



**Holiday Park Golf Course
1630 Avenue U South, Saskatoon, SK.**



**Asbestos Survey Report
January 2014**

Prepared For: City Of Saskatoon- Infrastructure Services Department
1101 Avenue P North, Saskatoon, SK.
Attn: Brent Anderson

Prepared By: Bersch & Associates Ltd.
Project No. : B67SRA28

1.0 EXECUTIVE SUMMARY

The survey of the Holiday Park Golf Course located in Saskatoon, Saskatchewan entailed the inspection of all accessible suspect asbestos containing material (ACM) located throughout the facility. Materials inspected included mechanical insulating material, vinyl floor covering, vermiculite insulation and ceiling tiles.

Bersch & Associates Ltd. implemented the use of doorjamb labels that are applied to every doorjamb of the rooms containing asbestos within the facility. This permits anyone accessing the room to easily identify the ACM present without having to reference the written report. Legends providing explanation of the abbreviations used on door jambs were placed on the backside of all maintenance/custodial doors within the facility. Employees and contractors will use the legend as a reference to identify ACM within the areas they are working.

Bulk sample analysis results indicate the presence of “Chrysotile” asbestos within the Holiday Park Golf Course located in Saskatoon, SK. The recommended action to be implemented in reference to the ACM identified is Management. Please refer to section 5 Asbestos Abatement Discussion. It should be noted that the recommendation of “Management” as part of the asbestos action plan is based upon the premise that renovations are not scheduled throughout the area that would impact the asbestos containing material present. *Prior to any major renovation/demolition activity, a destructive investigation is recommended to identify any inaccessible ACM that is physically concealed or isolated in areas such as enclosed wall/ceiling/floor cavities and pipe chases.* Asbestos was detected in the following forms throughout the facility:

- **Pipeline Fitting Compound** is located within the utility room 118.
- **Asbestos Floor Tile** is located in kitchen storage 123 within the facility.
- **Vermiculite Insulation** is located in the corridor 102 within the facility.

The various types of accessible ACM within the facility have been clearly identified to eliminate uncertainty of asbestos content. The identification of these materials is as follows:

- All accessible asbestos-containing pipeline fittings have been identified with a red dot of spray paint. **All pipefitting mud compound located within enclosed or inaccessible areas shall assume to be asbestos containing until laboratory analysis proves otherwise.**
- Asbestos Floor Tile is identified on the Floor Plans in Appendix III of this report.
- Vermiculite Insulation is identified on the spreadsheet in Appendix II of this report.

Please refer to *Appendix I* for **Bulk Sample Analysis** results.

Throughout the survey of the Holiday Park Golf Course the Asbestos Containing Materials were assessed and given a Priority Rating of One, Two or Three, with Priority One being the items requiring the most immediate attention. See the Survey Spreadsheet Database in Appendix II for a room-by-room account.

2.0 INTRODUCTION

Bersch & Associates Ltd. was retained by the City of Saskatoon to conduct an Asbestos Survey and Hazard Assessment of the Holiday Park Golf Course located in Saskatoon, SK. The survey entailed the inspection of all accessible areas of the facility; including crawlspaces, ceiling spaces, pipe chases, and attics. The purpose of the survey was to locate, identify and assess the condition of all Asbestos Containing Materials (ACM) located throughout the facility. This report gives a detailed account of the inspection results and our firm's recommendations on control options to be implemented to bring the facility in compliance with the Province of Saskatchewan Occupational Health and Safety Act and Regulations. Bersch & Associates Ltd. conducted the survey in January 2014. A review of this report shall be conducted with all trades that are entering the facility to perform maintenance or renovation activity. This will ensure they are familiar with the types and locations of asbestos-containing materials present and prevent any uncontrolled disturbance and/or possible exposure to asbestos.

3.0 METHODOLOGY

Bersch & Associates Ltd. began conducting the survey of the Holiday Park Golf Course in Saskatoon, SK in January of 2014. The primary documents for guidance and criteria in this survey were the Province of Saskatchewan "Occupational Health and Safety Act and Regulations, 1996", Province of Saskatchewan "Managing Asbestos", and the U.S. Environmental Protection Agency "Guidance for Controlling Asbestos Containing Materials in Buildings". The USEPA document identifies factors associated with the "condition" and the "potential for disturbance or erosion" of asbestos containing materials (ACM). These factors help to determine potential for exposure to ACM and were used to make a qualitative evaluation of the material. It should be noted that the recommendation of "Management" Asbestos Abatement Action is based upon the premise that renovations are not scheduled in that area that will require disturbing or violating the asbestos containing material. In the event that renovations are scheduled that impact upon the areas of asbestos containing material then pre-removal of the asbestos containing materials may be necessary.

