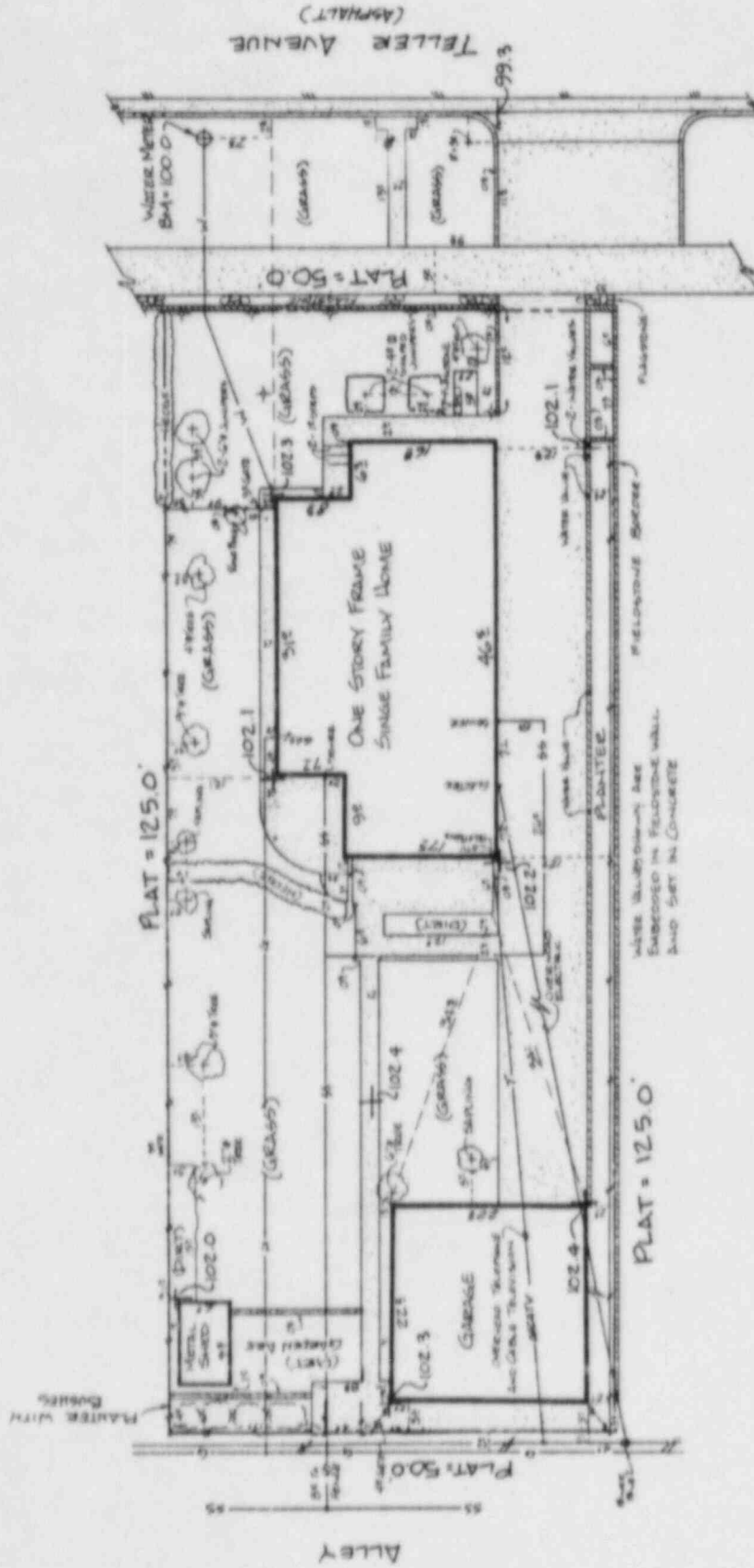


FIGURE 2.2 SITE PLAN

This drawing, prepared for the Grand Junction Suburban Area Project, is for the use of the U.S. Department of Energy and the contractors. It is not a legal survey plan or an engineering drawing and is not to be relied upon for the establishment of lines, building, or other future development lines.

| | |
|---|---------------|
| U.S. DEPARTMENT OF ENERGY | DATE 10/10/85 |
| GRAND JUNCTION PROJECT OFFICE, COLORADO | BY 20 586 RS |
| ADDRESS 124 TELLER AVENUE | |
| GRAND JUNCTION, COLORADO | |
| SUB. WHL 131105 | DATE 10/13/85 |
| DRAWING NO. 3-C-548-F1 | SHEET 1 OF 1 |

