

DEPARTMENT OF ENERGY
ALBUQUERQUE OPERATIONS OFFICE
CONTRACT NO. DE-AC04-83AL18796

Draft Radiological and Engineering Assessment

Vicinity Property No. SLC 022

Remedial Actions
Contractor
for the
Uranium Mill Tailings
Remedial Actions
Project



MORRISON
KNUDSEN

B507100057 B50315
PDR WASTE PDR
WM-41

Vicinity Property No. SLC 022

DRAFT

THE RADIOLOGICAL AND ENGINEERING ASSESSMENT

AND FINAL DESIGN

FOR

SALT LAKE CITY PROPERTY

SL-022

March 13, 1985

PREPARED FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE

UNITED STATES DEPARTMENT OF ENERGY

PREPARED BY

MORRISON-KNUDSEN COMPANY, INC.

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

Property SL-022 is a commercial property located at 120 West 3300 South Street, Salt Lake City, UT.

1.2 Evaluation and Recommendation

1.2.1 Residual Radioactive Material Involvement

There are two exterior areas of contamination on this property.

1.2.2 Recommended Remedial Action Option

The recommended option is to remove the contaminated material.

1.2.3 Estimated Costs

The estimated cost for removal of the contaminated material and restoration of the property is \$8,150.00.

1.2.4 Schedule

The estimated duration of the remedial action effort is 5 to 7 days.

2.0 ENGINEERING FIELD SURVEY

2.1 Property Description

2.1.1 Property Use and Occupancy

Property SL-022 is a commercial property located at 120 West 3300 South Street and owned by West Temple Investment Company, Inc. The map in Figure 2.1 illustrates the property's vicinity location.

2.1.2 Legal Description

The legal description as recorded with the Salt Lake County Recorder's Office in Deed Book No. 1676 and 1677, Pages 140 and 54 follows:

Commencing at a point on the Lot line, South 89°53'45" West 107.07 feet from the Southeast corner of Lot 1, Block 34, Ten Acre Plat "A," Big Field Survey, and running thence South 89°53'45" West along the Lot line 170.75 feet; thence North 0°03'40" East parallel to the East Line of Lot 1, 363.0 feet; thence North 89°53'45" East 145.82 feet; thence South 0°03'40" west parallel to the East line of Lot 1, 177.5 feet; thence North 89°53'45" East 132 feet to the East line of Lot 1; thence South 0°03'40" West along the Lot line 65.5 feet; thence South 89°53'45" West parallel to the South Line of Lot 1, 110.52 feet; thence South 1°35' East 120.04 feet to the point of commencement.

Together with an 18.0-foot right of way adjoining the above described property on the West.

Beginning at the Southeast corner of Lot 1, Block 34, 10-Acre Plat "A," Big Field Survey, and running thence South 89°53'45" West 107.07 feet; thence North 1°35' West 120.04 feet; thence North 89°53'45" East 110.52 feet; thence South 120 feet to the point of beginning.

2.1.3 Bordering Properties

The lot is zoned Business-A, for business, office, retail establishments. It is located in a commercial area less than one mile east of the old Vitro mill tailings site. The property is bounded on the north by commercial property; on the east by West Temple Street; on the south by 3300 South Street; and on the west by commercial property.

2.2 Existing Facilities and Structures

2.2.1 Structures

There is one principal structure on the property and one deteriorated wood frame shed.

- o The principal structure is a concrete block building occupied by two tenants. A portion of the building floor is raised to dock level height, the floor system is concrete slab-on-grade.
- o The shed is of wood frame construction on concrete slab-on-grade floor. The shed is in a deteriorated and unsalvageable condition.

The balance of the property is partially paved, partially graveled, and overgrown with weeds and scrub trees.

2.2.2 Utilities

Utilities are serviced to the property as follows:

Electric power - from 3300 South and West Temple Streets

Telephone - from 3300 South and West Temple Streets

Water - from 3300 South and West Temple Streets

Gas - from West Temple Street

Sewer - from 3300 South Street

2.2.3 Site Plan and Survey Data

See Figure 2.2 for a site plan of the property. Property survey data and photos are presented in Table 2.1 and Figures 2.3 and 2.4.

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATA

GENERAL:

Facility Name: Astin-Weight Piano Company

Address: 120 West 3300 South Street

Owner: _____

Occupancy: Employees/Occupants (Full Time): 25 +/-

Employees/Occupants (Part Time): _____

Remarks: _____

PROPERTY DESCRIPTION:

Structure: (Identify) Office, sales, warehouse

: SQ FT 31,200 Levels One

: Construction Type Concrete block

: Foundation Concrete

Remarks: _____

Structure: (Identify) _____

: SQ FT _____ Levels _____

: Construction Type _____

: Foundation _____

Remarks: _____

Radiological and Engineering Assessment: Property SL-022

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATE

Facility Name: Astin-Weight Piano Company

PROPERTY DESCRIPTION:

Driveway/Access: Concrete: X Asphalt: _____ Gravel: _____

Remarks: _____

Sidewalks: Concrete: X Asphalt: _____

Remarks: _____

Fences: Chain link X Mesh _____ Wood _____

Remarks: North property line only

Grounds: Lawn None

Trees Chinese Elm

Shrubs None

Grading Level

Soil Type _____

Remarks _____

Radiological and Engineering Assessment: Property SL-022

TABLE 2.1

COMMERCIAL/INSTITUTIONAL

PROPERTY SURVEY DATA

Facility Name: Astin-Weight Piano Company

UTILITIES: Heating: Gas X Electric _____ Oil _____
Hot Water _____ Other _____

Remarks: _____

Air Conditioning: Elec. Heating Pump _____ Gas _____
Evap. Cooler X Other _____

Remarks: _____

Electric Line Location: 3300 South and West Temple Streets

Gas Line Location: West Temple Street

Water Line Location: 3300 South and West Temple Streets

Sewer Line Location: 3300 South Street

Telephone Line Location: 3300 South and West Temple Streets

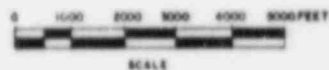
BUILDING CODES AND ZONING:

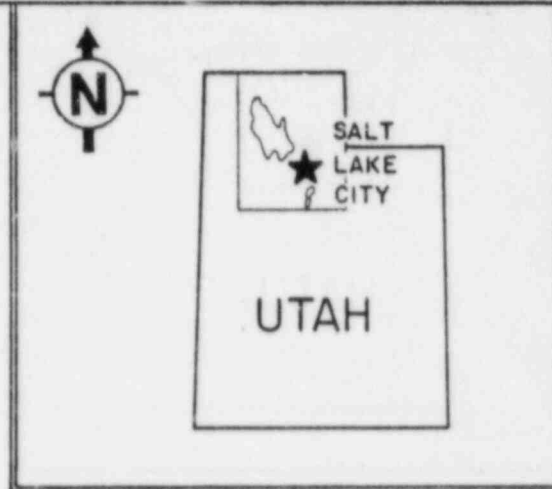
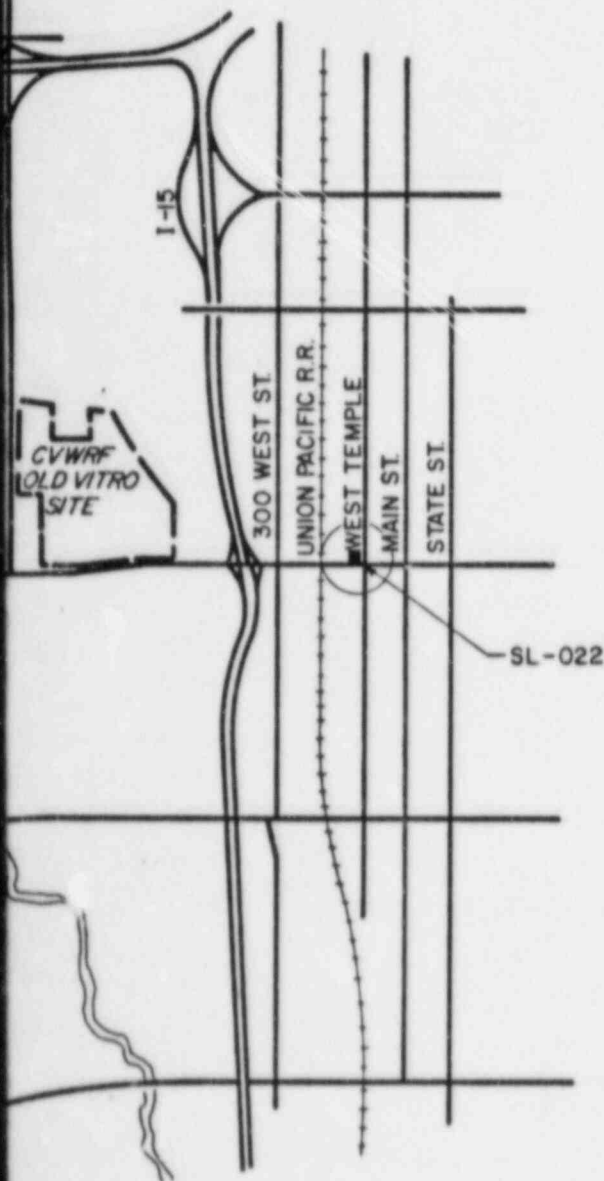
Building Code: UBC X BOCA

