

# NARRATIVE REPORT

## 1.0 BUILDING INFORMATION

Lord & Burnham Greenhouse South was originally constructed in 1957 and included 3 greenhouse ranges; a 1959 addition extended the building to the west adding 2 more greenhouse ranges. Although specific dates are not available, several, small renovations are evident.

Lord & Burnham Greenhouse South is a single-story, 25,000 ft<sup>2</sup> (approx.) building which primarily serves as office areas and work areas for agricultural personnel.

The interior floor finishes included floor tile, wood, and concrete; the interior wall finishes included wood, ceramic block, brick, and glass; and the interior ceiling finishes included wood, transite ceiling panels, and glass. The roofing system is a peaked asphalt shingled roof for the north section of the building and glass sheets for the greenhouse ranges; the exterior of the structure is brick for the north section of the building and glass sheets for the greenhouse ranges.

The piping systems were insulated; fiberglass insulation (both with and without hard fittings) and aircell insulation (with hard fittings) are located in the building. Steam enters the building via a tunnel into room 60 and domestic water enters the building via a tunnel into room 70. HVAC systems located in the building consisted of steam unit heaters and steam radiators.

## 2.0 ASBESTOS SURVEY INFORMATION

Lord & Burnham Greenhouse South was surveyed as part of a larger project on NDSU's Fargo, ND Campus. This report is part of "Volume 3" of a nine volume series. This report includes building specific information only; please refer to the opening section of "Volume 3" for methodologies, definitions, and other pertinent supporting information.

A total of 39 samples were collected from suspect asbestos-containing materials (ACM) from Lord & Burnham Greenhouse South on October 16, 2007 and an additional 8 samples were collected on January 16, 2008. Laboratory analysis results indicate **30 of these samples tested positive for asbestos.**

### 2.1 Suspect Materials Identified and Sampled

Floor Tile	Floor Tile Mastic
Transite Panels (countertops)	Transite Ceiling Panel
Transite Fume Hood	Sink Undercoating
Baseboard Adhesive	Aircell Pipe Insulation
Hard Fittings on Aircell Insulation	Hard Fittings on Fiberglass Insulation
Window Caulk	Transite Panels (workbenches)
Greenhouse Window Glazing (2 types)	Greenhouse Window Glazing on Door
Window Glazing on Door (2 types)	Exterior AC Unit Caulk
Exterior Window Caulk (2 types)	Exterior Window Glazing (2 types)
Exterior Garage Door Caulk	Exterior Door Caulk (3 types)
Exterior Building Seam Caulk	Asphalt Shingle (4 types)
Roof Tarpaper	Roof Flashing
Building Seam Caulk	Door Caulk (2 types)

Tarpaper (under gables) (2 types)

Exterior Panel Caulk

The Asbestos Bulk Sample Results Table includes asbestos sampling data.

2.2 **Asbestos Containing Materials**

- Transite Panels (countertops)
- Transite Ceiling Panels
- Transite Fume Hood
- White Sink Undercoating
- Aircell Pipe Insulation
- Hard Fittings on Aircell Insulation
- Transite Panels (workbenches)
- Greenhouse Window Glazing (1 type)
- Greenhouse Window Glazing on Door
- Window Glazing on Door (2 types)
- Building Seam Caulk
- Door Caulk (1 type)
- Exterior AC Unit Caulk
- Exterior Window Caulk (2 types)
- Exterior Window Glazing (2 types)
- Exterior Door Caulk (3 types)
- Exterior Building Seam Caulk
- Roof Tarpaper
- Roof Flashing
- 9" Floor Tile and Mastic (assumed)

The ACM Locations/ Friable Materials Assessments Table includes ACM locations data.