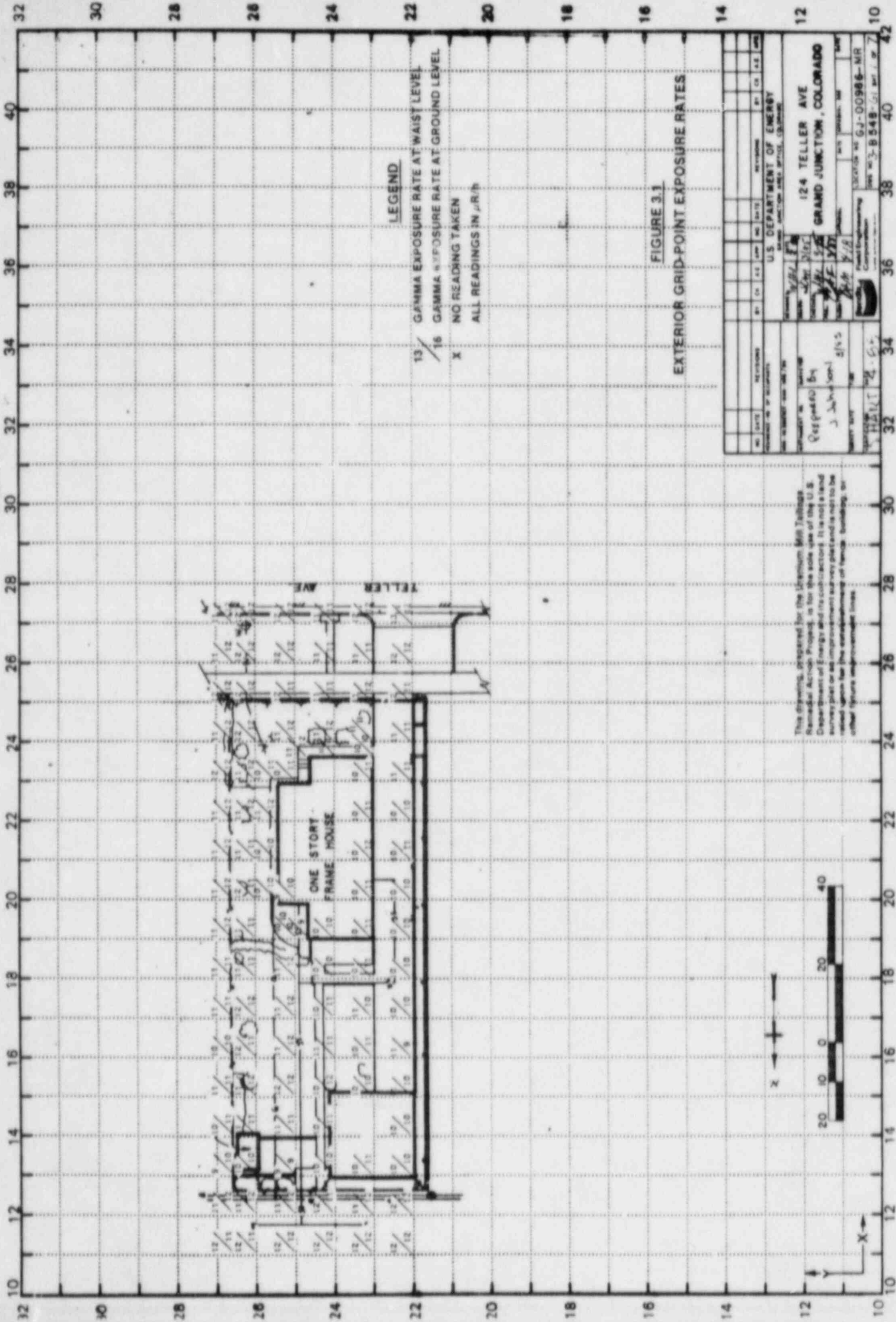
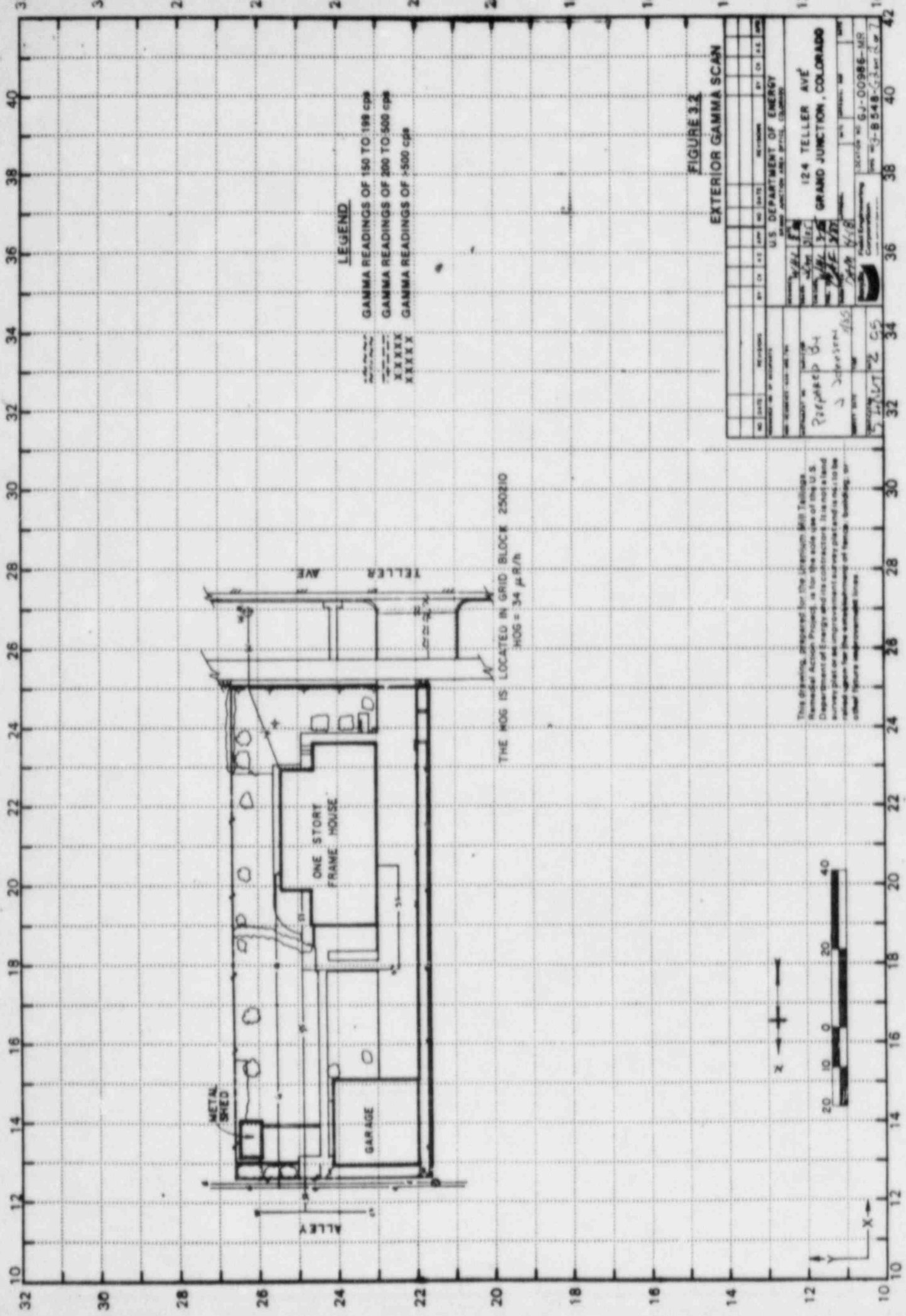


FIGURE 3.1
EXTERIOR GRID-POINT EXPOSURE RATES

| | | | | | | | |
|--|--------------|-------------|--------------|---|--------------|-------------|--------------|
| NO. OF DAYS | NO. OF HOURS | NO. OF DAYS | NO. OF HOURS | NO. OF DAYS | NO. OF HOURS | NO. OF DAYS | NO. OF HOURS |
| 1 | 1 | 2 | 2 | 3 | 3 | 4 | 4 |
| U.S. DEPARTMENT OF ENERGY OFFICE OF ENVIRONMENTAL HEALTH AND SAFETY HEALTH, SAFETY, AND ENVIRONMENTAL DIVISION | | | | | | | |
| PROJECT NO. 124 PROJECT NAME 124 TELLER AVE PROJECT LOCATION GRAND JUNCTION, COLORADO | | | | PROJECT NO. 124 PROJECT NAME 124 TELLER AVE PROJECT LOCATION GRAND JUNCTION, COLORADO | | | |
| PROJECT NO. 124 PROJECT NAME 124 TELLER AVE PROJECT LOCATION GRAND JUNCTION, COLORADO | | | | PROJECT NO. 124 PROJECT NAME 124 TELLER AVE PROJECT LOCATION GRAND JUNCTION, COLORADO | | | |
| PROJECT NO. 124 PROJECT NAME 124 TELLER AVE PROJECT LOCATION GRAND JUNCTION, COLORADO | | | | PROJECT NO. 124 PROJECT NAME 124 TELLER AVE PROJECT LOCATION GRAND JUNCTION, COLORADO | | | |

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 figure measurements.