Remarks: _____

Zoning Jurisdiction: South Salt Lake City

Present Facility Zoning: Business-A





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NOTE:

PROPERTY LOCATED IN SALT LAKE COUNTY

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED BY: TLE
CHECKED: [Signature]
REVIEWED: [Signature]
RECOMMENDED: [Signature]
APPROVED: [Signature]

FIGURE 2.1

VICINITY MAP SL-022

SALT LAKE COUNTY, UTAH
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR	NR	NR	NR	



**MORRISON
KNUDSEN**

PROJECT NO.

DE-ACO4-83AL18796

DRAWING NO.

SL-022-005

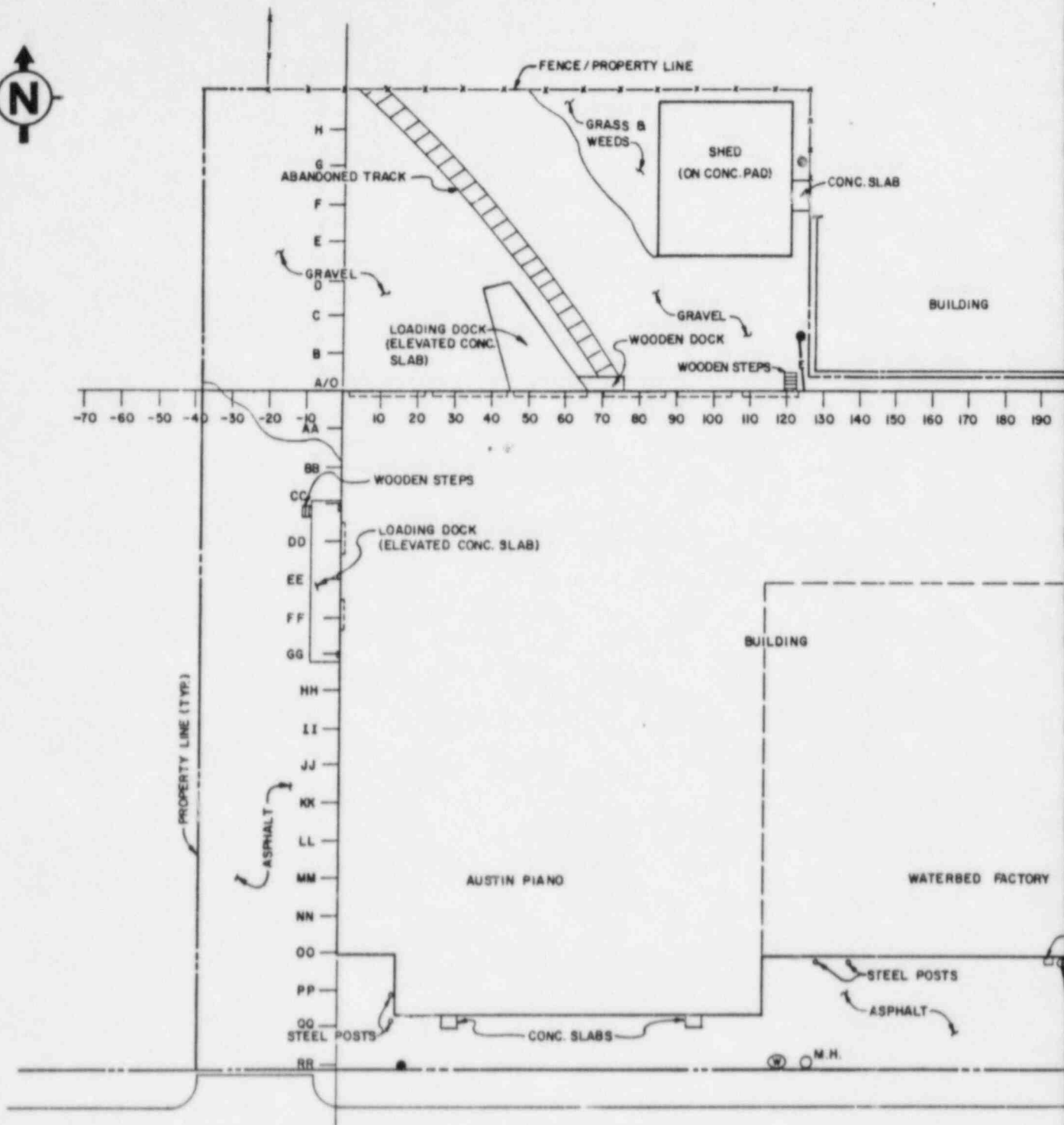
REV.

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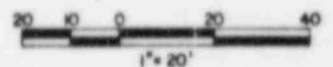
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3-85 FINAL REA SUBMITTAL

BY	BY	DATE	DATE	DATE	DATE
BT	BT	LOE	OH	SH	005



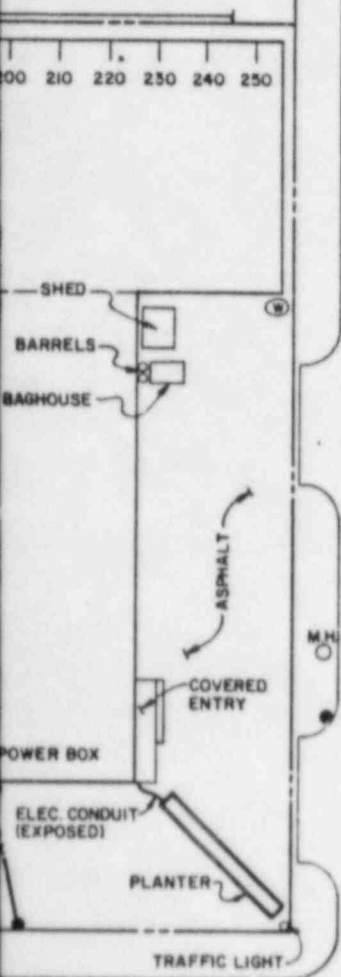
3300 SOUTH STREET



LEGEND

— W —	WATER LINE
— G —	GAS LINE
— GM —	GAS MAIN
— S —	SEWER LINE
— SM —	SEWER MAIN
— STM —	STORM SEWER
— E —	ELECTRICAL LINE
— T —	TELEPHONE LINE
— TV —	CABLE TV
— — —	PROPERTY LINE
— x — x — x —	FENCE LINE
⊗ G, W or E	METER
⊗ G or W	VALVE
●	PROPERTY PIN
●	POWER POLE

NOTE: OVERHEAD SERVICE DENOTED BY SOLID LINE.
UNDERGROUND SERVICE DENOTED BY DASHED LINE.



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ALBUQUERQUE, NEW MEXICO

FIGURE 2.2

SITE PLAN SL-022

SALT LAKE COUNTY, UTAH

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED BY GJW
CHECKED
REVIEWED
RECOMMENDED
APPROVED

NR

NR

NR

PROJECT NO.

DE-AC04-83AL18796

DRAWING NO.