2.3 **Cost Estimates**

Legend Technical Services Inc. estimates abatement costs (removal & disposal) of ACM for Lord & Burnham Greenhouse South as follows:

ACM	QUANTITY	UNIT COST	TOTAL COST
Asbestos Transite Panels (countertops)	2 ea	\$350.00/ea	\$700.00
Asbestos Transite Ceiling Panels	784 ft <sup>2</sup>	\$5.00/ft <sup>2</sup>	\$3,920.00
Asbestos Transite Fume Hood	1 ea	\$350.00/ea	\$350.00
Asbestos Sink Undercoating	1 ea	\$150.00/ea	\$150.00
Asbestos Aircell Pipe Insulation	905 ft	\$25.00/ft	\$22,625.00
Asbestos Hard Fittings on Aircell Pipe Insulation	34 ea	\$25.00/ea	\$850.00
Asbestos Greenhouse Window Glazing (all types)	1,576 ea	\$25.00/ea	\$39,400.00
Asbestos Window Glazing (all types)	28 ea	\$225.00/ea	\$6,300.00
Asbestos Building Seam Caulk (all types)	50 ft	\$4.00/ft	\$200.00
Asbestos Door Caulk (all types)	11 ea	\$125.00/ea	\$1,375.00
Asbestos AC Unit Caulk	5 ea	\$125.00/ea	\$625.00
Asbestos Window Caulk (all types)	15 ea	\$125.00/ea	\$1,875.00

Asbestos Floor Tile and Mastic	756 ft <sup>2</sup>	\$4.00/ft <sup>2</sup>	\$3,024.00
Asbestos Roof Tarpaper	4,255 ft <sup>2</sup>	\$5.00/ft <sup>2</sup>	\$21,275.00
Asbestos Roof Flashing	22 ea	\$60.00/ea	\$1,320.00
<b>Total Estimated Abatement Costs:</b>			<b>\$103,989.00</b>

2.4 **Survey Notes**

Lord & Burnham Greenhouse South was constructed in several different years (refer to section 1.0 for dates of construction), with greenhouse ranges and adjacent building section being added in different years; each construction section was considered an independent homogeneous area. During the building survey, each suspect material was sampled in each separate homogeneous area. Therefore, materials that may seem identical throughout building will vary from ACM to non-ACM in different homogenous areas as indicated by the asbestos bulk sample results.

LEGEND observed a large quantity of transite panels (workbenches) in the greenhouses. These transite panels are not building materials and were not quantified by LEGEND during the asbestos survey. LEGEND sampled these materials during the survey (samples #19/#20), a review of the results indicate these transite panels (workbenches) contain asbestos.

**LEGEND TECHNICAL SERVICES, INC.**  
ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU)  
LORD & BURNHAM GREENHOUSE SOUTH (BUILDING A029S)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSESS. CAT. <sup>1</sup>	NOTES
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**Room 60** Now 116

Aircell Pipe Insulation	60% Chrysotile	102 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	The aircell pipe insulation is on pipe runs throughout the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	7 fittings	Friable TSI	Good	Air Erosion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	6	None.
Transite Panels (countertop)	15% Chrysotile	1 each	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The transite panels are being used as a countertop in the north end of the room. (approx. size is 12'x5')

**Room 60A** Now 116A

Aircell Pipe Insulation	60% Chrysotile	9 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	The aircell pipe insulation is on a pipe run in the northwest corner of the room.
					Air Erosion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
					Vibration	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		

**Room 60C** Now 126

Aircell Pipe Insulation	60% Chrysotile	15 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	The aircell pipe insulation is on pipe runs in the northwest corner of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Air Erosion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	6	None.
					Vibration	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>		

**Rooms 61A-64B (Greenhouse Range 6)** Now 118-124

Aircell Pipe Insulation	60% Chrysotile	36 feet	Friable TSI	Damaged	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	There is 3 ft in room 62A, 63A, and 63B each; 6 feet in rooms 61A, 61B, and 62B each; and 9 feet where rooms 64A and 64B meet.
Greenhouse Window Glazing	3% Chrysotile	318 windows	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The asbestos greenhouse window glazing is on the interior windows dividing greenhouse rooms from each other.