LEGEND

- GAMMA READINGS OF 150 TO 199 cph
- GAMMA READINGS OF 200 TO 500 cph
- GAMMA READINGS OF 500 cph

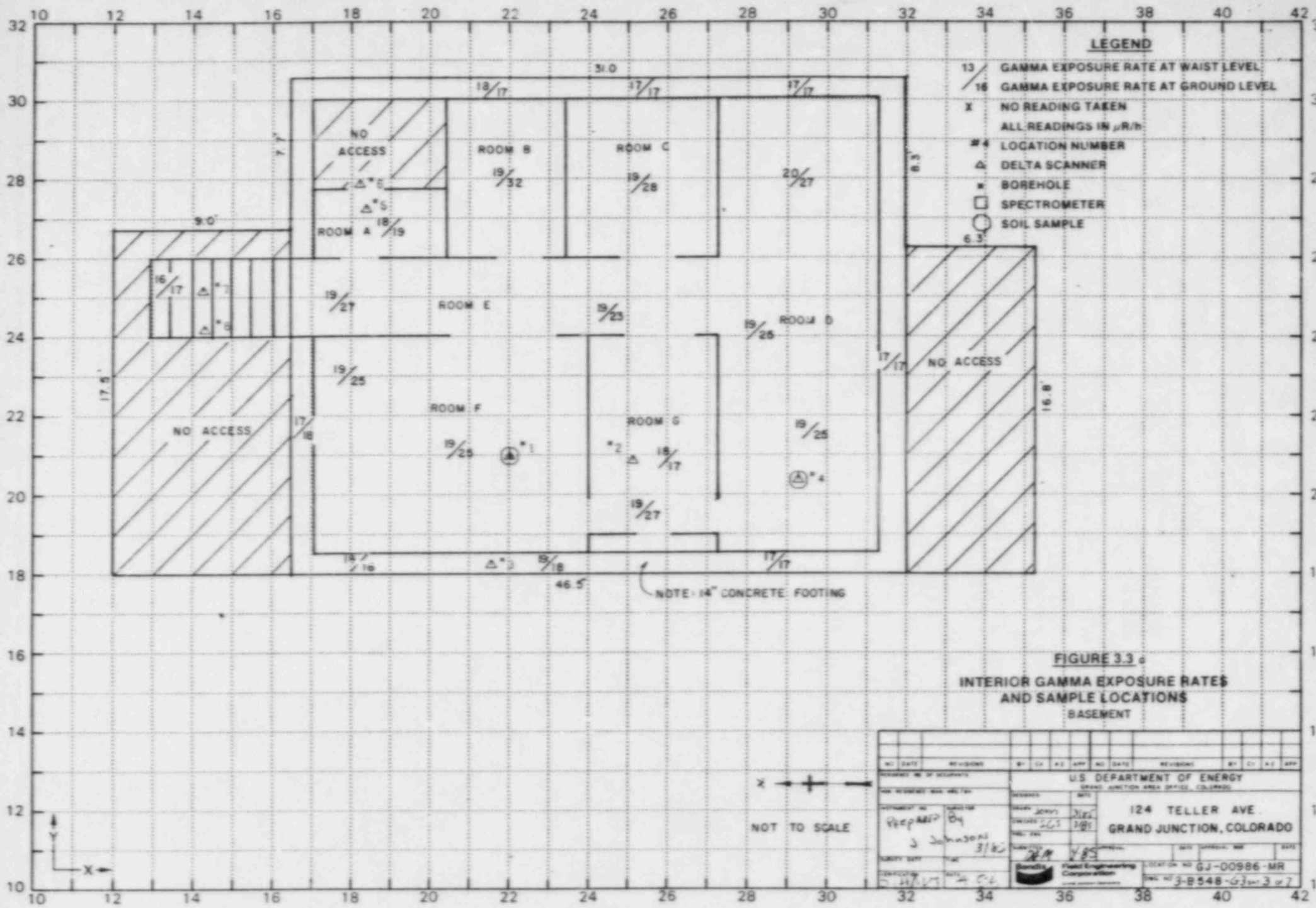
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FIGURE 3.2