SL-022-010

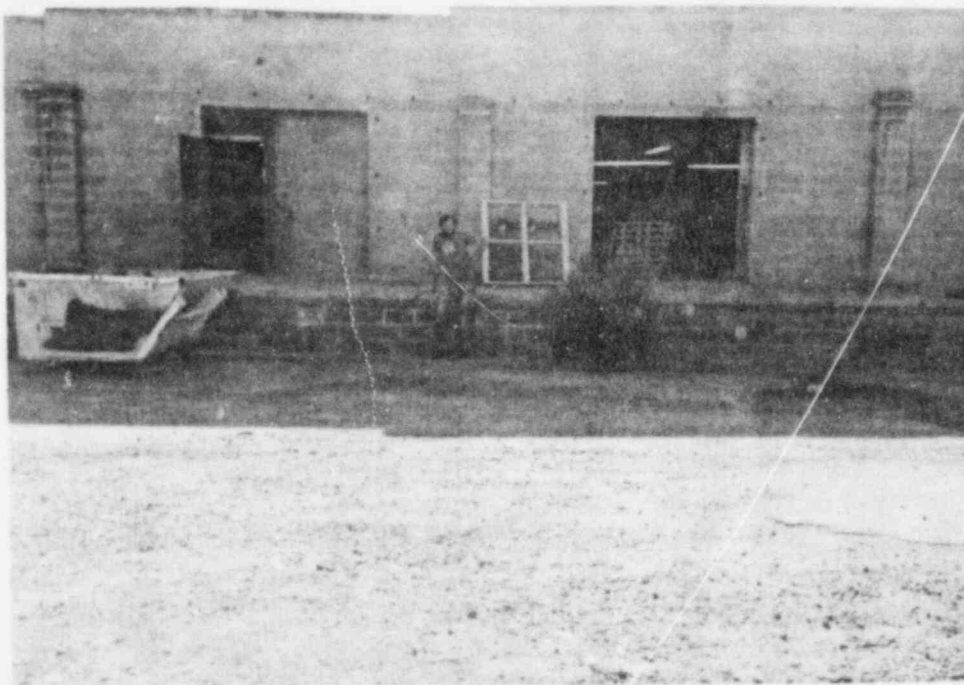
REV.

A



MORRISON
KNUDSEN

51-85	FINAL REA SUBMITTAL	GJW	WGP	NH	HRB	—
DATE	REVISIONS	DRAWN BY	CHECKED BY	APPROVED LGE	APPROVED SH	PROJ. ENG. EWB



West Side of Property Looking East

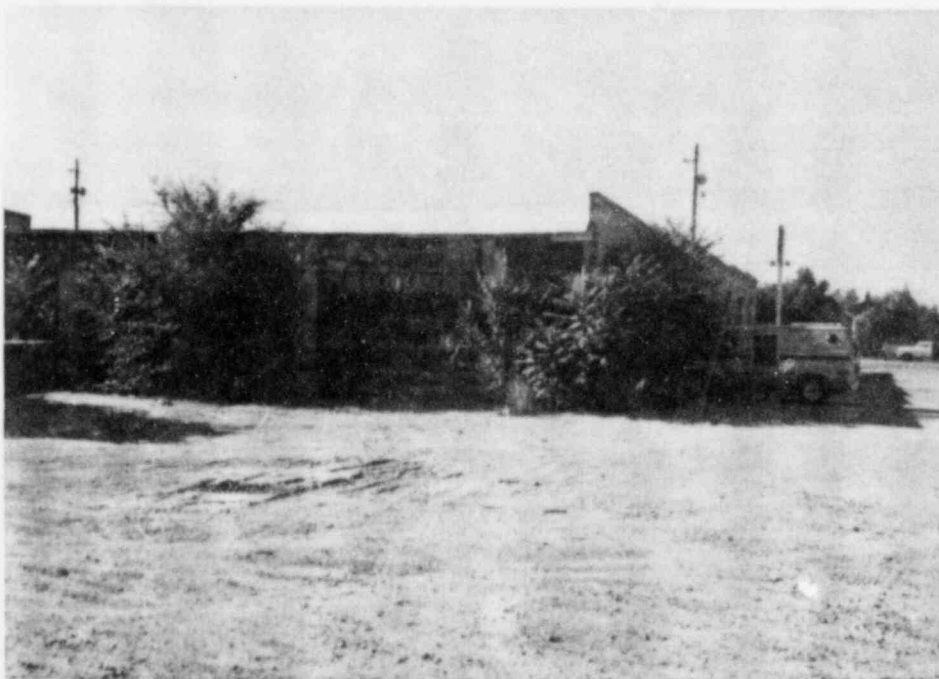


West Side of Property Looking South

Figure 2.3 Property Photos



North Side of Property Looking Southeast



North Side of Property Looking South

Figure 2.4 Property Photos

3.0 RADIOLOGICAL SURVEY AND ASSESSMENT

3.1 Gamma Exposure Rate Survey

3.1.1 Survey Method

Outdoor and indoor gamma surveys were conducted in accordance with the RAC Procedure 019. These surveys were conducted over the entire property, with particular attention to the areas identified in the inclusion survey (Results of the Radiological Survey at SL-022, ORNL, March 1984), and in other areas as described in this document.

3.1.2 Survey Results

Surface gamma readings on the property range from 13 to 83 micro R/hr (Table 3.1). This may be compared with the background for the Salt Lake City site of 14 micro R/hr.

Indoor surface gamma readings were not taken, as the inclusion survey reported that no contamination was present in or under the structures.

3.2 Borehole Survey

3.2.1 Survey Method

A gasoline-powered hand auger was used to drill 4-inch diameter holes in and around the regions identified as contaminated during the gamma survey. The holes were surveyed in compliance with the RAC UMTRA Procedure 018.

3.2.2 Survey Results

Contamination was found in 5 of the 9 outdoor holes augered. The location and depth of the contamination is described in Table 3.2 and is shown in Figure 3.1.

3.3 Radon/Radon Daughter Survey

No radon/radon daughter surveys were performed inside buildings at the property, since the inclusion survey reported that no contamination is present in or under the structures.

The field will perform a radon/radon daughter survey and will advise if a potential problem exists.

3.4 Estimated Extent of Contamination

There are two areas of contamination on SL-022. These areas agree with those reported on the inclusion survey.

Area A (Figure 3.1) includes the loading dock on the west side of the building. This area is contaminated to 30 inches. Area B is contaminated to a depth of 36 inches.

