

**ASBESTOS SURVEY AND ASSESSEMENT FOR THE  
CHILD CARE HOUSE  
SOUTHERN UTAH UNIVERSITY  
43 SOUTH 200 WEST  
CEDAR CITY, UTAH 84720**

**DFCM PROJECT NUMBER: 10159300**

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CHILD CARE HOUSE  
SOUTHERN UTAH UNIVERSITY  
43 SOUTH 200 WEST  
CEDAR CITY, UTAH 84720**

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**September 20, 2010**

**Prepared for:**



State of Utah—Department of Administrative Services

**DIVISION OF FACILITIES CONSTRUCTION  
AND MANAGEMENT**

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**ASBESTOS SURVEY AND ASSESSEMENT  
CHILD CARE HOUSE  
SOUTHERN UTAH UNIVERSITY**

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## 1.0 EXECUTIVE SUMMARY

**Asbestos Survey and Assessment  
Child Care House  
Southern Utah University  
Cedar City, Utah 84720**

An asbestos survey was conducted at the subject facility on July 14, 2010.

The building was visually inspected to identify building materials that might contain asbestos. Bulk samples were collected from suspect materials and analyzed to determine if they contained asbestos. All asbestos-containing materials (ACM) were assessed for damage and the potential for exposure. This survey was requested and approved by Mr. Robert J. Anderson, Hazardous Materials Manager, State of Utah, Division of Facilities Construction and Management.

The following table lists all ACM that were identified in the building. Information specific to the building concerning inaccessible areas / materials and recommended response actions can be found in this report. There is important information in these sections that is not included in this executive summary. This report should be read in its entirety, including detailed information that is contained in other sections and appendices of this report.

**Asbestos-Containing Materials by Homogeneous Area  
Child Care House  
Southern Utah University**

<b>Homogeneous Area Number</b>	<b>Material Description</b>	<b>Asbestos Content</b>	<b>Amount</b>	<b>Cost Estimate</b>
<b>M01</b>	<b>Floor Tile and Mastic – Under Tacked Carpet</b> 9” x 9” Green with Beige Streaks; Black Tar Mastic Rooms: Basement Play Area	15% Chrysotile (tile) None Detected (mastic)	210 SF	\$693.00
<b>M02</b>	<b>Floor Tile and Mastic – Under Tacked Carpet</b> 9” x 9” Off White; Black Tar Mastic Rooms: Basement Play Area	15% Chrysotile (tile) None Detected (mastic)	210 SF	\$693.00

**Notes:**

1. Homogeneous Area Number (Not related to building room numbers.)
2. Cost Estimates include asbestos removal costs only; abatement design and management fees and replacement costs are not included. Please refer to Section 7.0 for more details.

**Asbestos Survey and Assessment  
Child Care House  
Southern Utah University**

**2.0 INTRODUCTION**

On July 11, 2007, R & R Environmental, Inc., conducted an asbestos survey of the Child Care House located at Southern Utah University, Cedar City, Utah. The purpose of this survey was to identify the existence, extent, and condition of both friable and non-friable asbestos-containing materials (ACM) within the facility. Bulk samples were collected from suspect materials and analyzed for asbestos content. Each occurrence of ACM was assessed for damage and friability.

The following accredited and certified inspectors performed the inspection, collected the samples and made assessment:



\_\_\_\_\_  
Jon R. Craig  
State of Utah, Division of Air Quality Inspector  
Certification Number: ASB-2934

September 20, 2010

Date

This report was reviewed by:



\_\_\_\_\_  
David C. Roskelley, MSPH, CIH, CSP  
State of Utah, Division of Air Quality Inspector  
Certification Number: ASB-2934  
AHERA Inspector #5 PSI 65451 I  
Certified Safety Professional #15774  
Certified Industrial Hygienist #8529

September 20, 2010

Date

### 3.0 BUILDING DESCRIPTION

#### Building Identification

Building Name ..... Child Care House  
Building Address .....SUU, 43 South 200 West, Cedar City, Utah 84720

#### Building Construction

Building Construction Date ..... ~ 1950s  
Building Type ..... Residential Home converted to Day Care Facility  
Building Total Sq. Ft.....2,488  
Structural System ..... Concrete, wood  
Exterior Wall Construction ..... Brick, Concrete  
Floor Deck Construction ..... Reinforced concrete  
Roof Construction ..... Asphalt Shingle  
Floors Above Grade ..... 1  
Floors Below Grade ..... 1

#### Interior Finishes

Floors ..... Concrete, ceramic tile, vinyl floor tile, linoleum, carpet  
Ceiling ..... Plaster  
Walls ..... Plaster  
Attic ..... Yes  
Crawl space ..... Yes

#### Building Mechanical

Heating Plant ..... HVAC  
Main Heating Distribution ..... Forced Air  
Cooling Plant ..... HVAC  
Main A / C Distribution ..... Forced Air

## **4.0 SURVEY PROCEDURES**

### **4.1 Building Survey**

All accessible areas of the facility were visually inspected to identify suspect asbestos containing materials (ACM.) All accessible surfaces, structures, and mechanical systems within these areas were examined and all suspected ACM was touched to determine friability.

Suspect ACM was identified and assessed in homogeneous areas. A homogeneous area is defined as a single material, uniform in texture and appearance, installed at one time, and unlikely to consist of more than one type, or formulation, of material. In cases where joint compound and / or tape has been applied to wallboard (gypsum board) and cannot be visually distinguished from the wallboard, it is considered an integral part of the wallboard and in effect becomes one material forming a wall or ceiling “system.”