\* = Non-Friable materials were not assessed

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ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU)  
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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSES. CAT. <sup>1</sup>	NOTES
Greenhouse Window Glazing on Door	2% Chrysotile	1 door	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing is on the door at the south end of rooms 64A/64B.
Window Glazing	5% Chrysotile	2 windows	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing is on the two windows to room 60 (main building) at the north end of rooms 61A and 61B.
Door Caulk	5% Chrysotile	1 door	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos door caulk is on the door to room 60 (main building) at the north end of rooms 61A/61B.

**Room 70** Now 112

Aircell Pipe Insulation	60% Chrysotile	93 feet	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	The aircell pipe insulation is on pipe runs along the south end of the room and crossing the room near room 70B.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	None.

**Room 70B** Now 112B

Aircell Pipe Insulation	60% Chrysotile	58 feet	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	The aircell pipe insulation is on pipe runs along the north end of the room and crossing the center of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	None.
Window Glazing on Door	2% Chrysotile	2 doors	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing is on the doors in the southeast corner of the room.

\* = Non-Friable materials were not assessed

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ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

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LORD & BURNHAM GREENHOUSE SOUTH (BUILDING A029S)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSESS. CAT. <sup>1</sup>	NOTES
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**Rooms 71A-74B (Greenhouse Range 7) Now 112A-114C1A**

Aircell Pipe Insulation	60% Chrysotile	39 feet	Friable TSI	Damaged	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	There is 3 ft in room 72A, 72B, 73A, 73B, 74B, and 73D each; 6 feet in rooms 71A and 71B each; and 9 feet where rooms 74A and 74B meet.
Greenhouse Window Glazing	3% Chrysotile	617 windows	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos greenhouse window glazing is on the interior windows dividing greenhouse rooms from each other.
Greenhouse Window Glazing on Door	2% Chrysotile	13 doors	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing is on the doors throughout the range, including the exterior door on the south end of rooms 74A/74B.
Window Glazing	5% Chrysotile	2 windows	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing is on the two windows to room 70 (main building) at the north end of rooms 71A and 71B.

**Room 80 Now 108**

Aircell Pipe Insulation	60% Chrysotile	99 feet	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	The aircell pipe insulation is on pipe runs along the east and south ends of the room and crossing the center of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	2 fittings	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	None.
Window Glazing on Door	5% Chrysotile	1 door	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing is on the door at the west end of the room (leading to room 90). (one spot on the door only- a repaired section)

**Room 80A Now 108D**

Aircell Pipe Insulation	60% Chrysotile	34 feet	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	The aircell pipe insulation is on pipe runs along the north end of the room and crosses the center of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	None.

\* = Non-Friable materials were not assessed

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ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU)  
LORD & BURNHAM GREENHOUSE SOUTH (BUILDING A029S)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSES. CAT. <sup>1</sup>	NOTES
9" Floor Tile and Mastic	Assumed	340 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The floor tile and mastic were assumed to contain asbestos.
Transite Panels (countertop)	15% Chrysotile	1 each	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The transite panels are being used as a countertop in the center of the room. (approx. size is 8'x5')
Transite Fume Hood	15% Chrysotile	1 each	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The transite fume hood is along the south wall.

**Room 80B** Now 108B

Aircell Pipe Insulation	60% Chrysotile	17 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	The aircell pipe insulation is on pipe runs along the north end of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	None.
9" Floor Tile and Mastic	Assumed	130 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The floor tile and mastic were assumed to contain asbestos.

**Room 80C** Now 108B1

Aircell Pipe Insulation	60% Chrysotile	8 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	The aircell pipe insulation is on pipe runs in the northeast corner of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	None.
9" Floor Tile and Mastic	Assumed	130 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The floor tile and mastic were assumed to contain asbestos.