Table 3.1
OUTDOOR GAMMA SCREENING
Property SL-022

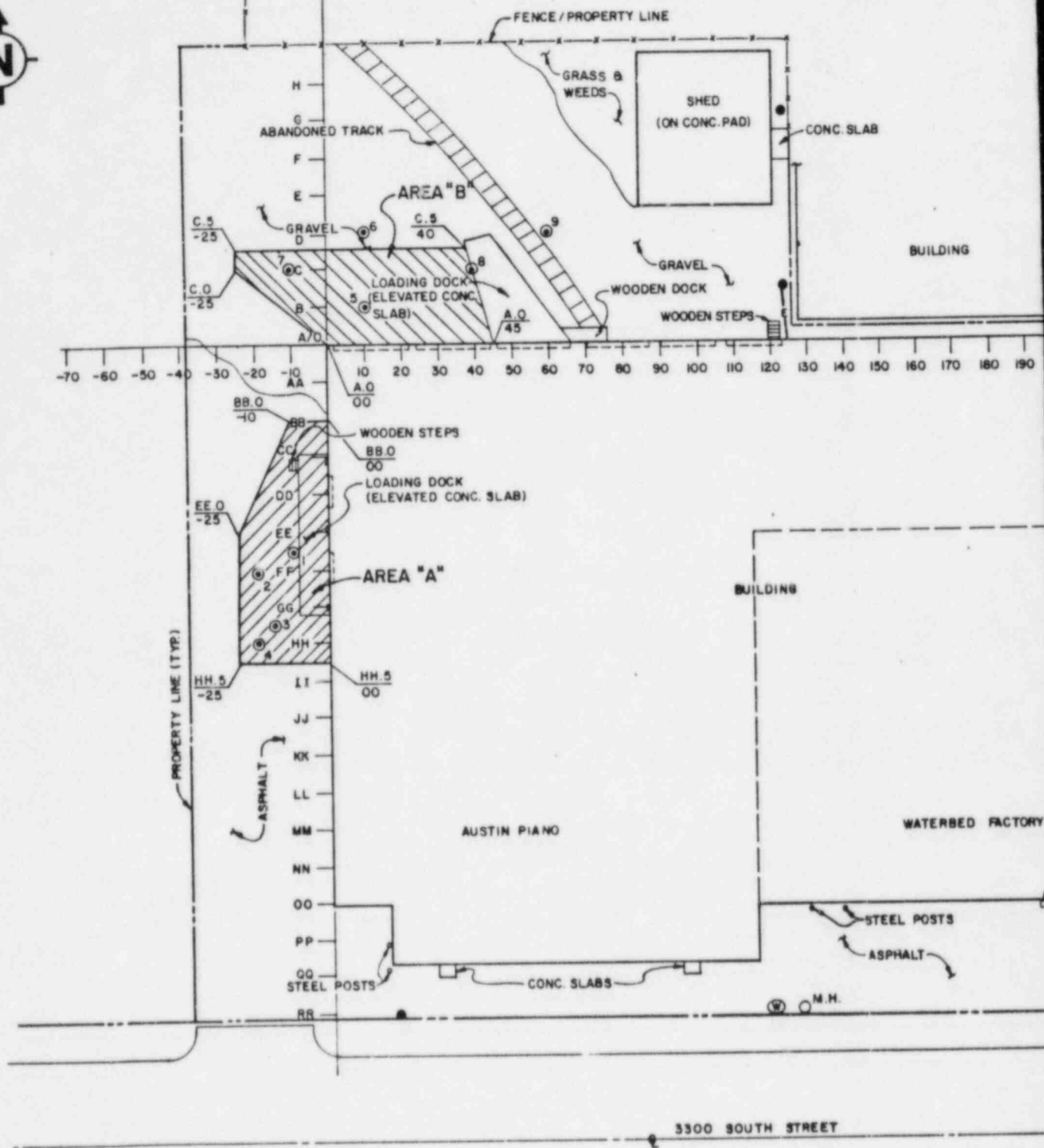
LOCATION	MICRO R/hr
AA+00	13
AA-10	17
BB+00	14
BB-10	15
CC-20	14
CC-10	65
CC+00	70
DD+00	50
DD-10	80
DD-20	16
EE-20	19
EE-10	70
EE+00	85
FF+00	33
FF-10	75
FF-20	17
GG-20	16
GG-10	65
GG+00	60
HH+00	24
HH-10	23
C+00	20
B+40	16
B+30	20
B+20	41
B+10	33
B+00	18

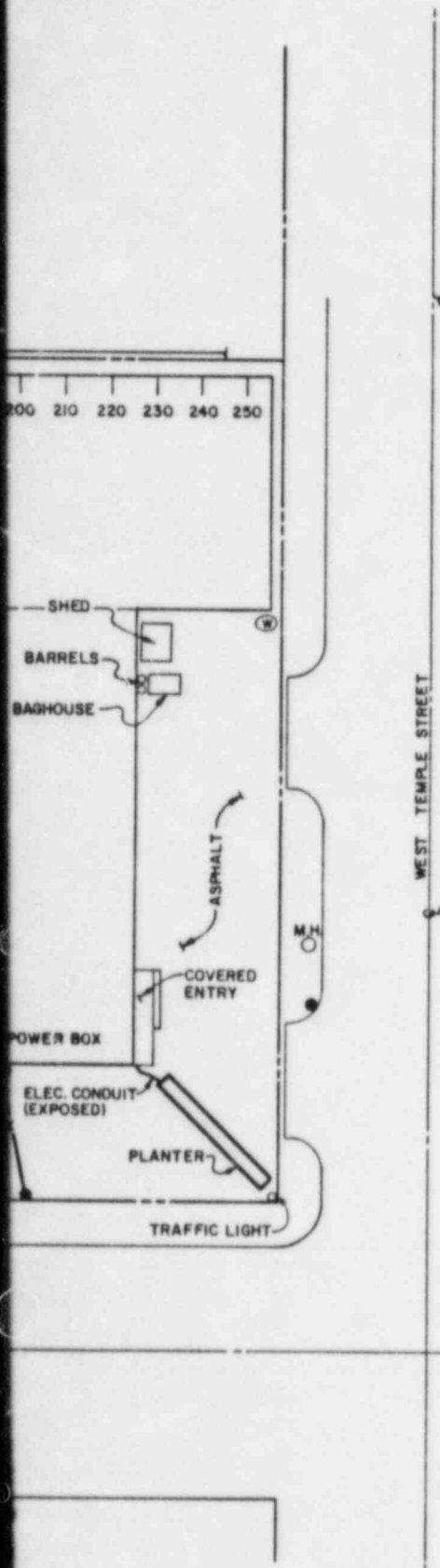
Background = 14 ± 4.2 micro R/hr

The outdoor gamma scan was performed on the intersection of grid lines. All locations are at the letter designated plus zero (i.e., AA+00 is AA+0,+00; AA-10 is AA+0,-10).

Table 3.2
BOREHOLE SURVEY
Property SL-022

HOLE	LOCATION	CONTAMINATION DEPTH
1	EE+5,-10	0-30"
2	FF+0,-20	--
3	GG+5,-15	0-24"
4	HH+0,-20	--
5	B+0,+10	0-24"
6	D+0,+10	--
7	C+0,-10	0-24"
8	C+0,+40	0-36"
9	D+0,+60	--





LEGEND

— W —	WATER LINE
— G —	GAS LINE
— GM —	GAS MAIN
— S —	SEWER LINE
— SM —	SEWER MAIN
— STM —	STORM SEWER
— E —	ELECTRICAL LINE
— T —	TELEPHONE LINE
— TV —	CABLE TV
— — —	PROPERTY LINE
— x — x — x —	FENCE LINE
⊙ G, W or E	METER
⊗ G or W	VALVE
●	PROPERTY PIN
●	POWER POLE

NOTE: OVERHEAD SERVICE DENOTED BY SOLID LINE.
UNDERGROUND SERVICE DENOTED BY DASHED LINE.

⊙ AUGER HOLE DESIGNATION

ESTIMATED DEPTH OF CONTAMINATION

	30"
	36"

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U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

FIGURE 3.1

RADIOLOGICAL SURVEY DATA SL-022

SALT LAKE COUNTY, UTAH
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED/DRAWN
GJW
CHECKED
REVIEWED
RECOMMENDED
APPROVED

NR

DATE DOE PROJECT MANAGER

NR

DATE DOE PROJECT ENGINEER

NR

PROJECT NO.

DE-AC04-83AL18796

DRAWING NO.

SL-022-015

REV. A



MORRISON
KNUDSEN

31-85 FINAL REA SUBMITTAL

GJW

DATE REVISIONS

DESIGNED BY CHECKED BY APPROVED BY DATE

4.0 ENGINEERING ASSESSMENT

Engineering options were formulated and evaluated based on the radiological and engineering assessment for this property. Factors forming the basis of the evaluation were: the extent and location of the contamination, construction costs, and required demolition and constructibility for the various options. Results of the evaluation are detailed below.

4.1 Evaluation of Options

4.1.1 Options

Two options were evaluated for property SL-022:

Option 1 - No action should be taken.

Option 2 - Complete decontamination of the property including retrieval of the contaminated material and restoration of the property to a clean condition.

Decontamination and restoration will proceed as follows:

- o The loading dock on the west side of the building will be demolished and removed.
- o Excavate and remove contaminated soil to the depths indicated on Figure 4.1.
- o Backfill with clean common fill.
- o Repave loading dock area. On the north side of the building, add 2 inches of gravel surfacing.

NOTE: Per request of the owner (see Appendix B) the loading dock will not be replaced.

Existing utilities should pose no safety problems to the subcontractor. However, special care should be exercised during excavation and backfill operations to protect existing underground utilities during the remedial work.

The property occupants will not require relocation during the remedial action on this property.