In total, ten (10) bulk samples of suspect asbestos-containing materials were collected throughout the facility. Chrysotile asbestos was identified within the samples collected. Refer to Appendix I for a copy of the Bulk Sample Analysis Report. All bulk samples collected were analyzed by Bersch & Associates Ltd. laboratory in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as <1% by volume.

4.0 RECOMMENDATIONS:

Throughout the survey of the Holiday Park Golf Course the Asbestos Containing Materials were assessed and given a Priority Rating of One, Two or Three, with Priority One being the items requiring the most immediate attention. As a result, “Priority One” items were identified in the form of vermiculite insulation on the ceiling tile within corridor 102. Priority Ratings for all ACM identified is found in the database on a room-by-room account.

5.0 ASBESTOS ABATEMENT DISCUSSION

Asbestos is a known carcinogen and is listed in the Province of Saskatchewan under the Occupational Health and Safety Appendix, Part V as a Hazardous Chemical Substance and any release of asbestos fibres into the atmosphere creates a potential health hazard. Although the mechanism and epidemiology of asbestos carcinogenesis is not yet well defined, accumulating evidence suggests the significance of exposure at even very low fibre concentrations and hence human exposure should be kept to a minimum. It should be noted however that asbestos is a natural mineral and a measurable background concentration can be detected in any location sampled (inside buildings, outside buildings, urban, rural, etc.). The recommendations of the report are therefore intended to keep the potential exposure to an absolute minimum with the knowledge that a zero exposure is not possible.

Asbestos containing materials have been used in a wide variety of applications. Of particular concern, is the group of so called friable products. A friable product is one that can be crumbled or reduced to powder or smaller fragments by hand pressure. Publications from the U.S.E.P.A. as early as 1977 have indicated the potential hazard of asbestos exposure in buildings containing these friable products. The two main uses of friable asbestos products are as spray insulation (thermal, acoustic or fireproofing) on deck and/or beams or as thermal insulation on piping or mechanical equipment. A large amount of non-friable asbestos-containing materials have also been used in building construction such as asbestos cement board and asbestos containing vinyl flooring.

The mere presence of a friable asbestos containing material does not imply that there is an actual presence of elevated airborne fibre. As numerous studies have indicated, elevated asbestos fibre levels are generally found when settled dust or the actual asbestos containing material itself is disturbed by maintenance, renovation, inadvertent contact or vibration. The factors considered in the Environmental Protection Agency (USEPA) exposure assessment (condition of material, water damage, activity, movement, exposed surface area, accessibility, friability and presence in an air stream) often give some indication of the likelihood of fibre release but are not in any way definitive in determining whether a hazard exists or not. That is, even if the most friable product exists in a building, elevated fibre levels will not likely occur unless there is some disturbance by physical contact, vibration or an air stream.

There are four possible approaches to control exposure to airborne asbestos once a friable material is identified in a building. These methods briefly are as follows:

- A) Removal** - Asbestos material is removed and disposed of by burial and replaced by non-asbestos materials.
- B) Encapsulation** - Asbestos material is coated with a bridging or penetrating sealant.
- C) Enclosure** - Asbestos containing materials are separated from the building environment by barriers such as suspended ceilings or cladding materials.
- D) Deferred Action or Management and Custodial Control** - The Province of Saskatchewan Human Resources, Labor and Employment Branch under the Occupational health and Safety Regulations publish a document outlining “The Management of Asbestos”. In the guide for compliance, an action plan is outlined for management of the asbestos materials identified and in summary is:
1. Identification, which has been accomplished by this report.
 2. Development of Written Handling Procedures for maintenance personnel or often arrangements are made for a qualified contractor to conduct the necessary removal or spot maintenance prior to the regular staff conducting maintenance.
 3. Asbestos Abatement Awareness and Process Training if the regular maintenance personnel are required to conduct asbestos related activities.
 4. Inspection on regular basis is conducted to determine the ongoing condition of the material. Sask. Occupational Health & Safety Regulations require an “annual” inspection of all “friable” asbestos materials by a competent person.