Each homogeneous area was given a unique material identification number. Each ID number begins with a letter: “S” for surfacing materials, “T” for thermal system insulation, or “M” for miscellaneous materials. This letter is followed by a two-digit number, assigned in consecutive order. This number is used to identify the homogeneous area throughout the inspection report.

### **4.2 Bulk Sample Collection**

Bulk samples were collected from all accessible homogeneous areas of suspect ACM for subsequent laboratory analysis to determine actual asbestos content. Sampling was conducted in a manner that minimized damage to the building, did not leave any unsightly marks, and did not create a health hazard for the inspectors.

The number of samples collected from each homogeneous area generally followed the EPA AHERA regulations (40 CFR 763.86). Friable surfacing materials were sampled using the random sampling scheme given in the EPA publication 560 / 5-85-30a, titled “Asbestos in buildings: Simplified Sampling Scheme for Friable Surfacing Materials.” Between three and seven samples were collected from friable surfacing materials, depending on the size of the homogeneous area.

### **4.3 Bulk Sample Analysis**

Bulk samples were analyzed using polarized light microscopy (PLM) and visual estimation in accordance with the EPA Interim Method for the Determination of Asbestos in Bulk Insulation Samples, EPA-600 / M4-82-020. Samples were analyzed by Dixon Information, Inc., 78 West 2400 South, Salt Lake City, Utah 84115. The laboratory is accredited under the National Institute of Standards and Technology – National voluntary Laboratory Accreditation Program (NIST-NVLAP) for bulk-asbestos sample analysis and is also accredited by the American Industrial Hygiene Association (AIHA).

Federal EPA's NESHAP and AHERA regulations define ACM as material containing greater than 1% asbestos by weight; materials containing less than 1% asbestos are not considered regulated ACM.

Further, the NESHAP regulations state that any sample found to contain less than 10% asbestos but greater than "none detected," by visual estimation, must be assumed to contain greater than 1% asbestos unless confirmed to be less than 1.0% asbestos by point counting analysis. Any samples found to contain asbestos in this concentration range were assumed to contain greater than 1.0% asbestos and are listed in Section 5.8 of this report. All samples that have been point counted are identified as such in the sample result tables.

The laboratories reports can be found in Appendix D of this report.

## 5.0 SURVEY RESULTS

### 5.1 Asbestos-Containing Materials

Homogeneous areas of suspect ACM are identified as being ACM if the laboratory analysis shows the material to contain any detectable asbestos, unless subsequent TEM analysis resulted in less than 0.1% asbestos being detected. Table 1 of the Executive Summary and in Appendix A lists all homogeneous areas that were found to be ACM. Each material is described by type of material, friability and visual appearance.

Friability is defined in accordance with EPA's NESHAP regulations.

"Friable ACM" is any material containing more than 1% asbestos (as determined by PLM) that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure and also includes non-friable ACM that may become friable during building demolition.

"Non-friable ACM" is any material containing more than 1% asbestos (as determined by PLM) that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

"Category I non-friable ACM" are asbestos-containing resilient floor coverings (commonly known as vinyl asbestos tile (VAT), asphalt roofing products, packings, and gaskets).

"Category II non-friable ACM" encompasses all other non-friable ACM.

"Non-friable RACM" is used to denote thermal system insulation that is in good condition but would become friable during renovation or demolition and therefore is "regulated asbestos containing material" (RACM).

### 5.2 Non-Asbestos-Containing Materials

Homogeneous areas of suspect ACM are identified as non-ACM if the laboratory analysis shows the material to contain no detectable asbestos. Table 2, located in Appendix A of this report, lists all homogeneous areas that were found to be non-ACM.

### 5.3 Bulk Sample Analytical Results

Table 3, located in Appendix A of this report, lists all of the bulk samples in order by sample number, that were collected from homogeneous areas of suspect ACM, along with the laboratory analytical results. Each sample was given a unique sample number. There may be more than one sample number for the same homogeneous area of suspect ACM. The homogeneous areas of suspect ACM are identified on this table by their material identification numbers. The sample location listed on this table provides a brief, but specific, description of the location where the sample was collected. This is different

than the homogeneous area location provided on Tables 1 and 2. Table 4 is the same as Table 3 except the entries has been sorted by homogeneous area number.

#### **5.4 Damage and Hazard Assessment**

Each homogeneous area of ACM has been assessed for existing damage, accessibility, and potential for future damage, and this information is presented in Table 5, located in Appendix A of this report. This table also lists the substrate present beneath each homogeneous area of ACM.

Each homogeneous area of friable ACM and asbestos-containing building material (ACBM) was classified into one of the following seven categories, as specified in EPA's AHERA regulations (40 CFR 763.88):

- (1) Damaged or significantly damaged thermal system insulation ACM.
- (2) Damaged friable surfacing ACM.
- (3) Significantly damaged friable surfacing ACM.
- (4) Damaged or significantly damaged friable miscellaneous ACM.
- (5) ACBM with potential for damage.
- (6) ACBM with potential for damage.
- (7) Any remaining friable ACBM or friable suspected ACBM.

The damage categories are defined as follows:

“Undamaged” means the material had no visible damage, or extremely minor damage or surface marring (i.e., a room full of floor tile with only two or three small corners chipped off on the tile).

“Damaged” means the material had visible damage evenly distributed over less than 10% of its surface, or localized over less than 25% of its surface.