4.1.2 Costs

Estimated costs for the activities associated with Option 2 are detailed in Table 4.1. Costs include labor, insurance, material, equipment, supplies, overhead, profit, and contingency. All costs are listed in 1985 dollars. It is anticipated that the time required for the subcontractor to complete the work will be 5 to 7 days, based on fair weather conditions.

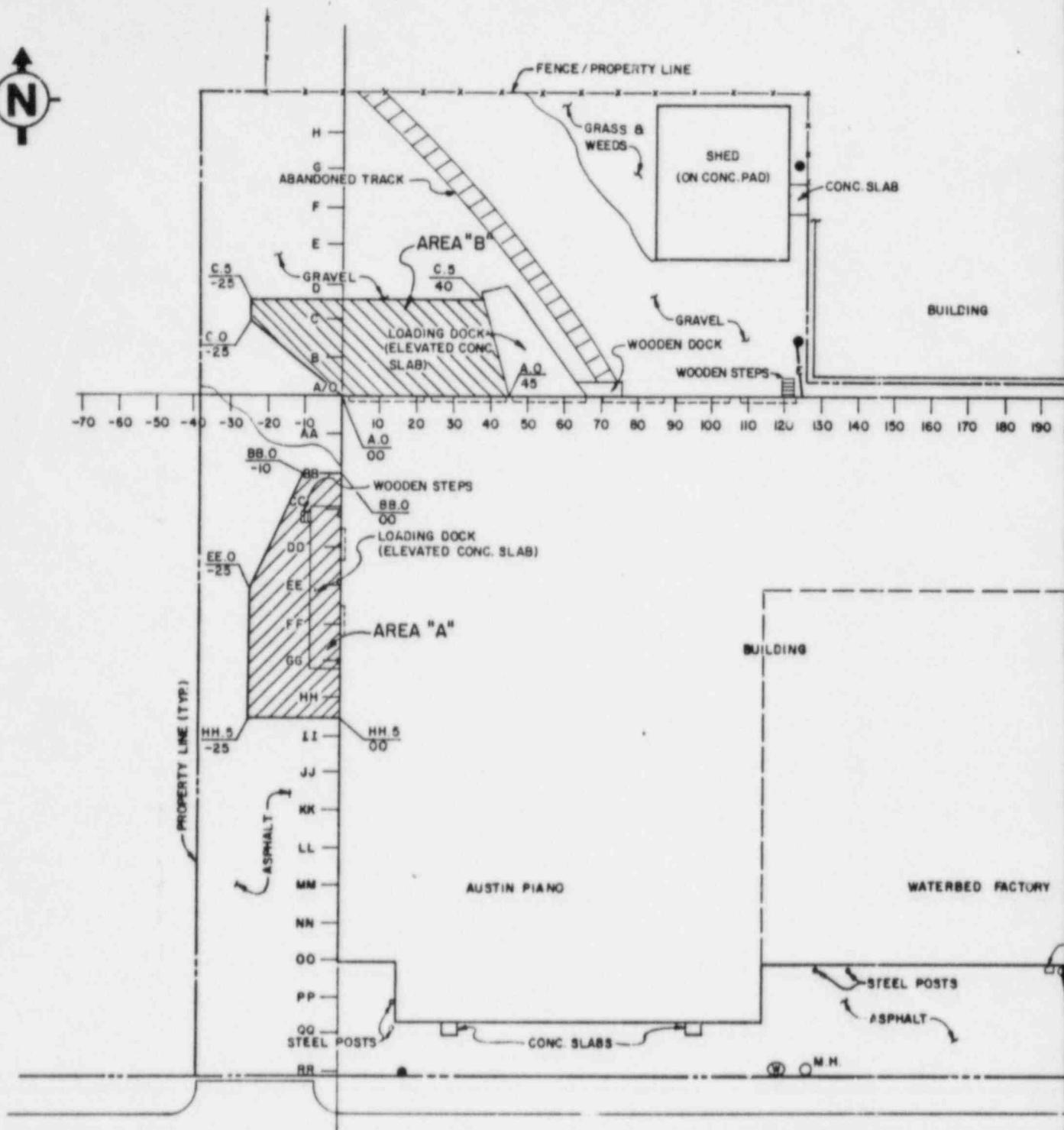
4.2 Recommendation

The limited cost and amount of remedial action work precluded evaluating any more than these two options. The results of the radiological assessment concluded that contamination levels on the property exceeded EPA guidelines. Therefore, based on these guidelines, it is recommended that Option 2, decontamination of the property, be pursued. The total estimated cost for Option 2 is \$8,150.00.

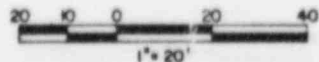
Table 4.1
OPTION 2 COSTS

Activity	Unit Price	Quantity	Estimated Cost
Remove asphalt paving	.20	150 sy	30.00
Demolish and remove loading dock	LS	1	1,600.00
Excavation (machine)	3.40	270 cy	920.00
Backfill (machine)	7.50	225 cy	1,690.00
Gravel base	13.05	13 cy	170.00
Asphalt paving	6.00	155 sy	930.00
Gravel surfacing	24.00	24 cy	580.00

Subtotal	5,920.00
5% Contractor's Contingency	300.00
20% Overhead & Profit	<u>1,180.00</u>
Subtotal	7,400.00
10% Engineer's Contingency	<u>740.00</u>
Total	8,150.00



3300 SOUTH STREET



LEGEND

— W —	WATER LINE
— G —	GAS LINE
— GM —	GAS MAIN
— S —	SEWER LINE
— SM —	SEWER MAIN
— STM —	STORM SEWER
— E —	ELECTRICAL LINE
— T —	TELEPHONE LINE
— TV —	CABLE TV
— — —	PROPERTY LINE
— X — X — X —	FENCE LINE
⊙ G, W or E	METER
⊗ G or W	VALVE
⊙	PROPERTY PIN
●	POWER POLE

NOTE: OVERHEAD SERVICE DENOTED BY SOLID LINE.
UNDERGROUND SERVICE DENOTED BY DASHED LINE.

NOTES:

- THE LATEST REVISION OF THE FOLLOWING TECHNICAL SPECIFICATIONS APPLY TO THE REMEDIAL ACTION WORK REQUIRED FOR PROPERTY NO. SL-022.

SECTION 02050
DEMOLITION

SECTION 02110
CLEARING AND GRUBBING

SECTION 02130
CONTAMINATED MATERIAL REMOVAL

SECTION 02200
EXCAVATION AND BACKFILL

SECTION 02500
PAVING AND SURFACING

- UTILITY LOCATIONS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS SHALL BE DETERMINED BY THE SUBCONTRACTOR PRIOR TO START OF CONSTRUCTION.

- THE EXCAVATION LIMITS AND DEPTHS ARE BASED ON A LIMITED NUMBER OF BORINGS TAKEN DURING THE RADIOLOGICAL SURVEYS OF THIS PROPERTY. ADDITIONAL RADIOLOGICAL SURVEYS PERFORMED DURING REMEDIAL ACTION MAY REQUIRE MORE OR LESS EXCAVATION TO BE TAKEN FROM THE DESIGNATED AREAS. ALL CHANGES TO THE LIMITS AND DEPTHS OF EXCAVATION AS SHOWN ON THE DESIGN DRAWINGS SHALL BE AS DIRECTED BY THE CONTRACTORS REPRESENTATIVE.

SCOPE OF WORK:

AREA "A"

- DEMOLISH AND REMOVE LOADING DOCK.
- REMOVE ASPHALT PAVING.
- EXCAVATE AND REMOVE CONTAMINATED SOIL TO A DEPTH OF 30 INCHES.
- PLACE AND COMPACT COMMON FILL.
- PLACE AND COMPACT 6 INCHES OF AGGREGATE BASE COURSE.
- REPAVE AREA WITH 2 INCHES OF ASPHALT PAVING.

AREA "B"

- EXCAVATE AND REMOVE CONTAMINATED SOIL TO A DEPTH OF 36 INCHES.
- PLACE AND COMPACT COMMON FILL.
- PLACE AND COMPACT 4 INCHES OF AGGREGATE BASE COURSE.
- PLACE 2 INCHES OF GRAVEL SURFACING.