In the event renovations or maintenance is performed within areas containing asbestos materials, written procedures must be developed to conduct the activity or prior removal if the situation warrants.

6.0 REFERENCES

- .1 Province of Saskatchewan "The Occupational Health and Safety Act and The Occupational Health and Safety Regulations" Office Consolidation, December 1996.
- .2 Province of Saskatchewan Human Resources, Labor, and Employment "The Management of Asbestos" January, 1991.
- .3 USEPA, 1985. U.S. Environmental Protection Agency, "Guidance for Controlling Asbestos-Containing Materials in Buildings". Washington, DC: Office of Toxic Substances, USEPA.
- .4 Midwest Centre for Occupational Health & Safety St. Paul's, Minnesota – Asbestos Training For Inspectors & Management Planners
- .5 McCrone Research Institute Course Hayward California " Asbestos Identification"
- .6 Environment Management and Protection Act, Saskatchewan Environment, October 2002
- .7 Hazardous Substances and waste Dangerous Goods Regulations, Saskatchewan Environment, April 1989

APPENDIX I

BULK SAMPLE ANALYSIS REPORT

BERSCH & ASSOCIATES LTD.

January 28, 2014

City Of Saskatoon
Infrastructure Services Department
1101 Avenue P North
Saskatoon, Sk.
S7L 7K6

ATTENTION: Brent Anderson

SUBJECT: Bulk Sample Analysis Report

Please find attached the laboratory results for the bulk analysis of the samples collected throughout the Holiday Park Golf Course located at 1630 Avenue U South in Saskatoon, SK. The samples were analyzed in our laboratory for the identification of asbestos.

The results for the bulk samples were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume.

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client. If any questions arise on the results of the attached information please contact me at 306 222 7477. Thank you for this opportunity of service!

Sincerely,

Brad Berschiminsky
Bersch & Associates Ltd.
File: B67BLA28

Bersch & Associates Ltd.

B67BAE16

Box 3568

Humboldt, Sask. S0K 2A0

BULK SAMPLE ANALYSIS REPORT**PROJECT NO. B67.13****CLIENT: City of Saskatoon****Infrastructure Services - Facilities Branch****Contact: Brent Anderson****Location: Holiday Park Golf Clubhouse - 1630 Avenue U South, Saskatoon, SK.**

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
1	16-May-13	119 - Pipeline fitting above hot water heater	Chrysotile	60	WB
2	16-May-13	102 Corridor - Vermiculite insulation found on top of suspended ceiling tiles adjacent 108	Actinolite/ Tremolite	> 0.1	WB
3	16-May-13	107 - 1' x 1' floor tile, white with brown streak	None detected		WB
4	28-Jan-14	B02- Rubber-like black flooring	None detected		WB
5	28-Jan-14	117- Rudder- like 2' x 2' brownish flooring	None detected		WB
6	28-Jan-14	118- Sheet flooring grey with white and black stones	None detected		WB

Bersch & Associates Ltd.

B67BAE16

Box 3568
Humboldt, Sask. S0K 2A0**BULK SAMPLE ANALYSIS REPORT****PROJECT NO. B67.13****CLIENT: City of Saskatoon****Infrastructure Services - Facilities Branch****Contact: Brent Anderson****Location: Holiday Park Golf Clubhouse - 1630 Avenue U South, Saskatoon, SK.**

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
7	28-Jan-14	123- 1' x 1' floor tile orange with white streak	None detected		WB
8	28-Jan-14	116- Sheet flooring tiny irregular blue stone pattern	None detected		WB
9	28-Jan-14	104- 1' x 1' 3- toned grey floor tile	Chrysotile	1 to 5	WB
10	28-Jan-14	102 Corridor- 2' x 4' ceiling tile	None detected		WB

BULK SAMPLE PHOTOS

#1) Pipeline Fitting



#2) Vermiculite Insulation



#3) Floor Tile



APPENDIX II

ASBESTOS SURVEY DATABASE

Bersch & Associates LTD.