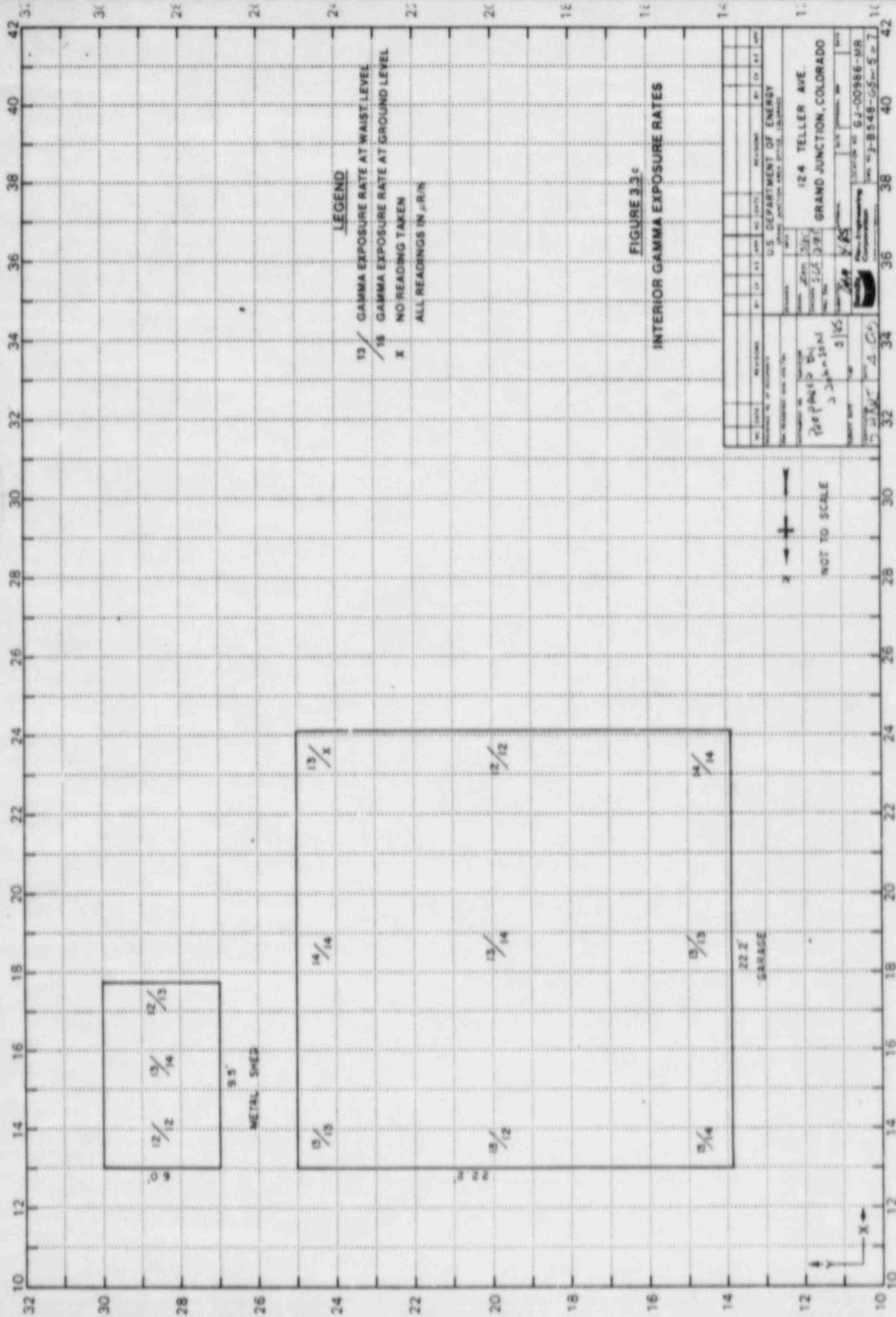
EXTERIOR GAMMA SCAN

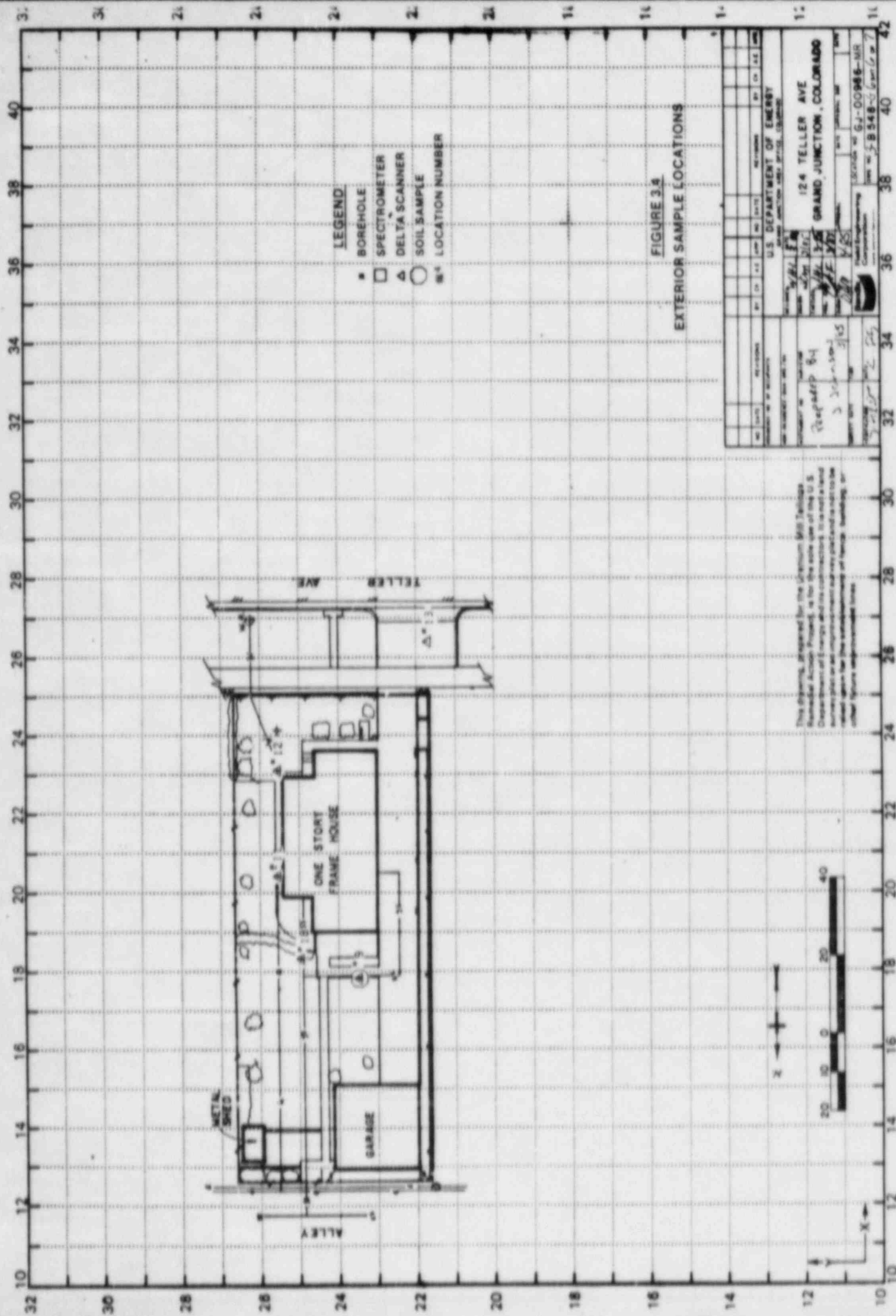
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|--|--|--|--|--|--|--|--|--|--|
| U.S. DEPARTMENT OF ENERGY | | | | | | | | | |
| OFFICE OF ENVIRONMENTAL RESTORATION | | | | | | | | | |
| 124 TELLER AVE GRAND JUNCTION, COLORADO | | | | | | | | | |
| PROJECT NO. 63-00986-MR DATE 8/18/83 BY J. J. JONES CHECKED BY J. J. JONES APPROVED BY J. J. JONES | | | | | | | | | |

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| | | | | | | | | | | | | |
|--|--|-----------|--|-----------------------------------|----|------|----------|---------------------|--|----|----|------|
| NO. DATE | | REVISIONS | | BY | CH | DATE | NO. DATE | REVISIONS | | BY | CH | DATE |
| U.S. DEPARTMENT OF ENERGY GRAND JUNCTION AREA OFFICE, COLORADO 124 TELLER AVE. GRAND JUNCTION, COLORADO | | | | | | | | | | | | |
| PROJECT NO. 3-8548-03 DRAWING NO. 3-8548-03-3 | | | | DATE 3/85 BY J. H. [signature] | | | | CHECKED [signature] | | | | |
| PREPARED BY J. H. [signature] | | | | DRAWN BY J. H. [signature] | | | | SCALE 1" = 10' | | | | |
| CHECKED BY J. H. [signature] | | | | APPROVED BY J. H. [signature] | | | | DATE 3/85 | | | | |