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U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

FIGURE 4.1

EXCAVATION & RESTORATION PLAN SL-022

SALT LAKE COUNTY, UTAH
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DESIGNED	BY	GJW
CHECKED	BY	VCD
REVIEWED	BY	VCD
RECOMMENDED	BY	VCD
APPROVED	BY	NR

DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
	NR		NR	



MORRISON
KNUDSEN

PROJECT NO.

DE-AC04-83AL18796

DRAWING NO.

SL-022-020

REV. A

3-1-85 FINAL REA SUBMITTAL

DATE REVISIONS

BY	BY	BY	BY	BY	BY
GJW	VCD	VCD	VCD	VCD	VCD
DRN	CHK	APP	APP	PRJ	APP
BY	BY	BY	BY	BY	BY

5.0 TECHNICAL SPECIFICATIONS

Technical specifications applicable to this property are indexed in Table 5.1 . Specifications previously approved by the Department of Energy (DOE) are noted in the table. Also listed are specifications not previously submitted to the DOE which require approval. The text for these additional specifications follow the table.

Table 5.1
INDEX OF TECHNICAL SPECIFICATIONS

Description		Specifications Previously Approved	Specifications Requiring DOE Approval
SECTION 02050	DEMOLITION	X	
SECTION 02110	CLEARING AND GRUBBING	X	
SECTION 02130	CONTAMINATED MATERIAL REMOVAL	X	
SECTION 02200	EXCAVATION AND BACKFILL	X	
SECTION 02500	PAVING AND SURFACING	X	

6.0 CONSTRUCTION DRAWINGS

Listed below is an index of the construction drawings required for remedial action on this property.

<u>Drawing Number</u>	<u>Drawing Title</u>
SL-022-020	Excavation & Restoration Plan SL-022

APPENDIX A
SURVEY DATA LOGS

BOREHOLE LOG

 LOGGING CREW: MANSHIP/BLACK

 SHEET 1 OF 4 PAGE 1

 DATE: Sept 9, 84

 PROPERTY ID: SL-022 Austin/Wright

 INSTRUMENT ID NO. 26511 / 015812

AREA: _____

NOTES: 1. ALL HOLES ARE 4"DIA. UNLESS OTHERWISE NOTED.
 2. RECORD UNUSUAL CONDITIONS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND DEPTH, CASING TYPE AND THICKNESS IF USED, CONCRETE CORES AND THICKNESS, OBSTRUCTIONS, UTILITIES, ETC., IN THE REMARKS SECTION.

EE.5-10
FF-20
GG.5-15
HH-20

HOLE ID: <u>SL-022-1</u>	HOLE ID: <u>SL-022-2</u>	HOLE ID: <u>SL-022-3</u>	HOLE ID: <u>SL-022-4</u>
TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____
TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____
SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____

DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	<u>21503</u>	0"	<u>2522</u>	0"	<u>5521</u>	0"	<u>1737^{RN} 2189</u>
6"	<u>34512</u>	6"	<u>1881</u>	6"	<u>16654</u>	6"	<u>3116^{RN} 2278</u>
12"	<u>38315</u>	12"	<u>1898</u>	12"	<u>14780</u>	12"	<u>2570</u>
18"	<u>13029</u>	18"	<u>2242</u>	18"	<u>4490</u>	18"	<u>2189</u>
24"	<u>4932</u>	24"	<u>2296</u>	24"	<u>2799</u>	24"	<u>2278</u>
30"	<u>3562</u>	30"		30"	<u>2768</u>	30"	
36"	<u>3140</u>	36"		36"		36"	
42"	<u>2921</u>	42"		42"		42"	
48"	<u>2733</u>	48"		48"		48"	
54"	<u>2782</u>	54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

 REMARKS: _____

BOREHOLE LOG

LOGGING CREW:

Mauship / Blach

SHEET

2

OF

4

PAGE

2

DATE:

8/9/84

PROPERTY ID:

5L-022 Austin / Wright

INSTRUMENT ID NO.

26511 / 015812

AREA:

NOTES: 1. ALL HOLES ARE 4" DIA. UNLESS OTHERWISE NOTED.

2. RECORD UNUSUAL CONDITIONS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND DEPTH, CASING TYPE AND THICKNESS IF USED, CONCRETE CORES AND THICKNESS, OBSTRUCTIONS, UTILITIES, ETC., IN THE REMARKS SECTION.

B+10
D+10
C-10
C+40

HOLE ID: <u>5L-022-5</u>		HOLE ID: <u>5L-022-6</u>		HOLE ID: <u>5L-022-7</u>		HOLE ID: <u>5L-022-8</u>	
TIME DRILLED: _____		TIME DRILLED: _____		TIME DRILLED: _____		TIME DRILLED: _____	
TIME LOGGED: _____		TIME LOGGED: _____		TIME LOGGED: _____		TIME LOGGED: _____	
SOIL TYPE: _____		SOIL TYPE: _____		SOIL TYPE: _____		SOIL TYPE: _____	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	<u>8785</u>	0"	<u>1684</u>	0"	<u>2348</u>	0"	<u>4218</u>
6"	<u>32977</u>	6"	<u>2774</u>	6"	<u>8630</u>	6"	<u>10312</u>
12"	<u>27767</u>	12"	<u>2845</u>	12"	<u>11148</u>	12"	<u>21422</u>
18"	<u>7384</u>	18"	<u>2495</u>	18"	<u>5165</u>	18"	<u>22452</u>
24"	<u>3600</u>	24"	<u>2446</u>	24"	<u>3207</u>	24"	<u>14329</u>
30"	<u>2312</u>	30"		30"	<u>2917</u>	30"	<u>6683</u>
36"	<u>2449</u>	36"		36"		36"	<u>2945</u>
42"	<u>2452</u>	42"		42"		42"	<u>2414</u>
48"	<u>2305</u>	48"		48"		48"	<u>2419</u>
54"		54"		54"		54"	<u>2299</u>
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

BOREHOLE LOG

 LOGGING CREW: Manship/Black

 SHEET 3 OF 4 PAGE 3

 DATE: 8/9/84

 INSTRUMENT ID NO. 26511/015812

 PROPERTY ID: SL022 Austin/Way

AREA: _____

- NOTES: 1. ALL HOLES ARE 4" DIA. UNLESS OTHERWISE NOTED.
 2. RECORD UNUSUAL CONDITIONS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND DEPTH, CASING TYPE AND THICKNESS IF USED, CONCRETE CORES AND THICKNESS, OBSTRUCTIONS, UTILITIES, ETC., IN THE REMARKS SECTION.

0+60

HOLE ID: <u>SL-022-9</u>	HOLE ID: _____	HOLE ID: _____	HOLE ID: _____
TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____	TIME DRILLED: _____
TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____	TIME LOGGED: _____
SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____	SOIL TYPE: _____

DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE		SURFACE		SURFACE		SURFACE	
0"	<u>1224</u>	0"		0"		0"	
6"	<u>1440</u>	6"		6"		6"	
12"	<u>1831</u>	12"		12"		12"	
18"	<u>2102</u>	18"		18"		18"	
24"	<u>2143</u>	24"		24"		24"	
30"		30"		30"		30"	
36"		36"		36"		36"	
42"		42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

 REMARKS: _____

Borehole Location Sketch SL-022 Page 4
Manships/Black 8/9/84.