“Significantly Damaged” means the material had visible damage that is evenly distributed over 10% or more of its surface, or localized over 25% or more if its surface.

Each homogeneous area of ACM was evaluated for accessibility to the building occupants and the general public, assuming the building was fully occupied, using the following assessment categories.

“Inaccessible” means the material was located in an area that people had no reason to enter and could not access without special measures. One example would be above a solid ceiling.

“Rarely Accessed” identifies a material that was in a location that could be accessed but wasn't unless there was a specific need. An example would be a

pipe tunnel. Another example would be a high ceiling that is out of reach and not subject to any specific disturbance.

“Periodic Access” identifies a material that was in a location that was accessible, was not occupied full time, but was accessed on a routine basis. An example would be a mechanical room or boiler room.

“Continuous Access” identifies a material that was in a location that was occupied full time and was within reach of the occupants, or was frequently subject to direct disturbance. Examples would be exposed floor tile or a normal height ceiling.

## **5.5 Hazard Ranking**

A hazard ranking has been determined for every ACM, in each functional space (room), and is listed in Table 7, Appendix A. The Hazard Rank is derived from the material’s current condition and potential for future disturbance.

The DFCM required hazard assessment process used here produces seven hazard Ranks. The rankings of potential hazard range from 7, most hazardous, to 1, least hazardous, and are used to determine abatement priority. The highest ranking is reserved for ACM that is “significantly damaged”. Hazard rankings 6 to 4 reflect ACM that is “damaged” (slight damage is the term used in Table 7), with a ranking of 6 indicating a “potential for significant damage”, and a ranking of 5 indicating a “potential for damage.” Hazard rankings of 3 to 1 are reserved for materials currently in good condition, but with a range of moderate to low in the likelihood for future disturbance.

Note that these seven rankings are different from, and should not be confused with, the seven AHERA categories of damage and potential damage described in Section 5.4, above, and listed in Table 5. This hazard assessment scheme is also completely reversed from the current EPA Management Planner hazard assessment scheme where a hazard rank of 1 is the most hazardous.

## **5.6 Homogeneous Areas with Special Considerations**

None

## **5.7 Suspect Materials Presumed to be Asbestos-Containing Materials without Laboratory Analysis**

None

## **5.8 Inaccessible Areas**

None

**5.9 Material(s) assumed to contain >1.0% asbestos without subsequent TEM or Point Count Analysis**

None

## 6.0 RESPONSE ACTION COMMENTS

### 6.1 EPA Requirements

Asbestos is regulated as a hazardous air pollutant by the Environmental Protection Agency (EPA) under the authority of the Clean Air Act. The asbestos regulations are included in the National Emissions Standards for Hazardous Air Pollutants (NESHAP) and referenced as 40 CFR 61, Subpart M. ACMs identified in this report are subject to those regulations. Those regulations, and state and local regulations, should be carefully examined prior to renovation, demolition, cleanup, or any other activity which could disturb the ACMs, to ensure that all activities are in compliance with applicable requirements.

ACM is defined by the EPA, as any material containing greater than one percent of asbestos. ACMs are categorized as being either friable or non-friable. Friable ACMs are those materials that can be easily crumbled, pulverized, or otherwise broken up using hand or finger pressure when dry, and are materials considered more likely to produce airborne asbestos fibers. Non-friable ACMs are materials that do not meet the above test, and are considered less likely to produce airborne asbestos fibers. Not all ACMs are regulated under NESHAP. Regulated ACM (RACM) means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of regulated demolition or renovation operations. Regulated demolition and renovation operations are those where the quantity of ACM affected is 260 linear feet or more on pipes, 160 square feet or more on other components, or 35 cubic feet or more in volume. There are certain notification requirements for demolition projects involving less than the above quantities.

Briefly, EPA requires that RACM be removed from facilities scheduled for demolition or renovation before any activity begins that would break up, dislodge, or similarly disturb the materials or preclude access to the materials for subsequent removal. Category I non-friable ACM that is not in poor condition and is not friable does not have to be removed prior to demolition of a facility. **However, these materials are exempt from mandatory removal only during demolition, not renovation. Removal is mandated when renovation activities are expected to disturb these ACMs and render them friable.** Category II non-friable ACM also does not have to be removed prior to demolition if the probability is low that the material will become crumbled, pulverized, or reduced to powder (made friable) during demolition. However, state regulations may require the removal of these materials. Additionally, Category I non-friable ACM that has not become crumbled, pulverized, or reduced to powder during demolition activities may be disposed of as ordinary construction waste.

In any situation where ACM remains in a building, it should be managed under a comprehensive operations and maintenance program (O&M). The procedures and

guidelines described in an O&M program should be followed whenever building maintenance activities may disturb any ACMs present in the building.

## **6.2 Renovation Options**

The mastic is non-friable ACMs. NESHAP regulations require the removal of non-friable ACMs before they are **disturbed and made friable** during renovation activities. Therefore, we recommend that all of these materials be removed and properly disposed of by a licensed asbestos abatement contractor before renovation activities begin **which have the potential of disturbing and making these materials friable**. The removal project must follow the requirements of the OSHA regulation outlined in 29 CFR 1926.1101. While these materials remain in place, a comprehensive asbestos O&M program should be implemented when the building is occupied to reduce human exposure to airborne asbestos fibers.

