

# NARRATIVE REPORT

## 1.0 BUILDING INFORMATION

Memorial Union was originally constructed in 1952; additions and renovations in 1957, 1958, 1963, 1971, 1981, 1987, 1993, and 2007 have extended the original building in all directions.

Memorial Union is a three-story, 144,218 ft<sup>2</sup> building which primarily serves as student services areas and student dining areas. Family Life Center (A083) and E Morrow Lebedeff Hall (A007) attached to the north side of Memorial Union and are reported separately.

The interior floor finishes included floor tile, concrete, carpet, terrazzo, wood, and ceramic tile; the interior wall finishes included concrete, gypsum wallboard, plaster, concrete block, ceramic block, ceramic tile, and reinforced fiberboard; and the interior ceiling finishes included plaster, gypsum wallboard, ceiling tile, concrete, and metal. The roofing system is a flat rubber-membrane roof and the exterior of the structure is brick.

The piping systems were insulated; fiberglass insulation (with and without hard fittings) and neoprene insulation is located in the building. Steam and domestic water enter the building via a tunnel in room 74B1A. HVAC systems located in the building consisted of forced air furnaces with equipped with heating/cooling coils throughout the building.

## 2.0 ASBESTOS SURVEY INFORMATION

Memorial Union was surveyed as part of a larger project on NDSU's Fargo, ND Campus. This report is part of "Volume 1" of a nine volume series. This report includes building specific information only; please refer to the opening section of "Volume 1" for methodologies, definitions, and other pertinent supporting information.

Memorial Union was partially surveyed by LEGEND as directed by NDSU. LEGEND walked through the building and visually inspected for suspect asbestos containing materials that were present prior to the 2007 addition and renovation; any building materials added during the 2007 addition and renovation were not included in this survey. For the purpose of this report, the 2007 building and the 2007 renovated areas are a separate structure and are not included in this report.

A total of 115 samples were collected from suspect asbestos-containing materials (ACM) from Memorial Union on October 23, 2007 and an additional 3 samples were collected on January 17, 2008. Laboratory analysis results indicate **14 of these samples tested positive for asbestos.**

### 2.1 Suspect Materials Identified and Sampled

Gypsum Wallboard (13 types)	Joint Compound (13 types)
Plaster- Skimcoat (2 types)	Plaster- Basecoat (2 types)
Plaster- Monocoat (1 types)	Floor Tile (14 types)
Floor Tile Mastic (15 types)	Ceiling Tile (8 types)
Baseboard Adhesive (3 types)	Carpet Mastic (4 types)
Fireproofing (on structural steel)	Pyrobar
Fireplace Brick	Sink Undercoating
Penetration Caulk (residual)	Glue Pucks (residual)
Hard Fittings on Fiberglass Insulation	Encapsulant on Fiberglass Insulation

Window Glazing on Door  
 Exterior Window Caulk (residual)  
 Exterior Window Glazing  
 Exterior Window Glazing on Door  
 Roof Crowning Caulk

Exterior Building Seam Caulk  
 Exterior Window Caulk  
 Exterior Door Caulk  
 Exterior Penetration Putty  
 Roof Caulk (on 4 abandoned supports)

The Asbestos Bulk Sample Results Table includes asbestos sampling data.

2.2 **Asbestos Containing Materials**

9" Floor Tile and Mastic (assumed)  
 Residual Floor Tile  
 Mastic for 12" Light Green FT, 12" Dark Green FT, and 12" White FT w/ multicolored streaks  
 12" Black Floor Tile  
 12" Gray Floor Tile and Mastic  
 1'x1' Ceiling Tile w/ Fissures and Pinholes  
 Hard Fittings on Fiberglass Insulation  
 Window Glazing on Door  
 Exterior Window Caulk  
 Exterior Window Caulk (residual)  
 Exterior Window Glazing on Door

2.3 **Cost Estimates**

ACM	QUANTITY	UNIT COST	TOTAL COST
Asbestos Floor Tile and/or Floor Tile Mastic	7,668 ft <sup>2</sup>	\$4.00/ ft <sup>2</sup>	\$30,672.00
Asbestos Ceiling Tile	420 ft <sup>2</sup>	\$5.00/ ft <sup>2</sup>	\$2,100.00
Asbestos Hard Fittings on Fiberglass Insulation	38 ea	\$60.00/ ea	\$2,280.00
Asbestos Window Glazing on Door (all types)	2 ea	\$225.00/ ea	\$450.00
Asbestos Window Caulk (all types)	31 ea	\$125.00/ ea	\$3,875.00
<b>Total Estimated Abatement Costs:</b>			<b>\$39,377.00</b>