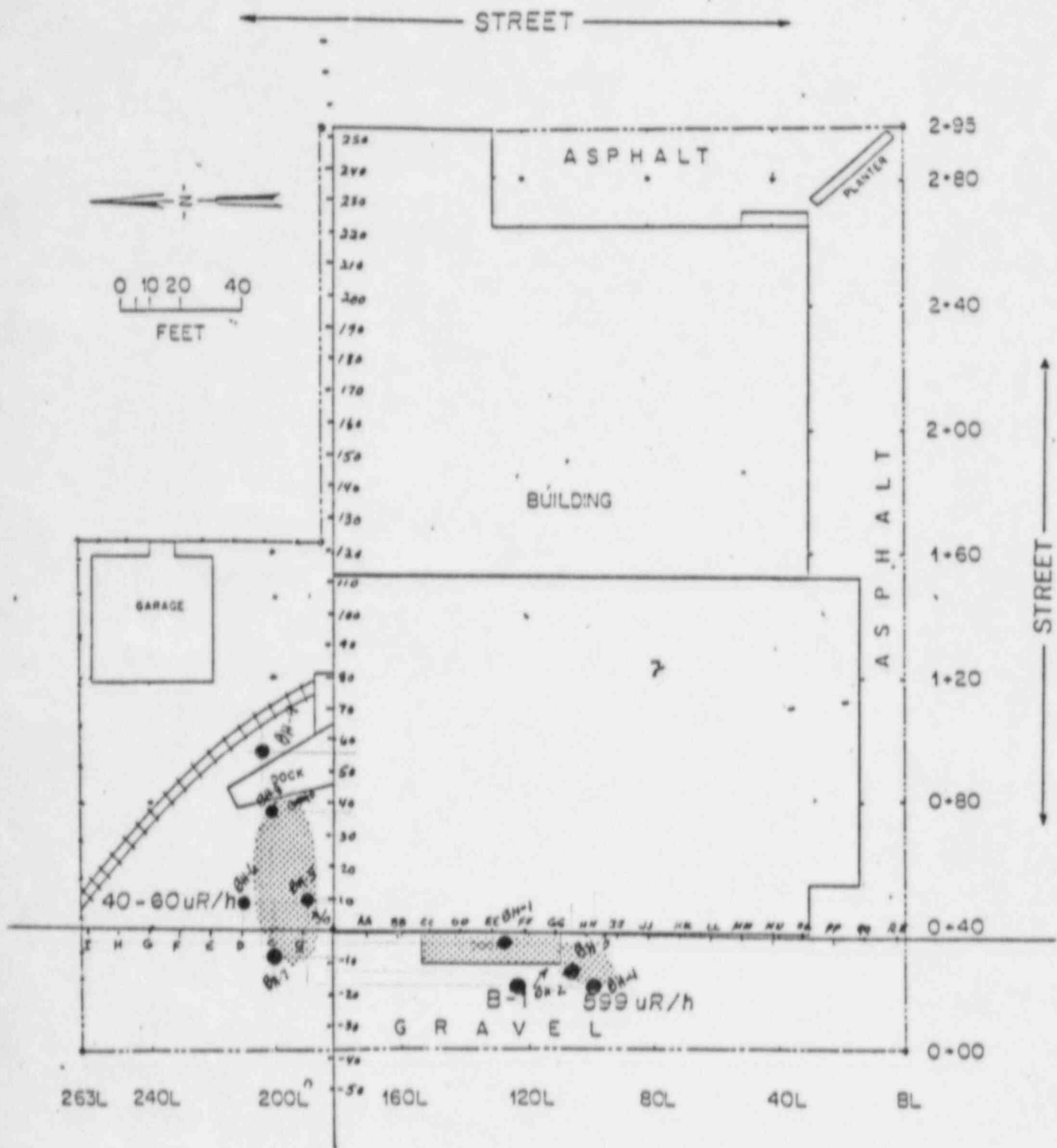


Fig. 2. Drawing of location SLO22, Astin-Weight Piano, 120 W 3300 S, Salt Lake City, UT.

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: ManShip / Black

SHEET 1 OF 6 PAGE 1

DATE: 8/9/84

PROPERTY ID: 5L-022 Austin Wright

INSTRUMENT ID NO.: 26279 / 015811

BACKGROUND CALCULATION:

$$\begin{array}{r} \#1 \quad \frac{771}{1317} + \#2 \quad \frac{724}{1230} + \#3 \quad \frac{737}{1209} = \frac{2232}{3756} + 3 = \frac{744}{1252} \text{ COUNTS/1MIN} \\ \text{Avg Source } * \end{array}$$

AREA: _____			AREA: _____			AREA: _____			AREA: _____		
POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.	
A+00	2109	2246	00+00	6030	8789	HH+00	2149	4105	LL+00	1154	1280
A-10	1798	1655	00-10	10705	14262	HH-10	3322	4018	LL-10	1227	1314
A-20	1325	1425	00-20	3126	2725	HH-20	2106	2007	LL-20	1156	1152
A-30	1219	1220	00-30	1839	1792	HH-30	1616	1583	LL-30	1171	1194
A-40	1218	1121	00-40	1445	1389	HH-40	1383	1330	LL-40	1208	1323
A-50	942	982	00-50	1327	1240	HH-50	1336	1403	LL-50	1234	1319
AA-50	902	1091	EE-50	1405	1482	II-50	1198	1151	MM-50	1155	1285
AA-40	1006	1102	EE-40	1554	1615	II-40	1423	1327	MM-40	1187	1154
AA-30	1294	1380	EE-30	2096	1826	II-30	1453	1356	MM-30	1101	1129
AA-20	1582	1488	EE-20	4067	3232	II-20	1480	1464	MM-20	1173	1158
AA-10	2345	2914	EE-10	9215	12475	II-10	1698	1887	MM-10	1250	1441
AA+00	1722	1588	EE+00	7767	14504	II+00	1526	1364	MM+00	1208	1293
BB+00	2649	2268	FF+00	4802	5638	JJ+00	1126	1310	NN+00	916	1123
BB-10	2388	2558	FF-10	8790	13223	JJ-10	1286	1403	NN-10	864	1106
BB-20	1860	1640	FF-20	3576	2958	JJ-20	1335	1279	NN-20	1087	1119
BB-30	1425	1226	FF-30	2086	1890	JJ-30	1182	1302	NN-30	1125	1182
BB-40	1124	1151	FF-40	1596	1531	JJ-40	1295	1496	NN-40	1101	1137
BB-50	986	1047	FF-50	1401	1456	JJ-50	1250	1378	NN-50	1167	1254
CC-50	1221	1290	GG-50	1313	1398	KK-50	1290	1442	00-50	1106	1253
CC-40	1160	1260	GG-40	1457	1455	KK-40	1285	1475	00-40	1087	1077
CC-30	1653	1479	GG-30	1895	1780	KK-30	1202	1248	00-30	1073	1147
CC-20	2470	2268	GG-20	3266	2686	KK-20	1177	1199	00-20	1032	1073
CC-10	5930	11254	GG-10	5968	11466	KK-10	1306	1369	00-10	971	1066
CC+00	4634	12207	GG+00	5063	10756	KK+00	1192	1155	00+00	1053	1130

REMARKS: *.00552 uCi / Ra²²⁶ Source Used.

** Top Deck

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: Manship / Black

SHEET 2 OF 6 PAGE 2

DATE: 8/9/84

PROPERTY ID: SL 022 Austin Weight

INSTRUMENT ID NO.: 26279 / 015811

BACKGROUND CALCULATION:

#1 771 + #2 724 + #3 737 = 2232 - 3 = 744 COUNTS/1MIN

AREA: _____			AREA: _____			AREA: _____			AREA: _____		
POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.	
PP+00	936	1048	C-50	1071	1150	G-50	1075	1176	I+70	879	1258
PP-10	1036	1093	C-40	1099	1130	G-40	1092	1109	I+80	942	1168
PP-20	1122	981	C-30	1145	1054	G-30	1080	1151	I+90	1109	1041
PP-30	1052	1132	C-20	1275	1161	G-20	1118	1190	I+100	948	942
PP-40	1140	1195	C-10	1726	1559	G-10	1057	1126	I+110	845	839
PP-50	1043	1212	C+00	2865	3188	G+00	1029	992	I+120	931	920
QQ-50	1178	1313	D+00	1437	1528	H+00	1056	990	I+130	1271	1612
QQ-40	1130	1203	D-10	1346	1213	H-10	1191	1163	H+130	1206	1649
QQ-30	1077	1093	D-20	1104	1256	H-20	1146	1197	H+120	1052	922
QQ-20	1076	1041	D-30	1130	1164	H-30	1133	1136	H+110	838	817
QQ-10	969	1022	D-40	1023	1070	H-40	1057	1243	H+100	897	908
QQ+00	805	933	D-50	1051	1123	H-50	1169	1199	H+90	941	913
RR+00	1050	1210	E-50	1017	1046	I-50	1193	1129	H+80	939	999
RR-10	1100	1175	E-40	1083	1119	I-40	1131	1127	H+70	866	865
RR-20	1081	1006	E-30	1130	1115	I-30	1091	1101	H+60	957	974
RR-30	1038	1073	E-20	1170	1267	I-20	1134	1231	H+50	981	1041
RR-40	1098	1100	E-10	1222	1166	I-10	1203	1557	H+40	976	1057
RR-50	1112	1139	E+00	1218	1122	I+00	1157	1258	H+30	1088	1048
B+00	2653	2996	F+00	1038	1177	I+10	1116	1400	H+20	1069	1046
B-10	1655	1325	F-10	1122	1152	I+20	1179	1443	H+10	997	1018
B-20	1286	1226	F-20	1091	1107	I+30	1010	1293	H+00	1107	1082
B-30	1171	1190	F-30	1093	1125	I+40	1106	1196	G+00	1058	1033
B-40	1188	1114	F-40	1112	1126	I+50	907	1280	G+10	1070	1048
B-50	1075	1103	F-50	1064	1042	I+60	872	1152	G+20	927	1059