## 7.0 COST ESTIMATES

A breakdown of the estimated removal costs by homogeneous area can be found in the Table 6, Appendix A. These cost estimates are provided for use in long-term budgeting and planning only, and do not have a level of accuracy sufficient to be used as a construction design cost estimate. The actual cost of asbestos removal is highly dependent on a number of factors such as the size of the project, the required time frame for removal, the time of year the job is conducted, the regulatory climate at the time, etc., therefore, actual abatement costs could vary significantly from these estimates. Replacement costs have not been included in these figures.

The cost for abatement design and management services is not included in these figures. These additional fees can range from 15% of the estimated abatement costs for large projects to greater than 50% for very small projects. The design and management fees cover the cost of preparing plans and specifications, conducting the bidding process as well as third-party oversight during abatement.

## **8.0 LIMITATIONS AND EXCLUSIONS OF WARRANTY**

This asbestos survey and assessment was performed using procedures and a level of diligence typically exercised by professional consultants performing similar services. However, asbestos-containing material (ACM) can be present in a structure, but not identified using ordinary investigative procedures.

No asbestos survey can completely eliminate uncertainty regarding the presence of ACM. R & R Environmental, Inc. level of diligence and investigative procedures are intended to reduce, but not eliminate, potential uncertainty regarding the presence of ACM. The procedures used for this survey attempt to establish a balance between the competing goals of limiting investigative costs, time, and building damage, and reducing the uncertainty about unknown conditions. Therefore, the determinations in this report should not be construed as a guarantee that all ACM present in the subject property has been included in this report.

This report presents R & R Environmental, Inc.'s professional determinations, which are dependent upon information obtained during performance of consulting services. R & R Environmental, Inc. assumes no responsibility for omissions or errors resulting from inaccurate information provided by sources outside of R & R Environmental, Inc.

No warranty or guarantee, expressed or implied, is made regarding the findings, conclusions, or recommendations contained in this report. The limitations presented above supersede the requirements or provisions of all other contracts or scopes of work, implied or otherwise, except those stated or acknowledged herein.

## **Appendix A**

### **Data Tables**

# Table 1

## Asbestos-containing Materials by Homogeneous Area Child Care House Southern Utah University

<b>Homogeneous Area Number</b>	<b>Material Description / Location</b>	<b>Friability</b>	<b>Asbestos Content</b>	<b>Quantity</b>
<b>M01</b>	<b>Floor Tile and Mastic – Under Tacked Carpet</b> 9” x 9” Green with Beige Streaks; Black Tar Mastic Rooms: Basement Play Area	Category 1 Non-Friable	15% Chrysotile (tile) None Detected (mastic)	210 SF
<b>M02</b>	<b>Floor Tile and Mastic – Under Tacked Carpet</b> 9” x 9” Off White; Black Tar Mastic Rooms: Basement Play Area	Category 1 Non-Friable	15% Chrysotile (tile) None Detected (mastic)	210 SF

**Notes:**

## Table 2

**Homogeneous Areas That Do Not Contain Asbestos  
Child Care House  
Southern Utah University**

<b>Homogeneous Area Number</b>	<b>Material Description</b>	<b>Material Location</b>
<b>M03</b>	<b>Floor Tile – Under Glued Carpet</b> 12” x 12” Tan with Beige Splotches; Clear Resin Mastic	Room: Basement Bathroom
<b>M04</b>	<b>Rolled Vinyl Flooring – Exposed</b> Tan Hard Wood Floor Pattern, Yellow Resin Mastic	Room: 1 <sup>st</sup> Kitchen, 1 <sup>st</sup> Stair Landing, 1 <sup>st</sup> Men, 1 <sup>st</sup> Women
<b>M05</b>	<b>Rolled Vinyl Flooring – Exposed</b> Beige, Rust and Green Tile Pattern	Rooms: 1 <sup>st</sup> Infant Area Sink Splash
<b>M06</b>	<b>Rolled Vinyl Flooring – Exposed</b> Beige 6’ Stone Tile Pattern	Rooms: 1st Entry
<b>M07</b>	<b>Plaster</b> White Limestone Plaster	Room: Walls & Ceilings Throughout
<b>S01</b>	<b>Surfacing Plaster</b> White Limestone Plaster	Rooms: All 1 <sup>st</sup> Floor Ceilings, Basement Play, Laundry

### Table 3

**Bulk Sample Analytical Results by Sample Number  
Child Care House  
Southern Utah University**

<b>Sample Number</b>	<b>Homogeneous Area Number</b>	<b>Material Samples</b>	<b>Sample Location</b>	<b>Analytical Results</b>
SUUSCC-01	M01	9" Vinyl Floor Tile	Basement Play	15% Chrysotile
SUUSCC-02	M02	9" Vinyl Floor Tile	Basement Play	15% Chrysotile
SUUSCC-03	M03	12" Vinyl Floor Tile	Basement Bathroom	None Detected
SUUSCC-04	M04	Rolled Vinyl Flooring	1 <sup>st</sup> Bathroom	None Detected
SUUSCC-05	M05	Rolled Vinyl Flooring	1 <sup>st</sup> Crib	None Detected
SUUSCC-06	M06	Rolled Vinyl Flooring	Entry	None Detected
SUUSCC-07	M07	Plaster	Basement Storage	None Detected
SUUSCC-08	M07	Plaster	Basement Laundry	None Detected
SUUSCC-09	S01	Plaster Surfacing	1 <sup>st</sup> Living	None Detected
SUUSCC-10	S01	Plaster Surfacing	Basement Play	None Detected
SUUSCC-11	S01	Plaster Surfacing	Laundry	None Detected

Note: ND = No Asbestos Detected, NA = Not Analyzed, TR = <1% Asbestos, QC = Quality Control Split Sample