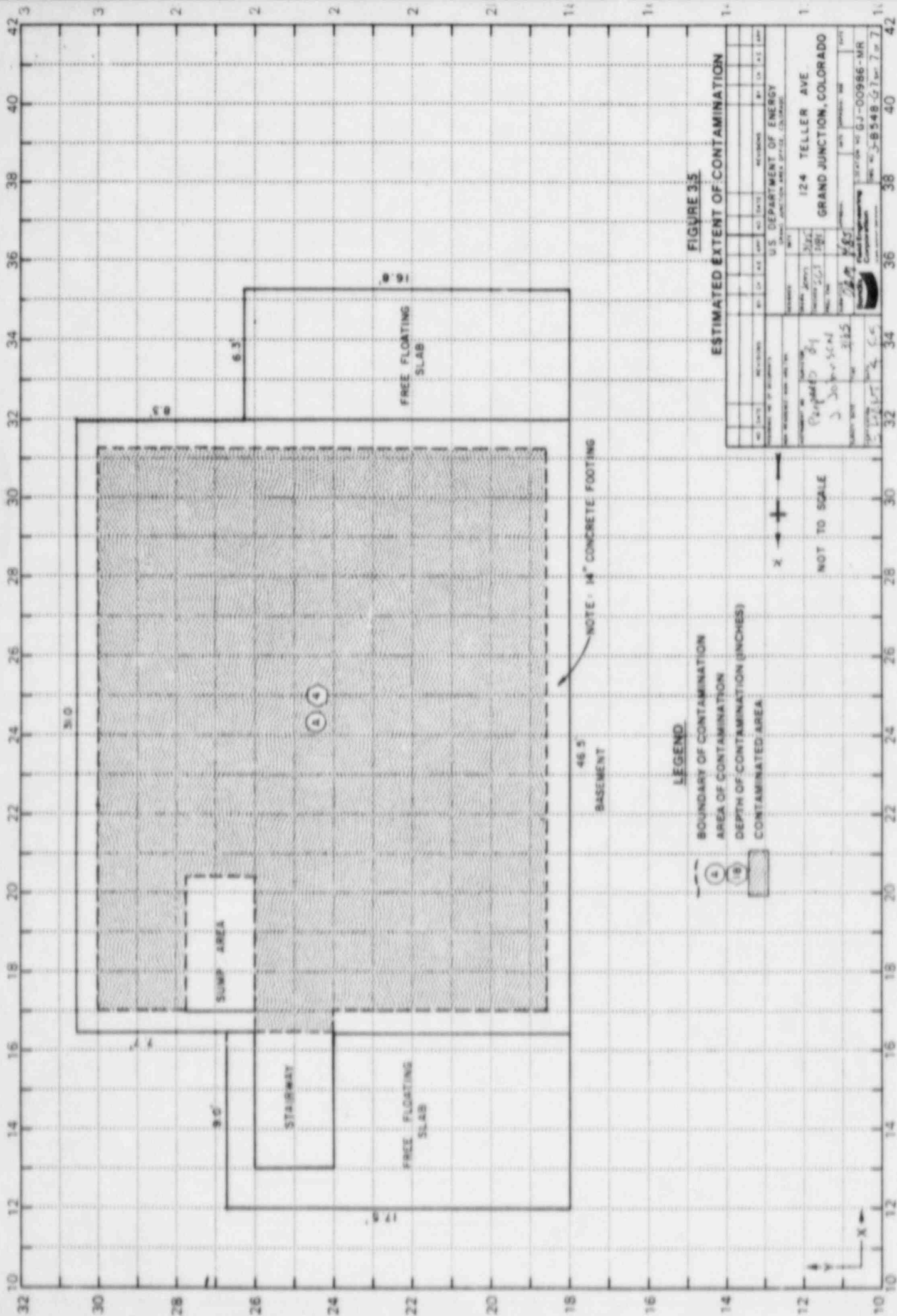


FIGURE 35

ESTIMATED EXTENT OF CONTAMINATION

| | | | | | | | | | | | | | | | |
|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|
| NO. 1475 | | NO. 1476 | | NO. 1477 | | NO. 1478 | | NO. 1479 | | NO. 1480 | | NO. 1481 | | NO. 1482 | |
| U.S. DEPARTMENT OF ENERGY | | U.S. DEPARTMENT OF ENERGY | | U.S. DEPARTMENT OF ENERGY | | U.S. DEPARTMENT OF ENERGY | | U.S. DEPARTMENT OF ENERGY | | U.S. DEPARTMENT OF ENERGY | | U.S. DEPARTMENT OF ENERGY | | U.S. DEPARTMENT OF ENERGY | |
| PROJECT NO. 1475 | | PROJECT NO. 1476 | | PROJECT NO. 1477 | | PROJECT NO. 1478 | | PROJECT NO. 1479 | | PROJECT NO. 1480 | | PROJECT NO. 1481 | | PROJECT NO. 1482 | |
| DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | |
| BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | |
| CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | |
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| 124 TELLER AVE. | | 124 TELLER AVE. | | 124 TELLER AVE. | | 124 TELLER AVE. | | 124 TELLER AVE. | | 124 TELLER AVE. | | 124 TELLER AVE. | | 124 TELLER AVE. | |
| GRAND JUNCTION, COLORADO | | GRAND JUNCTION, COLORADO | | GRAND JUNCTION, COLORADO | | GRAND JUNCTION, COLORADO | | GRAND JUNCTION, COLORADO | | GRAND JUNCTION, COLORADO | | GRAND JUNCTION, COLORADO | | GRAND JUNCTION, COLORADO | |
| PROJECT NO. 1475 | | PROJECT NO. 1476 | | PROJECT NO. 1477 | | PROJECT NO. 1478 | | PROJECT NO. 1479 | | PROJECT NO. 1480 | | PROJECT NO. 1481 | | PROJECT NO. 1482 | |
| DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | | DATE 12/1/81 | |
| BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | | BY J. L. HARRIS | |
| CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | | CHECKED BY J. L. HARRIS | |
| APPROVED BY J. L. HARRIS | | APPROVED BY J. L. HARRIS | | APPROVED BY J. L. HARRIS | | APPROVED BY J. L. HARRIS | | APPROVED BY J. L. HARRIS | | APPROVED BY J. L. HARRIS | | APPROVED BY J. L. HARRIS | | APPROVED BY J. L. HARRIS | |

LEGEND

- BOUNDARY OF CONTAMINATION
- AREA OF CONTAMINATION
- DEPTH OF CONTAMINATION (INCHES)
- CONTAMINATED AREA

NOT TO SCALE

3/85

DOE ID NO. GJ-00986-MR

Date 4-4-1985

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

Official Survey Report

Property Address 124 Yeller Avenue

Property Owner Delroy Charlesworth

Address of Owner (if different from above) _____

Report Prepared By Jay Johnson

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 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/CDH

J. Themelis, Mgr. UMTRA Proj. Off.

HIG = 32 uR/h
HOG = 34 uR/h

Bendix

**Field Engineering
Corporation**

Grand Junction, Colorado

P.O. Box 111
Grand Junction, CO 81501
Tel. (262) 511-1111

April 5, 1985

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

ATTN: Coleen Campbell

SUBJECT: GJ-00986-MR

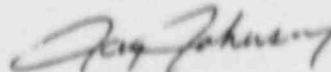
Dear Coleen:

Regarding the issues discussed at the Technical Review on Department of Energy (DOE) Identification (ID) number GJ-00986-MR. The areas requiring additional work or comments are as follows:

1. The adjacent property is 110 Teller Avenue. This property is owned by the same people that own 124 Teller Avenue. We do not show it to be included as of yet. A spill over form has been submitted.
2. The north and south parts of the house are on a slab with a stem wall. No holes could be drilled in these locations because of the concrete sidewalks around the base of the house. No elevated readings were found in these locations.
3. The stairs and the wall of the stairs were checked with additional deltas. Both had negative results.

Thank you for your time and cooperation. If you should have additional questions or comments you may reach me at 242-8621, extension 431.

Sincerely,



Jay Johnson
RSD Survey Team

JJ:pr

INTERNAL
MEMORANDUM

Bendix Field Engineering Corporation
Grand Junction Projects Office

Date: March 20, 1985

To: Files

From: Jay Johnson

Subject: Team Leader Notes - GJ-00986-RS

Owner: Delroy Charlesworth

Address: 124 Teller Avenue

Date: March 20, 1985

Team Members

J. Johnson
C. Adams
P. Hardy
J. Dickerson

C. Holmes
S. Southern
W. Heronema

Instruments

Scintillometers - C-3510, C-1180, C-1182- C-3942, C-3573, C-3956

The owner of this property also owns the property adjacent to this property (110 Teller Avenue). The homeowner requested that the adjacent property (110 Teller Avenue) be worked on the same time as this property (124 Teller Avenue).