\* = Non-Friable materials were not assessed

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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSESS. CAT. <sup>1</sup>	NOTES
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**Room 80D (and small hallway) Now 108C**

Aircell Pipe Insulation	60% Chrysotile	6 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	The aircell pipe insulation is on pipe runs along the north end of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Air Erosion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	6	None.
9" Floor Tile and Mastic	Assumed	111 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	Vibration	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	N/A*	The floor tile and mastic were assumed to contain asbestos.

**Room 80W Now 199W**

9" Floor Tile and Mastic	Assumed	49 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The floor tile and mastic were assumed to contain asbestos.
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**Rooms 81A-84B (Greenhouse Range 8) Now 108A-110C1A**

Aircell Pipe Insulation	60% Chrysotile	45 feet	Friable TSI	Damaged	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	There is 3 ft in room 82A, 82B, 82C, 82d, 83B, 83C, and 83D each; 6 ft in rooms 81A and 81B each; and 12 ft where rooms 84A and 84B meet.
Greenhouse Window Glazing	3% Chrysotile	617 windows	Non-Friable Miscellaneous	N/A*	Air Erosion	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	N/A*	The asbestos greenhouse window glazing is on the interior windows dividing greenhouse rooms from each other.
Greenhouse Window Glazing on Door	2% Chrysotile	10 doors	Non-Friable Miscellaneous	N/A*	Vibration	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	N/A*	The asbestos window glazing is on the doors throughout the range, including the exterior door on the south end of rooms 84A/84B.
Window Glazing	5% Chrysotile	2 windows	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The asbestos window glazing is on the two windows to room 80 (main building) at the north end of rooms 81A and 81B.

\* = Non-Friable materials were not assessed



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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSESS. CAT. <sup>1</sup>	NOTES
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**Room 90** Now 104

Aircell Pipe Insulation	60% Chrysotile	47 feet	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	The aircell pipe insulation is on pipe runs along the south and east ends of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	None.
Building Seam Caulk	3-5% Chrysotile	20 feet	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos building seam caulk is in the southeast corner of the room and on a wall between the doors for rooms 90A and 90B.
Door Caulk	5% Chrysotile	2 doors	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos caulk is around the doors for room 90A and 90B.
Transite Ceiling Panels	15% Chrysotile	56 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The transite ceiling panels are in the north end of the room between rooms 90B and 90C.

**Room 90A** Now 104D

Aircell Pipe Insulation	60% Chrysotile	27 feet	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	The aircell pipe insulation is on pipe runs along the east end of the room.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	None.
9" Floor Tile and Mastic	Assumed	336 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The floor tile and mastic were assumed to contain asbestos.
White Sink Undercoating	15% Chrysotile	1 sink	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos undercoating is on the sink in the south end of the room.

\* = Non-Friable materials were not assessed

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LEGEND No. 0700048 (NDSU)  
LORD & BURNHAM GREENHOUSE SOUTH (BUILDING A029S)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSES. CAT. <sup>1</sup>	NOTES
Transite Fume Hood	15% Chrysotile	1 each	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The transite fume hood is in the southeast corner of the room.
Building Seam Caulk	5% Chrysotile	10 feet	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos building seam caulk is in the north east corner of the room.

**Room 90C** Now 104B

Transite Ceiling Panels	15% Chrysotile	143 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The transite ceiling panels are in the north end of the room above the reinforced fiberboard.
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**Rooms 91A-94B (Range 9)** Now 104A-106E

Aircell Pipe Insulation	60% Chrysotile	48 feet	Friable TSI	Damaged	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		1	There is 3 ft in 92A, 92B, 92C, 92D, 93A, 93B, 93C, and 93D each; 6 ft in 91A and 91B each; and 12 feet where rooms 94A and 94B meet.
Window Glazing	5% Chrysotile	2 windows	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing is on the north windows in rooms 91A and 91B.
Door Caulk	5% Chrysotile	1 door	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos door caulk is on the door to room 90 (main building) at the north end of rooms 91A/91B.