REMARKS: _____

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: Jeff Manship
Van Black

SHEET 3 OF 6 PAGE 3

DATE: 8/9/84

PROPERTY ID: 5L022

INSTRUMENT ID NO.: 26279 / 015811

BACKGROUND CALCULATION:

#1 771 + #2 724 + #3 737 = 2232 ÷ 3 = 744 COUNTS/1MIN

AREA: _____			AREA: _____			AREA: _____			AREA: _____		
POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.	
G+30	899	867	F+20	1070	1057	D+60	1003	1106	B+100	938	961
G+40	865	942	F+10	984	1011	D+50	1113	1103	B+90	980	1013
G+50	884	936	F+00	1080	1074	D+40	1120	1290	B+80	964	1021
G+60	963	924	E+00	1259	1206	D+30	1352	1428	B+70	991	1087
G+70	878	880	E+10	1165	1191	D+20	1320	1388	B+60	989	1019
G+80	957	978	E+20	1170	1102	D+10	1404	1337	B+50	1185	1054
G+90	846	1011	E+30	1130	1119	D+00	1499	1689	B+40	1908	2734
G+100	787	919	E+40	1072	1099	C+00	2788	3415	B+30	3106	3370
G+110	926	860	E+50	958	981	C+10	2282	2148	B+20	4553	7043
G+120	1074	945	E+60	1026	1000	C+20	2347	1757	B+10	4120	5755
G+130	1251	1314	E+70	943	841	C+30	2230	1732	B+00	2630	3036
G+140			E+80	896	985	C+40	1721	1948	A+10	1317	1402
G+150			E+90	871	874	C+50	1018	967			
F+130	1355	1532	E+100	876	922	C+60	1092	1145			
F+120	1033	1060	E+110	913	900	C+70	986	973			
F+110	967	955	E+120	1069	1091	C+80	938	959			
F+100	852	904	E+130	1284	1457	G+90	945	991			
F+90	919	849	D+130	1300	1572	G+100	970	898			
F+80	942	945	D+120	1085	1534	G+110	965	969			
F+70	899	970	D+110	924	1048	C+120	1082	1143			
F+60	907	1012	D+100	964	954	C+130	1205	1667			
F+50	985	1043	D+90	949	1016	B+130	1366	1556			
F+40	1012	911	D+80	991	932	B+120	1082	1152			
F+30	1010	1107	D+70	948	975	B+110	1010	943			

REMARKS: _____

OUTDOOR GAMMA SCREENING SURVEY DATA SHEET

LOGGING CREW: Manship / Black

SHEET 4 OF 6 PAGE 4

DATE: 8/10/84 Austin Wright

PROPERTY ID: SL 022

INSTRUMENT ID NO.: 26279 / 015811

BACKGROUND CALCULATION:

#1 778 + #2 725 + #3 744 = 2301 - 3 = 767 COUNTS/1MIN

AREA: _____			AREA: _____			AREA: _____			AREA: _____		
POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.		POINT ID	READING 1 m. / Surf.	
RR+10	1045	1242	RR+110	1049	1075	PR+150	1066	1138	PP+220	1177	1147
QQ+10	992	1039	QQ+110	991	1096	QQ+150	1044	1026	QQ+220	1219	1207
PP+10	944	1140	PR+110	1043	1119	RR+150	1037	1193	NN+220	1178	1360
QQ+10	967	1252	PP+110	1063	1148	RR+160	991	1135	" + 230	1327	1291
RR+20	968	1134	QQ+120	1002	1079	QQ+160	1055	1066	QQ+230	1163	1322
QQ+20	1031	1162	RR+120	1030	1149	PP+160	1094	1054	PP+230	1105	1272
QQ+30	997	1024	RR+130	1065	1134	QQ+160	1073	1172	QQ+230	1146	1144
RR+30	1023	1135	QQ+130	992	1038	NN+160	1230	1285	RR+230	1105	1205
RR+40	1010	1107	PP+130	1148	1230	NN+170	1209	1400	RR+240	1113	1195
QQ+40	924	1016	QQ+130	1150	1176	PP+190	1131	1113	QQ+240	1069	1198
QQ+50	950	949	NN+130	1120	1299	QQ+190	1003	1070	PP+240	1177	1227
RR+50	978	1195	NN+150	1041	1234	RR+190	1056	1153	QQ+240	1271	1354
RR+60	1033	1132	QQ+150	1094	1125	RR+200	1064	1173	NN+240	1327	1304
QQ+60	1017	1025	QQ+170	1108	1185	QQ+200	1040	1160	RR+250	1027	1152
PP+60	1057	1252	PP+170	1011	1118	PP+200	1121	1205	QQ+250	1047	1114
PP+70	1073	1254	QQ+170	1062	1105	QQ+200	1092	1195	PP+250	1140	1213
QQ+70	990	1060	RR+170	1109	1136	NN+200	1165	1229	QQ+250	1153	1288
RR+70	1087	1123	RR+180	1089	1223	NN+210	1258	1173	NN+250	1081	1304
RR+80	1032	1173	QQ+180	1081	1026	QQ+210	1247	1238	NN+250	1095	1188
QQ+80	964	1060	PP+180	1118	1282	PP+210	1193	1128	LL+250	1165	1245
PP+80	1048	1184	QQ+180	1171	1352	QQ+210	1102	1201	RR+250	1176	1247
PP+100	991	1083	NN+180	1249	1350	RR+210	1113	1288	JJ+250	1119	1198
QQ+100	983	1030	NN+190	1271	1329	RR+220	1073	1172	II+250	794	941
RR+100	1008	1118	QQ+190	1141	1166	QQ+220	1159	1149	HH+250	826	996

REMARKS: _____

OUTDOOR GAMMA SCREENING
SURVEY DATA SHEET

LOGGING CREW: Manship / Black

SHEET 45 OF 6 PAGE 4

DATE: 8/10/84

PROPERTY ID: 5L022 Austin/West

INSTRUMENT ID NO.: 26279 / 015811

BACKGROUND CALCULATION:

$$\#1 \underline{778} + \#2 \underline{725} + \#3 \underline{744} = \underline{2301} \div 3 = \underline{767} \text{ COUNTS/.1MIN}$$
[illegible]

REMARKS:

Fig. 2. Drawing of location SL022, Astin-Weight Piano, 120 W 3300 S, Salt Lake City, UT.

APPENDIX B

WEST TEMPLE INVESTMENT COMPANY LETTER

REC-17-20

POWER GROUP

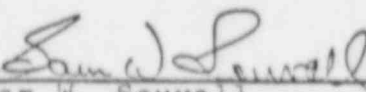
DATE	PROJECT	CS/LEC	ARCHIVE
10-10-2001	03-01		

It is our understanding that any remedial work will be done at no expense to us.

Thank you for your cooperation and assistance in this matter.

Very truly yours,

West Temple Investment Co.



Sam W. Souvall
General Partner

SWS/ssk

CC: Astin Weight Piano Co.
George W. Souvall
John Billinis

↑ JUST HAPPENS TO BE
THE MAN OUR STREET
IS NAMED AFTER -



MORRISON-KNUDSEN COMPANY, INC.

UMTRA PROJECT OFFICE
P.O. BOX 9136
ALBUQUERQUE, NEW MEXICO 87119