## Table 4

**Bulk Sample Analytical Results by Homogeneous Area Number  
Child Care House  
Southern Utah University**

<b>Sample Number</b>	<b>Homogeneous Area Number</b>	<b>Material Samples</b>	<b>Sample Location</b>	<b>Analytical Results</b>
SUUSCC-01	M01	9" Vinyl Floor Tile	Basement Play	15% Chrysotile
SUUSCC-02	M02	9" Vinyl Floor Tile	Basement Play	15% Chrysotile
SUUSCC-03	M03	12" Vinyl Floor Tile	Basement Bathroom	None Detected
SUUSCC-04	M04	Rolled Vinyl Flooring	1 <sup>st</sup> Bathroom	None Detected
SUUSCC-05	M05	Rolled Vinyl Flooring	1 <sup>st</sup> Crib	None Detected
SUUSCC-06	M06	Rolled Vinyl Flooring	Entry	None Detected
SUUSCC-07	M07	Plaster	Basement Storage	None Detected
SUUSCC-08	M07	Plaster	Basement Laundry	None Detected
SUUSCC-09	S01	Plaster Surfacing	1 <sup>st</sup> Living	None Detected
SUUSCC-10	S01	Plaster Surfacing	Basement Play	None Detected
SUUSCC-11	S01	Plaster Surfacing	Laundry	None Detected

Note: ND = No Asbestos Detected, NA = Not Analyzed, TR = <1% Asbestos, QC = Quality Control Split Sample

## Table 5

### Damage and Hazard Assessment by Homogeneous Area Child Care House Southern Utah University

Area Number	Material Type	Substrate	Assessment Category	Damage	Accessibility	Disturbance Potential
M01	<b>Vinyl Floor Tile – Under Tacked Carpet</b> <i>Black Tar Mastic is None Detected for Asbestos</i>	Concrete	X	Undamaged	Rarely Accessed	Low
M02	<b>Vinyl Floor Tile – Under Tacked Carpet</b> <i>Black Tar Mastic is None Detected for Asbestos</i>	Concrete	X	Undamaged	Rarely Accessed	Low

Note: Assessment Categories:

- 1-Damaged or significantly damaged thermal system insulation ACM
- 2-Damaged friable surfacing ACM
- 3-Significantly damaged friable surfacing ACM
- 4-Damaged or significantly damaged friable miscellaneous ACM
- 5-ACM with potential for damage
- 6-ACM with potential for significantly damage
- 7-Any remaining friable ACM or friable suspect ACM
- X-Not applicable (material is non-friable surfacing or miscellaneous material)

## Table 6

### Estimated Abatement Costs by Homogeneous Area Child Care House Southern Utah University

Homogeneous Area Number	Material	Quantity	Unit Cost	Abatement Cost
M01	Vinyl Floor Tile – Under Tacked Carpet <i>Black Tar Mastic is None Detected for Asbestos</i>	210 SF	\$3.30	\$693.00
M02	Vinyl Floor Tile – Under Tacked Carpet <i>Black Tar Mastic is None Detected for Asbestos</i>	210 SF	\$3.30	\$693.00
<b>TOTAL ESTIMATED ABATEMENT COST</b>				<b>\$1,386.00</b>

Note: Estimated abatement costs do not include replacement costs or costs for a consultant to manage the abatement.

# Table 7

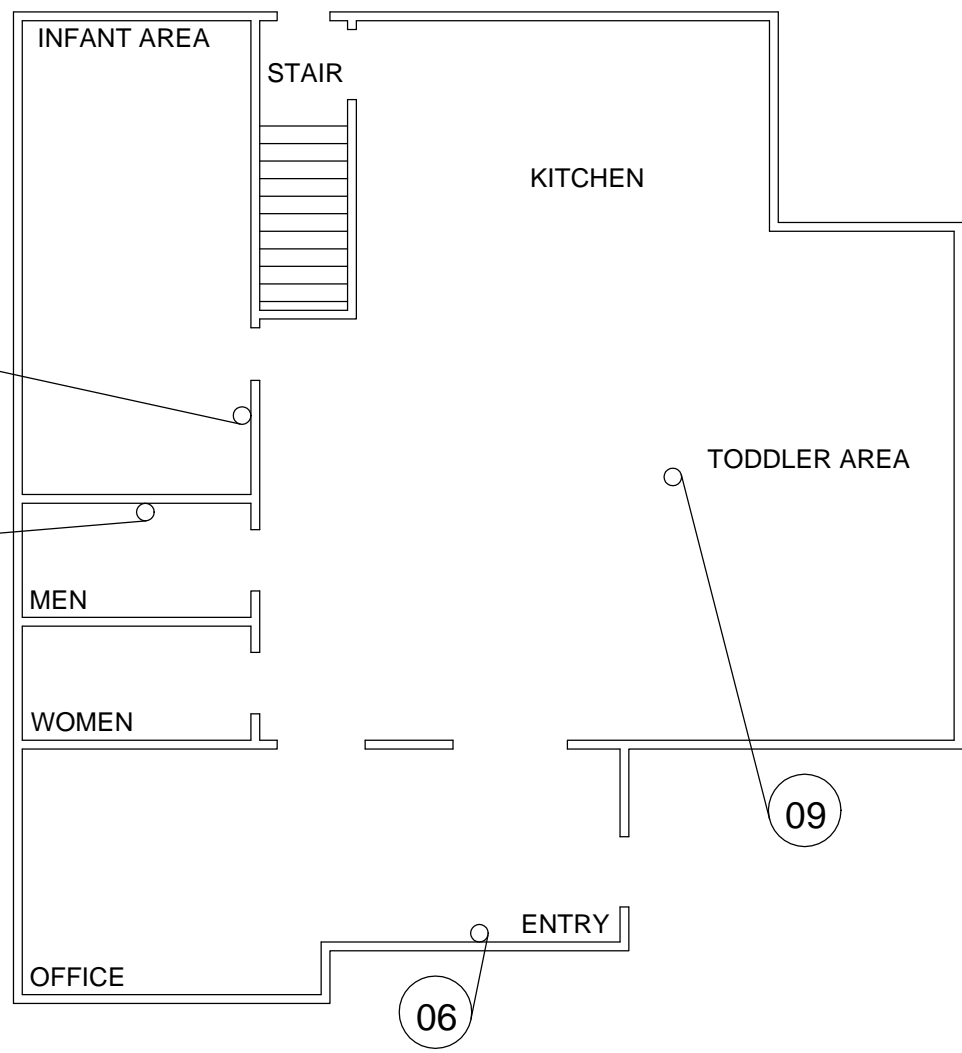
## Abatement Cost and Hazard Rank by Functional Space Child Care House Southern Utah University