This property includes a one-story home with a basement.

This property was scanned, no problems were observed.

The only involvement discovered is in the basement. The basement floor is chipped and cracked with tile covering the concrete. There is a 14-inch by 14-inch concrete wall which runs along the base of the basement wall.

The property owner was very friendly and cooperative.

Team Leader Notes
Jay Johnson
GJ-00986-RS
March 20, 1985
Page 2

There is an area of elevated readings by Teller Avenue. These readings are coming from a concrete slab on the adjacent property.

Two cores were performed in the basement. Under the basement slab, large pieces of concrete which apparently was used as a base for the slab, was discovered.

The property owner would also like to remove an old furnace if remedial action is performed on this property.

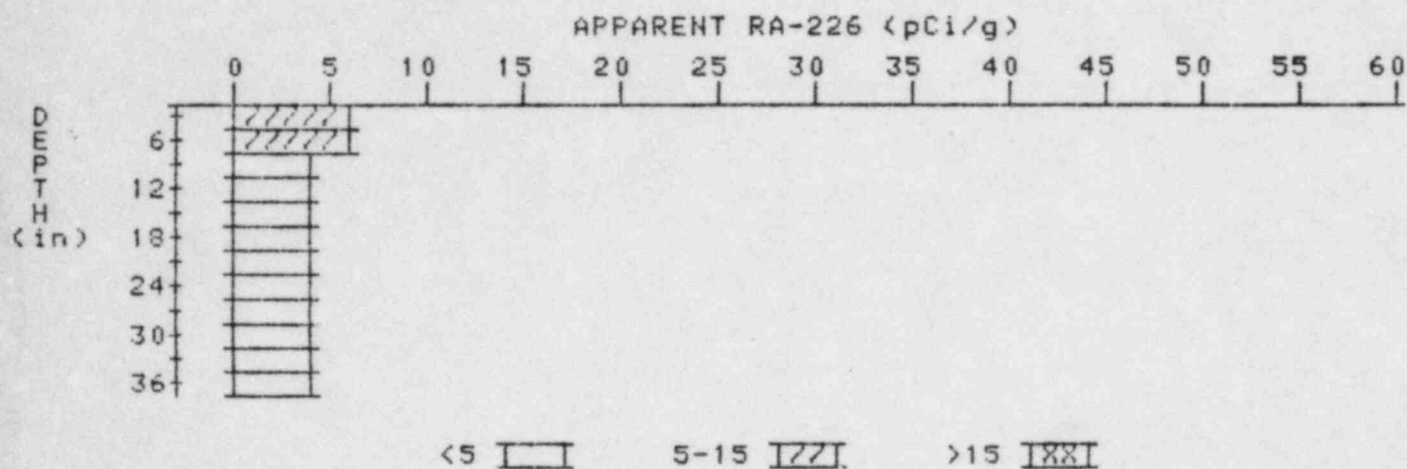
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

1

PROPERTY NUMBER: GJ-00786-RS

HOLE NUMBER: 1

LOCATION:



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 5.6 | 5.6 |
| 6 | 5.3 | 6.0 |
| 9 | 4.6 | 3.9 |
| 12 | 4.3 | 4.3 |
| 15 | 4.0 | 3.6 |
| 18 | 3.9 | 3.7 |
| 21 | 3.9 | 3.9 |
| 24 | 3.9 | 3.9 |
| 27 | 3.9 | 4.1 |
| 30 | 3.8 | 3.6 |
| 33 | 3.8 | 3.8 |
| 36 | 3.8 | 3.8 |