			SAMPLE DATA													
Floor	Room Number	Use	SAMPLE SAMPLE REP	Sample ID	Date DD/MM/YY	Asbestos Type	% of Asbestos	Tradename ACM Product	Condition	Priority	Description of Sample Location	Asbestos Content In Area	Potential for Disturbance	Recommended Action	Comments	
B	01	Cart Storage Area										No Accessible ACM				
B	02	Driving Range Storage	Sample	B67-ASB.4	28-Jan-14	None		Flooring			B02- Rubber-like black flooring	No Accessible ACM				
B	03	Rental Clubs and Cart Storage										No Accessible ACM				
B	04	Pro Shop Stock Room										No Accessible ACM				
B	05	Washroom										No Accessible ACM				
B	06	Storage										No Accessible ACM				
B	07	Furnace Room										No Accessible ACM				
M	101	Corridor										No Accessible ACM				
M	102	Corridor	Sample	B67-ASB.2	16-May-13	Actinolite/ Tremolite	>0.1	Vermiculite	Poor	1	102 Corridor - Vermiculite insulation found on top of suspended ceiling tiles adjacent 108	Vermiculite	Low/Mod	Cleanup/Manage	Clean up vermiculite laying on ceiling tile adjacent 108.	
M	102	Corridor	Sample	B67-ASB.10	28-Jan-14	None		Ceiling Tiles			102 Corridor- 2' x 4' ceiling tile	No Accessible ACM				
M	103	Lounge										No Accessible ACM				
M	104	Bar	Sample	B67-ASB.9	28-Jan-14	Chrysotile	1-5%	Vinyl Asbestos Tile	Good	3	104- 1' x 1' 3- toned grey floor tile	Vinyl Asbestos Tile	Low	Manage		
M	105	Bottle Storage										No Accessible ACM				
M	106	Cooler										No Accessible ACM				
M	107	Maintenance	Sample	B67-ASB.3	16-May-13	None		Vinyl Floor Tile			107 - 1' x 1' floor tile, white with brown streak	No Accessible ACM				
M	108	Entrance										No Accessible ACM				
M	109	Women's Locker Room										No Accessible ACM				
M	110	Women's Locker Room										No Accessible ACM				
M	111	Women's Shower										No Accessible ACM				
M	112	Entrance										No Accessible ACM				
M	113	Men's Locker Room										No Accessible ACM				
M	114	Men's Shower										No Accessible ACM				
M	115	Men's Washroom										No Accessible ACM				
M	116	Ladies Washroom	Sample	B67-ASB.8	28-Jan-14	None		Vinyl Sheet Flooring			116- Sheet flooring tiny irregular blue stone pattern	No Accessible ACM				
M	117	Cafeteria	Sample	B67-ASB.5	28-Jan-14	None		Vinyl Floor Tile			117- Rudder- like 2' x 2' brownish flooring	No Accessible ACM				
M	118	Servery	Sample	B67-ASB.6	28-Jan-14	None		Vinyl Sheet Flooring			118- Sheet flooring grey with white and black stones	No Accessible ACM				
M	119	Utility	Sample	B67-ASB.1	16-May-13	Chrysotile	60%	Pipeline Fitting Compound	Good	3	119 - Pipeline fitting above hot water heater	Pipeline Fitting Compound	Low	Manage		
M	120	Electrical										No Accessible ACM				
M	121	Entrance										No Accessible ACM				
M	122	Utility Vestibule										No Accessible ACM				
M	123	Kitchen Storage	Sample	B67-ASB.7	28-Jan-14	None		Vinyl Floor Tile			123- 1' x 1' floor tile orange with white streak	No Accessible ACM				
M	124a	Office										No Accessible ACM				
M	124b	Storage										No Accessible ACM				
M	125a	Mezzanine										No Accessible ACM				
M	125b	Dressing Room										No Accessible ACM				
M	126	Storage										No Accessible ACM				
M	127	Pro Shop										No Accessible ACM				
M	128	Storage										No Accessible ACM				



Exterior Walls "Red brick exterior walls suspected of containing asbestos vermiculite."

Room 122 Utility Vestibule "Red brick exterior wall suspected of containing asbestos vermiculite."