Room Number	Homog. Area Number	Material Description	Amount	Total Cost	Asbestos Content	Condition	Disturbance Potential	DFCM Hazard Rank
B. Play	M01	Vinyl Floor Tile	210 SF	693.00	15% Chrysotile	Fair	Low	1
B. Play	M02	Vinyl Floor Tile	210 SF	693.00	15% Chrysotile	Fair	Low	1

Note: SF = Square Feet      LF = Linear Feet      PF = Pipe Fittings

## **Appendix B**

# **Building Floor Plans**



## = SAMPLE NUMBER AND LOCATION

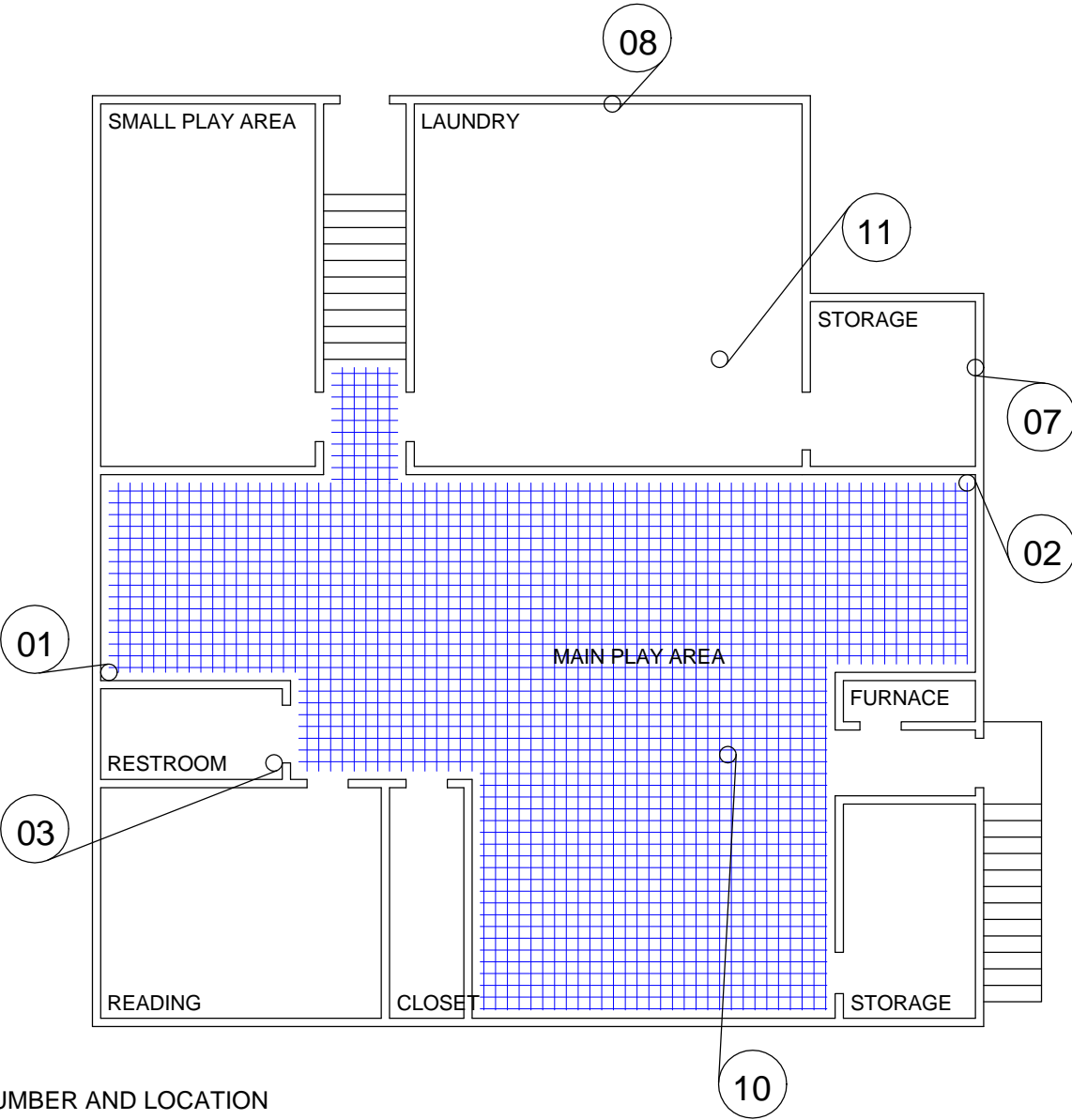


### CHILD CARE HOUSE

### ASBESTOS FLOOR PLAN

SOUTHERN UTAH UNIVERSITY  
43 SOUTH 200 WEST  
OGDEN, UTAH

DFCM PROJECT # 10159300



**##** =SAMPLE NUMBER AND LOCATION

 = VINYL FLOOR TILE



**CHILD CARE HOUSE**  
ASBESTOS FLOOR PLAN

SOUTHERN UTAH UNIVERSITY  
43 SOUTH 200 WEST  
OGDEN, UTAH

DFCM PROJECT # 10159300

## **Appendix C**

# **Photograph Log**

**Photograph Log**  
**Child Care House**  
**Southern Utah University**

1. Exterior view, West Elevation
2. Floor tile contains asbestos. Homogeneous Area M01
3. Floor tile contains asbestos. Homogeneous Area M02



**PHOTO 1**



**PHOTO 2**



**PHOTO 3**

**R & R Environmental, Inc.**  
 47 West 9000 South, Suite #2, Sandy, Utah 84070  
 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:

SCALE:

REVIEWED BY:

DRAWN BY:

DATE:

FILE:

**SITE PHOTOGRAPHS**  
**ASBESTOS SURVEY AND ASSESSMENT**

**CHILD CARE HOUSE**  
**SOUTHERN UTAH UNIVERSITY**  
**43 SOUTH 200 WEST**  
**CEDAR CITY, UTAH 84720**

## **Appendix D**

# **Laboratory Analytical Reports**

# DIXON INFORMATION INC.

MICROSCOPY, ASBESTOS ANALYSIS & CONSULTING  
A.I.H.A. ACCREDITED LABORATORY # 101579  
NVLAP LAB CODE 101012-0

July 30, 2010

Mr. Dave Roskelley  
R&R Environmental  
47 West 9000 South, Unit #2  
Sandy, UT 84070

Ref: Batch # 92047, Lab # RR28693 - RR28703  
Received July 21, 2010  
Test report  
DFCM-SUU-Child Care  
Sampled by Jon Craig on 7/14/2010

Dear Mr. Roskelley:

Samples RR28693 through RR28703 have been analyzed by visual estimation based on EPA-600/M4-82-020 December 1982, and EPA/600/R-93/116 July 1993 optical microscopy test methods. Appendix "A" contains statements which an accredited laboratory must make to meet the requirements of accrediting agencies. It also contains additional information about the method of analysis. This analysis is accredited by NVLAP. Appendix "A" must be included as an essential part of this test report. The data for this report is accredited by NVLAP for laboratory number 101012-0. It does not contain data or calibrations for tests performed under the AIHA program under lab code 101579.