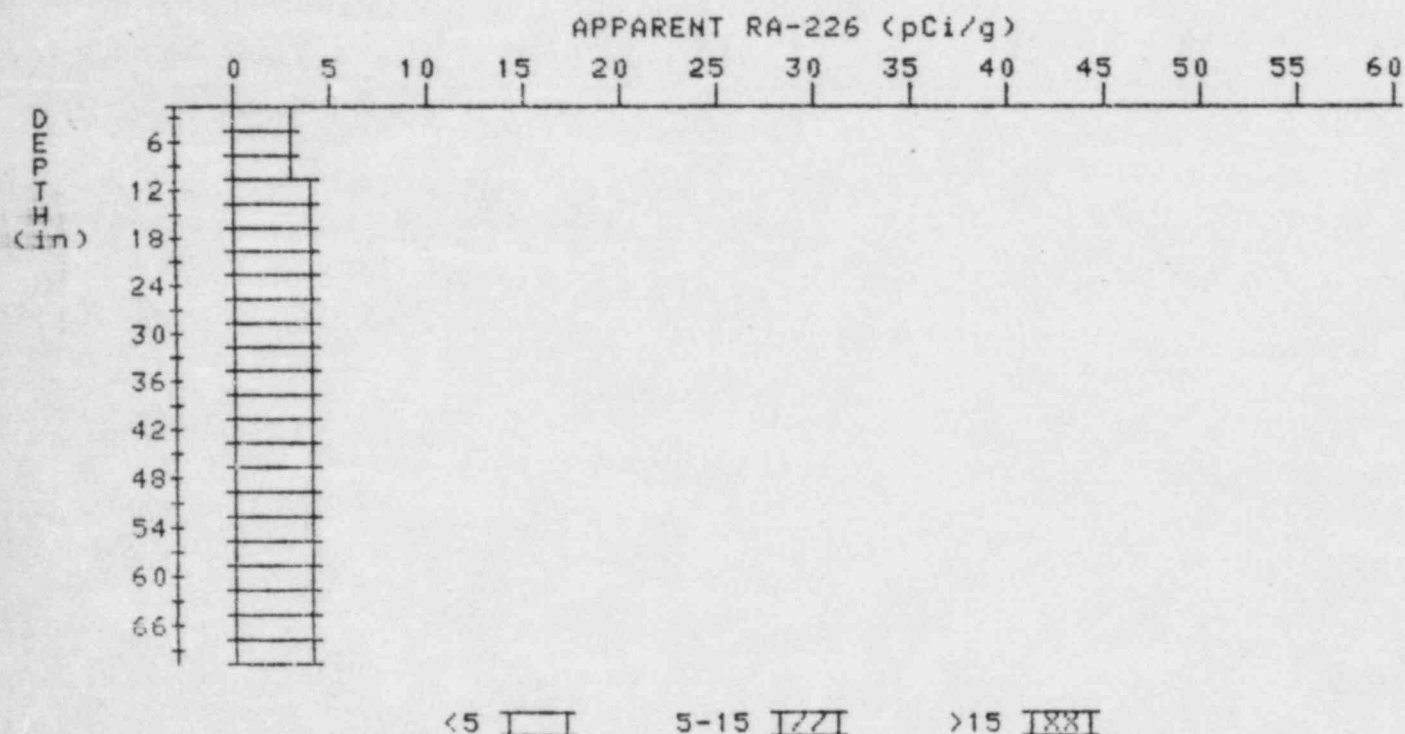
APPARENT RADIUM-226 CONCENTRATION DECONVOLUTION GRAPH

9

PROPERTY NUMBER: GJ-00986-RS

HOLE NUMBER: 9

LOCATION: 178235

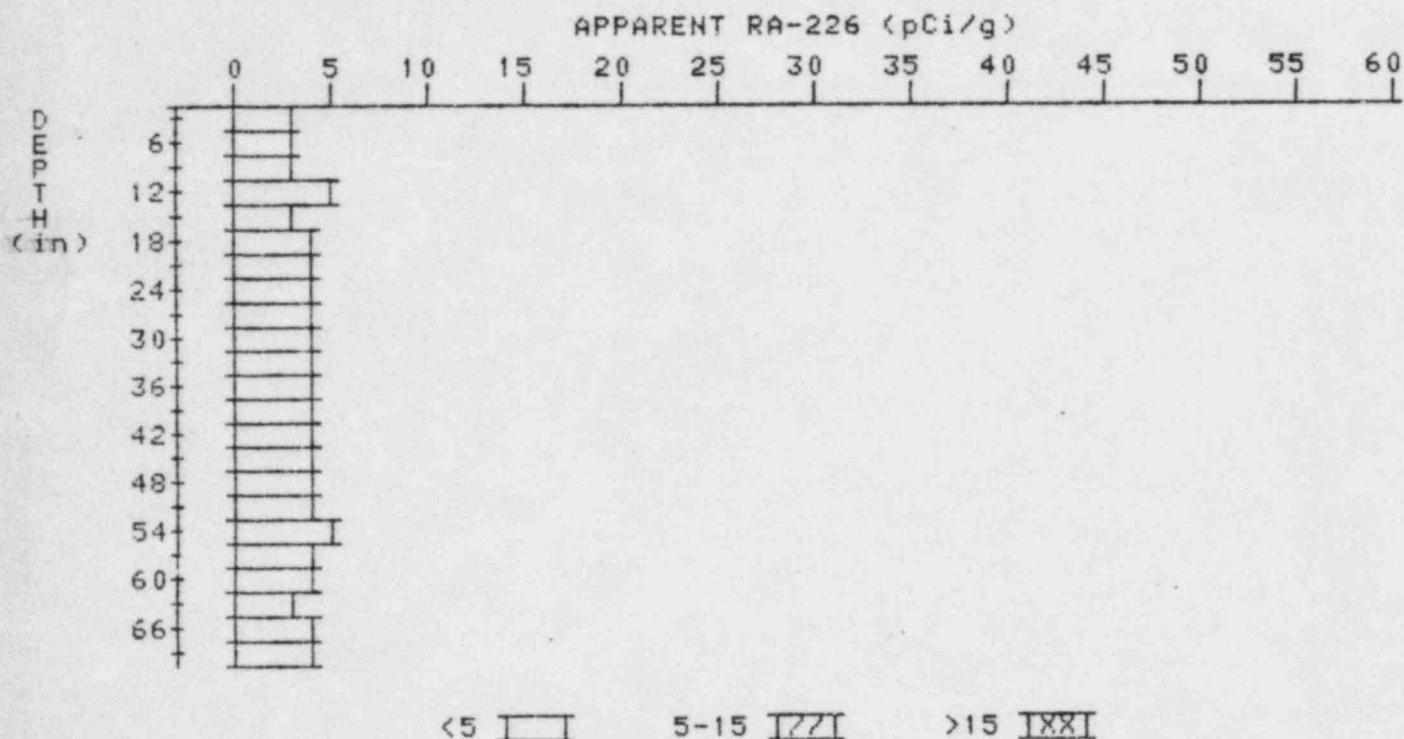


| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 2.5 | 2.5 |
| 6 | 2.8 | 3.0 |
| 9 | 3.0 | 2.6 |
| 12 | 3.4 | 3.8 |
| 15 | 3.6 | 3.6 |
| 18 | 3.8 | 4.0 |
| 21 | 3.9 | 3.9 |
| 24 | 4.0 | 4.0 |
| 27 | 4.1 | 4.3 |
| 30 | 4.1 | 4.1 |
| 33 | 4.1 | 4.3 |
| 36 | 4.0 | 3.6 |
| 39 | 4.1 | 4.5 |
| 42 | 4.0 | 3.6 |
| 45 | 4.1 | 4.5 |

| | | |
|----|-----|-----|
| 48 | 4.0 | 3.8 |
| 51 | 4.0 | 3.8 |
| 54 | 4.1 | 4.5 |
| 57 | 4.0 | 4.0 |
| 60 | 3.9 | 3.5 |
| 63 | 4.0 | 4.4 |
| 66 | 3.9 | 3.7 |
| 69 | 3.9 | 3.9 |

APPARENT RADIUM-226 CONCENTRATION 10 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-00986-RS
HOLE NUMBER: 10
LOCATION: 183250



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| ===== | ===== | ===== |
| 3 | 3.0 | 3.0 |
| 6 | 3.3 | 3.5 |
| 9 | 3.5 | 3.1 |
| 12 | 3.9 | 4.8 |
| 15 | 3.8 | 3.4 |
| 18 | 3.9 | 4.1 |
| 21 | 3.9 | 3.9 |
| 24 | 3.9 | 3.9 |
| 27 | 3.9 | 4.1 |
| 30 | 3.8 | 3.6 |
| 33 | 3.8 | 3.8 |
| 36 | 3.8 | 3.6 |
| 39 | 3.9 | 3.9 |
| 42 | 4.0 | 4.2 |
| 45 | 4.0 | 3.8 |