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

LEGEND No. 0700048 (NDSU)  
MEMORIAL UNION (BUILDING A006)

ROOM/ ACM	ASBESTOS TYPE	EST. QUANTITY	ACM TYPE	MATERIAL CONDITION	DAMAGE POTENTIAL	LOW MOD HIGH	ASSES. CAT. <sup>1</sup>	NOTES
<b>Room 64C</b> <span style="border: 1px solid red; padding: 2px;">Abated with Union Remodel 2007</span>								
<del>Hard Fittings on Fiberglass Insulation</del>	5% Chrysotile 5% Amosite	10 ea	Friable TSI	Good	Physical Air Erosion Vibration	■□□ ■□□ ■□□	7	The hard fittings are above the ceiling tile.
<b>Room 88L</b> <span style="border: 1px solid red; padding: 2px;">Abated with Union Remodel 2007</span>								
<del>Hard Fittings on Fiberglass Insulation</del>	5% Chrysotile 5% Amosite	2 ea	Friable TSI	Good	Physical Air Erosion Vibration	■□□ ■□□ ■□□	7	The hard fittings are above the ceiling tile.
<b>Room 90</b>								
Mastic for 3 Floor Tile Types	5% Chrysotile	688 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The mastic is under the 12" Light Green Floor Tile, 12" Dark Green Floor Tile, and 12" White Floor Tile w/ Multicolored Streaks. Mastic only.
<b>Room 148</b> <span style="border: 1px solid red; padding: 2px;">Abated with Union Remodel 2007</span>								
<del>9" Floor Tile and Mastic</del>	Assumed	3,284 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The floor tile and mastic were assumed to be ACMs.
<del>Residual Floor Tile Mastic</del>	10% Chrysotile	3,284 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	None
<del>Hard Fittings on Fiberglass Insulation</del>	5% Chrysotile 5% Amosite	26 ea	Friable TSI	Good	Physical Air Erosion Vibration	■□□ ■□□ ■□□	7	The hard fittings are in a soffit on the east end of the room.
<b>Room 177S4</b>								
Window Glazing on Door	3% Chrysotile	1 ea	Non-Friable Miscellaneous	N/A*	N/A*		N/A*	The door is in the northwest corner of the stairwell, leading to room 148.

\* = 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
1'x1' Ceiling Tile w/ Fissures and Pinholes	3% Amosite	180ft <sup>2</sup>	Friable Miscellaneous	Damaged	Physical Air Erosion Vibration	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	4	None.
<b>Room 228B3</b> Abated March 2008								
<del>12" Black Floor Tile</del>	2% Chrysotile	90 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The floor tile contains asbestos, the mastic is negative.
<b>Room 228B4</b> Abated March 2008								
<del>12" Black Floor Tile</del>	2% Chrysotile	120 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The floor tile contains asbestos, the mastic is negative.
<b>Room 228B5</b> Abated March 2008								
<del>12" Black Floor Tile</del>	2% Chrysotile	90 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The floor tile contains asbestos, the mastic is negative.
<b>Room 248A (and small closet north of 248A)</b> Abated with Union Remodel 2007								
<del>12" Gray Floor Tile and Mastic</del>	3-5% Chrysotile	87 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The floor tile and mastic both contain asbestos.
<b>Room 248B</b> Abated with Union Remodel 2007								
<del>12" Gray Floor Tile and Mastic</del>	3-5% Chrysotile	25 ft <sup>2</sup>	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	N/A*	The floor tile and mastic both contain asbestos.

\* = Non-Friable materials were not assessed

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LEGEND No. 0700048 (NDSU)  
MEMORIAL UNION (BUILDING A006)

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 277S4**

1'x1' Ceiling Tile w/ Fissures and Pinholes	3% Amosite	240ft <sup>2</sup>	Friable Miscellaneous	Damaged	Physical	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	4	None.
					Air Erosion	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
					Vibration	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		

**Exterior**

Window Glazing on Door	5% Chrysotile	1 ea	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The door is the entry door to penthouse room 301.
Window Caulk	3% Chrysotile	4 ea	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The caulk is around the windows on 1 <sup>st</sup> , 2 <sup>nd</sup> , and 3 <sup>rd</sup> floor in the northwest stairwell and around the window for room 206.
Residual Window Caulk	3% Chrysotile	27 ea	Non-Friable Miscellaneous	N/A*	N/A*	N/A*	The residual caulk is around the windows for rooms 102, <del>178C, 178D, 178E</del> , 202, 250B, 250C, 254B, 246E, 246F, 246G, <del>246H</del> , and <del>288</del> .

<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**