This report may be reproduced but all reproduction must be in full unless written approval is received from the laboratory for partial reproduction. The results of analysis are as follows:

Lab RR28693, Field SUUSCC-01 9" VFT #1, Basement Play  
This is **15% chrysotile asbestos** in a green plastic and limestone tile.

**Note: Asbestos is none detected** in the black tar mastic.

The tile is 98% of the sample. The mastic is 2% of the sample.

Lab RR28694, Field SUUSCC-02 9" VFT #2, Basement Play  
This is **15% chrysotile asbestos** in a off white plastic and limestone tile.

**Note: Asbestos is none detected** in the black tar mastic.

The tile is 98% of the sample. The mastic is 3% of the sample.

Batch # 92047

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Lab RR28695, Field SUUSCC-03 12" VFT #1, Basement Bath

This is a white plastic and limestone tile with clear resin mastic. **Asbestos is none detected.**

The tile is 99% of the sample. The mastic is 1% of the sample.

Lab RR28696, Field SUUSCC-04 RVF #1, 1<sup>st</sup> Bath

This sample has a top layer of tan plastic, a middle layer of white foam plastic, and a bottom layer of 25% plant fiber, 5% synthetic fiber and 5% fiberglass in gray binder with yellow resin mastic.

**Asbestos is none detected.**

The top layer is 20% of the sample. The middle layer is 60% of the sample. The bottom layer is 20% of the sample.

Lab RR28697, Field SUUSCC-05 RVF #2, 1<sup>st</sup> Crib

This sample has a top layer of tan plastic, a middle layer of white foam plastic, and a bottom layer of 25% plant fiber, 5% synthetic fiber and 5% fiberglass in gray binder. **Asbestos is none detected.**

The top layer is 35% of the sample. The middle layer is 35% of the sample. The bottom layer is 30% of the sample.

Lab RR28698, Field SUUSCC-06 RVF #3, Entry

This sample has a top layer of gray plastic, a middle layer of white foam plastic, and a bottom layer of 50% plant fiber and 5% synthetic fiber in gray binder. **Asbestos is none detected.**

The top layer is 20% of the sample. The middle layer is 30% of the sample. The bottom layer is 50% of the sample.

Lab RR28699, Field SUUSCC-07 Plaster, Basement Storage

This sample contains three types of material: The first type is white paint; the second type is white plaster with sand; the third type is off-white plaster with sand, less than 1% vermiculite, and less than 1% organic fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 3% of the sample. The third type is 95% of the sample.