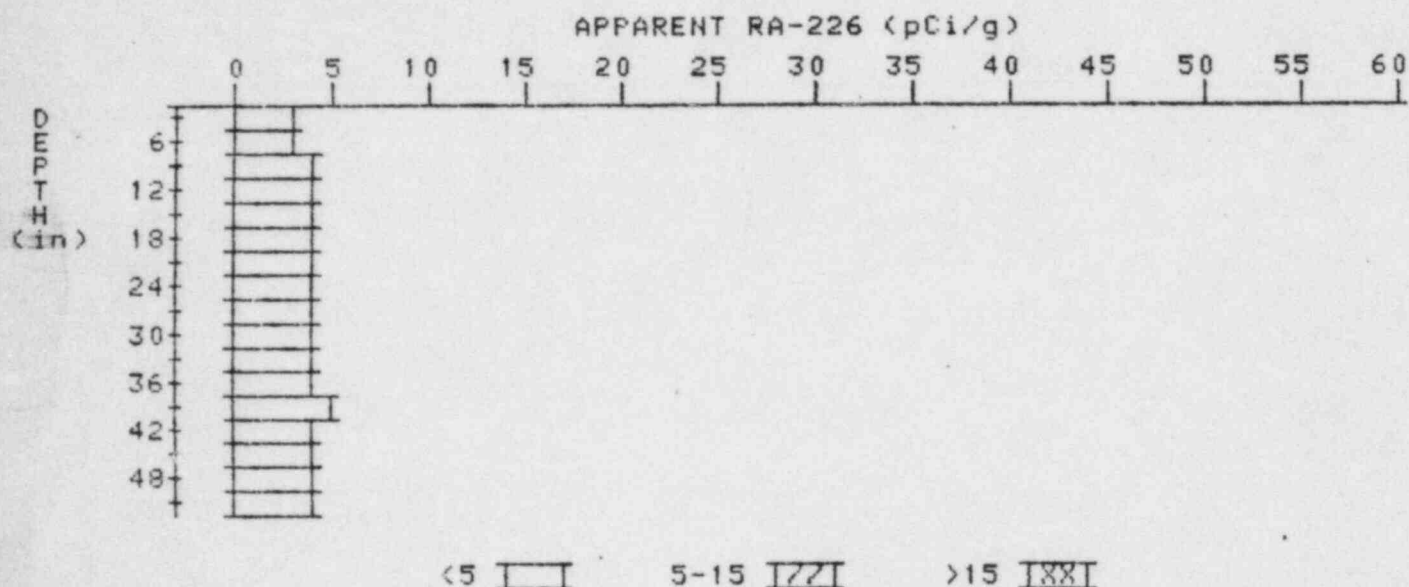
| | | |
|----|-----|-----|
| 48 | 4.1 | 4.3 |
| 51 | 4.1 | 3.9 |
| 54 | 4.2 | 4.6 |
| 57 | 4.1 | 3.9 |
| 60 | 4.1 | 4.5 |
| 63 | 3.9 | 3.4 |
| 66 | 4.0 | 4.2 |
| 69 | 4.0 | 4.0 |

APPARENT RADIUM-226 CONCENTRATION 11 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-00986-RS

HOLE NUMBER: 11

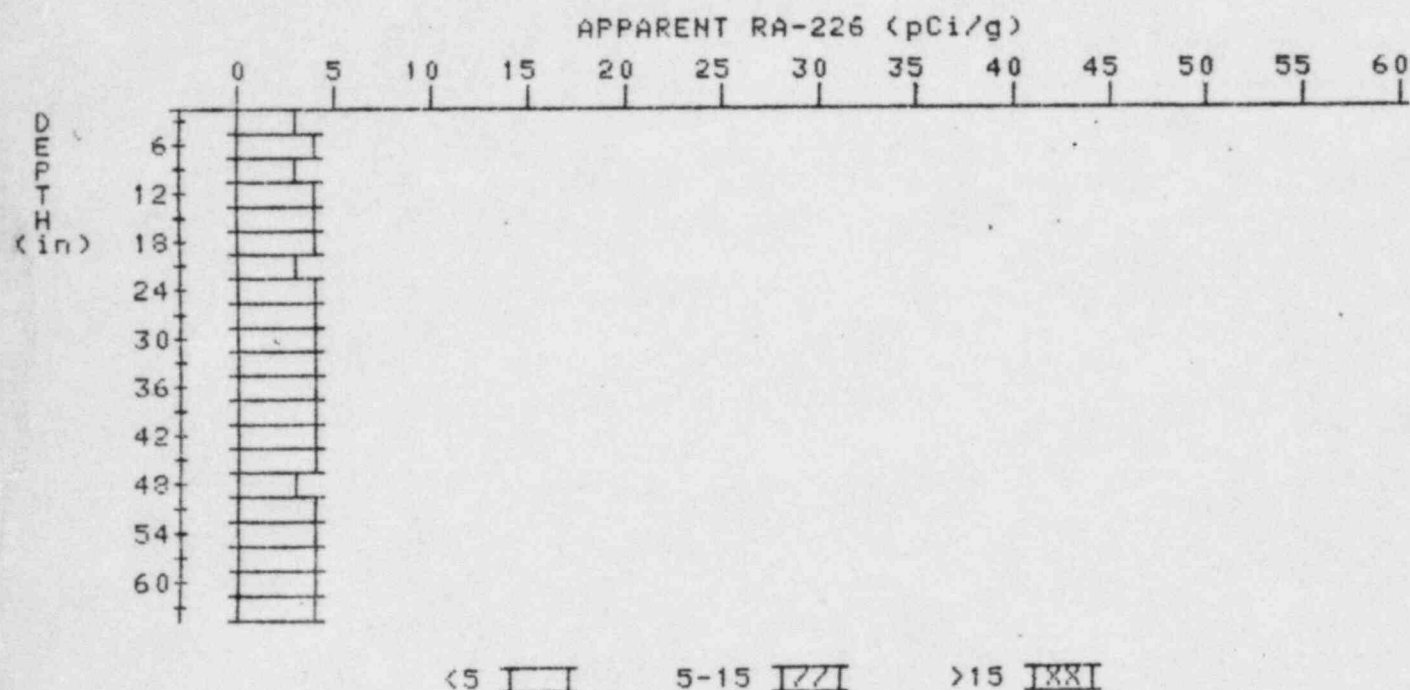
LOCATION: 204256



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.0 | 3.0 |
| 6 | 3.3 | 3.1 |
| 9 | 3.7 | 4.2 |
| 12 | 3.8 | 3.6 |
| 15 | 4.0 | 4.4 |
| 18 | 4.0 | 3.8 |
| 21 | 4.1 | 4.1 |
| 24 | 4.2 | 4.4 |
| 27 | 4.2 | 4.4 |
| 30 | 4.1 | 3.9 |
| 33 | 4.1 | 4.1 |
| 36 | 4.1 | 3.9 |
| 39 | 4.2 | 4.6 |
| 42 | 4.1 | 4.1 |
| 45 | 4.0 | 4.0 |
| 48 | 3.9 | 3.9 |
| 51 | 3.8 | 3.8 |

APPARENT RADIUM-226 CONCENTRATION 12 DECONVOLUTION GRAPH

PROPERTY NUMBER: GJ-00986-RS
HOLE NUMBER: 12
LOCATION: 231256



| Depth (in) | Apparent Radium-226 (pCi/g) Undeconvolved | Apparent Radium-226 (pCi/g) Deconvolved |
|---------------|--|--|
| 3 | 3.0 | 3.0 |
| 6 | 3.3 | 3.7 |
| 9 | 3.4 | 3.0 |
| 12 | 3.7 | 4.1 |
| 15 | 3.8 | 4.0 |
| 18 | 3.8 | 4.0 |
| 21 | 3.7 | 3.3 |
| 24 | 3.8 | 4.0 |
| 27 | 3.8 | 3.6 |
| 30 | 3.9 | 4.1 |
| 33 | 3.9 | 3.9 |
| 36 | 3.9 | 3.7 |
| 39 | 4.0 | 4.4 |
| 42 | 3.9 | 3.9 |
| 45 | 3.8 | 3.8 |
| 48 | 3.7 | 3.3 |
| 51 | 3.8 | 4.0 |

54
57
60
63

3.8
3.9
4.0
3.9

3.6
3.9
4.4
3.9