**Room 100**

Aircell Pipe Insulation	60% Chrysotile	144 feet	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	The aircell pipe insulation is on pipe runs along the south wall and into room 100A.
Hard Fittings on Aircell Insulation	40% Chrysotile	1 fitting	Friable TSI	Good	Physical <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> Air Erosion <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Vibration <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		6	None.

\* = Non-Friable materials were not assessed

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ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSES. CAT. <sup>1</sup>	NOTES
Transite Ceiling Panels	15% Chrysotile	585 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The transite ceiling panels are in the north end of the room.

**Rom 100A** Now 100B

Aircell Pipe Insulation	60% Chrysotile	17 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	The aircell pipe insulation is on pipe runs along the east wall.
					Air Erosion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
					Vibration	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		

**Rooms 101A-104B (Range 10)** Now 100A-102E

Aircell Pipe Insulation	60% Chrysotile	48 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	There is 3 ft in 102A, 102B, 102C, 102D, 103A, 103B, 103C, 103D each; 6 ft in 101A and 101B each; and 12 feet total in rooms 104A /104B.
					Air Erosion	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>		
					Vibration	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Window Glazing	5% Chrysotile	2 windows	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing is on the north windows in rooms 101A and 101B
Door Caulk	5% Chrysotile	1 door	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos door caulk is on the door to room 100 (main building) at the north end of rooms 101A/101B.

**Attic**

Aircell Pipe Insulation	60% Chrysotile	30 feet	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	The aircell pipe insulation is in 5 locations in the attic; above the entrances to the 5 greenhouse ranges.
					Air Erosion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
					Vibration	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Hard Fittings on Aircell Insulation	40% Chrysotile	15 fittings	Friable TSI	Good	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	6	None.
					Air Erosion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
					Vibration	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		

\* = Non-Friable materials were not assessed

**LEGEND TECHNICAL SERVICES, INC.**  
ACM LOCATIONS/FRIABLE MATERIALS ASSESSMENTS TABLE

LEGEND No. 0700048 (NDSU)  
LORD & BURNHAM GREENHOUSE SOUTH (BUILDING A029S)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSESS. CAT. <sup>1</sup>	NOTES
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**Exterior**

Window Glazing and Caulk	3-10% Chrysotile	15 <b>13</b> windows <b>June 2008</b>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos window glazing and caulk is on the exterior windows of the main building (note some of the windows are boarded up).
AC Unit Caulk	15% Chrysotile	5 windows <b>4</b> <b>June 2008</b>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos AC unit caulk is on the exterior north wall from rooms 60, 70B, 80A, 80C, and 90A.
Door Caulk	3% Chrysotile	5 doors	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos door caulk is on all exterior east, south, and west doors from the main building.
Building Seam Caulk	5% Chrysotile	20 ft	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The exterior asbestos building seam caulk is located b/n rooms 80 and 90 on the north and south ends.
Door Caulk (boarded-up door)	3% Chrysotile	1 ea	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The door leading to room 80D has been boarded up. The caulk around it is an ACM.

**Roof**

Roof Tar Paper	15% Chrysotile	4,255 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The asbestos tar paper is under the shingles on the roof.
Roof Flashing	10% Chrysotile	22 ea	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	There are 9 air vents, 7 sewer vents, 4 other vents, and 2 other penetrations on the roof.

<sup>1</sup>Assessment Categories:

- |   |   |
|---|---|
| 1) Damaged or Significantly Damaged TSI ACM                   | 5) ACM with Potential for Damage                      |
| 2) Damaged Friable Surfacing ACM                              | 6) ACM with Potential for Significant Damage          |
| 3) Significantly Damaged Friable Surfacing ACM                | 7) Any Remaining Friable ACM or Friable Suspected ACM |
| 4) Damaged or Significantly Damaged Friable Miscellaneous ACM |   |

**End**

\* = Non-Friable materials were not assessed