Lab RR28700, Field SUUSCC-08 Plaster, Basement Laundry

This sample contains three types of material: The first type is white paint; the second type is white plaster with sand; the third type is off-white plaster with sand, less than 1% vermiculite, and less than 1% organic fiber. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 2% of the sample. The second type is 3% of the sample. The third type is 95% of the sample.

Batch # 92047

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Lab RR28701, Field SUUSCC-09 Plaster Surfacing TR, 1<sup>st</sup> Living

This sample contains two types of material: The first type is green and white paint; the second type is white limestone plaster . This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 20% of the sample. The second type is 80% of the sample.

Lab RR28702, Field SUUSCC-10 Plaster Surfacing TR, Base. Play

This sample contains two types of material: The first type is green and white paint; the second type is white limestone plaster with perlite. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 20% of the sample. The second type is 80% of the sample.

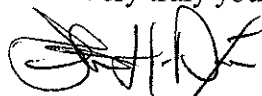
Lab RR28703, Field SUUSCC-11 Plaster Surfacing TR, Laundry

This sample contains two types of material: The first type is green and white paint; the second type is white limestone plaster with perlite. This sample is non-homogeneous. **Asbestos is none detected.**

The first type is 20% of the sample. The second type is 80% of the sample.

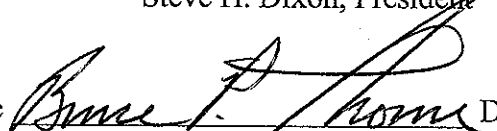
In order to be sure reagents and tools used for analysis are not contaminated with asbestos, blanks are tested. Asbestos was none detected in the blanks tested with this bulk sample set.

Very truly yours,



Steve H. Dixon, President

Analyst: Bruce P. Thorne



Date Analyzed: July 30, 2010



92047

**Bulk Analytical Request Form**

LAB: Dixon Information  
78 West 2400 South  
South Salt Lake, UT 84115  
Ph. 801-486-0800  
Fax. 801-486-0849

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Turnaround Time: Rush Non-Rush 2-hr Rush

Location sample was taken DCM-SUM-Child Care  
Street address where sample was taken \_\_\_\_\_  
Sampled by J. Craig Date of Collection 7/14/10

Report to be sent to: R&R/DCR Billing to be sent to: R&R/DCR  
Name: \_\_\_\_\_ Name: \_\_\_\_\_  
Address: \_\_\_\_\_ Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_  
Zip Code: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Telephone #: \_\_\_\_\_ Telephone #: \_\_\_\_\_  
Fax #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Field #	Description	Date	Lab #
<u>SUB 00-01</u>	<u>9" VET #1 Basement Floor</u>		<u>28693</u>
<u>-02</u>	<u>9" VET #2 Basement Floor</u>		<u>28694</u>
<u>-03</u>	<u>12" VET #1 Basement Bath</u>		<u>28695</u>
<u>-04</u>	<u>VIA #1, Bath</u>		<u>28696</u>
<u>-05</u>	<u>VIA #2, Child</u>		<u>28697</u>
<u>-06</u>	<u>VIA #3, Entry</u>		<u>28698</u>
<u>-07</u>	<u>Plaster, Basement Storage</u>		<u>28699</u>
<u>-08</u>	<u>Plaster, Basement Laundry</u>		<u>28700</u>
<u>-09</u>	<u>Plaster, Basement Living</u>		<u>28701</u>
<u>-10</u>	<u>Plaster, Basement Bed. Floor</u>		<u>28702</u>
<u>-11</u>	<u>Plaster, Basement Laundry</u>		<u>28703</u>

**Chain of Custody**

By submitting asbestos samples for analysis and/or signing a chain of custody, R&R Environmental agrees that this is the equivalent of the submission of a purchase order and agrees to pay for services provided by the analytical laboratory according to its posted standard schedule of fees for services.

Submitted by [Signature] Date 7/20/10 Time 10:30  
Received by Lab [Signature] Date 7-20-10 Time 15:00  
Received by Analyst [Signature] Date 7-31-10 Time 14:00  
Returned by Lab \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

## **Appendix "A"**

"This report relates only to the items tested. This report must not be used to claim product endorsement by NVLAP or AIHA"

NVLAP and AIHA requires laboratories to state the condition of samples received for testing: These samples are in acceptable condition for analysis unless there is a statement in the report of analysis that a test item has some characteristics or condition that precludes analysis or requires a modification of standard analytical methodology. If a test item is not acceptable, the reasons for non-acceptability will be given under the laboratory number for that particular test item.

### **Methods of Analysis and Limit of Detection**

In air count analysis, the results may be biased when interferences are noted.

The accuracy of asbestos analysis in bulk samples increases with increasing concentration of asbestos. Pigments, binders, small size and multiple layers may affect the analysis sensitivity.

There are two methods for analysis of asbestos in a bulk test sample. Visual estimation is the most sensitive method. If an analyst makes a patient search, 0.1% or less asbestos can be detected in bulk sample.

The second method of analysis is a statistical approach called point counting. EPA will not accept visual estimations if a laboratory detects a trace of asbestos in a sample i.e. anything less than 1% asbestos. Government agencies regulate asbestos containing materials (ACM) whenever the ACM is more than 1% OSHA requirements apply on samples containing any amount of asbestos.

Due to the higher charge for a point count analysis, Dixon Information Inc. does not perform a point count unless authorized to do so by the client. If a sample is point counted, when possible, chemical treatments will be used to concentrate the asbestos in the sample. This is permitted by the EPA method and it increases the accuracy of the analysis.