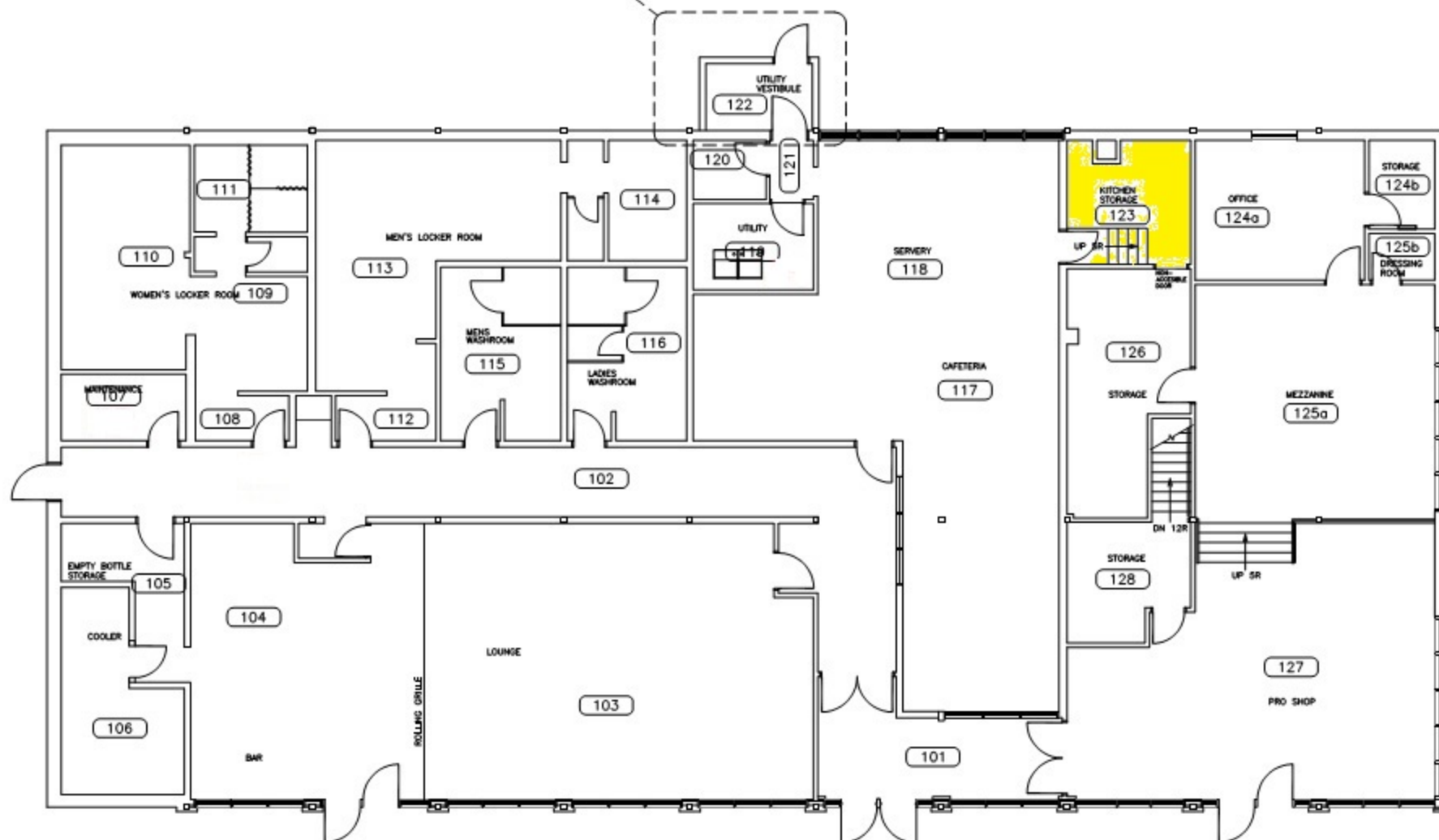
Room 116 Ladies Washroom "White painted brick wall suspected of containing asbestos vermiculite."

APPENDIX III

FLOOR PLANS

GENERAL NOTES:

1. All dimensions are in millimetres
2. Drawings are not to be scaled.
3. All drawings to be read in conjunction with the specifications, unless otherwise noted.
4. Verify site conditions and location of all utilities prior to the start of construction.
5. Report all discrepancies to the Consultant.
6. If in doubt, ask.



REV	ISSUED FOR	DATE
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DESIGNED BY	DRAWN BY	CHECKED BY	REQUESTED BY
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SCALE	DATE
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1:125	dd/mm/yy
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SHEET NAME	ASUILT
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Main Floor
Base Plan

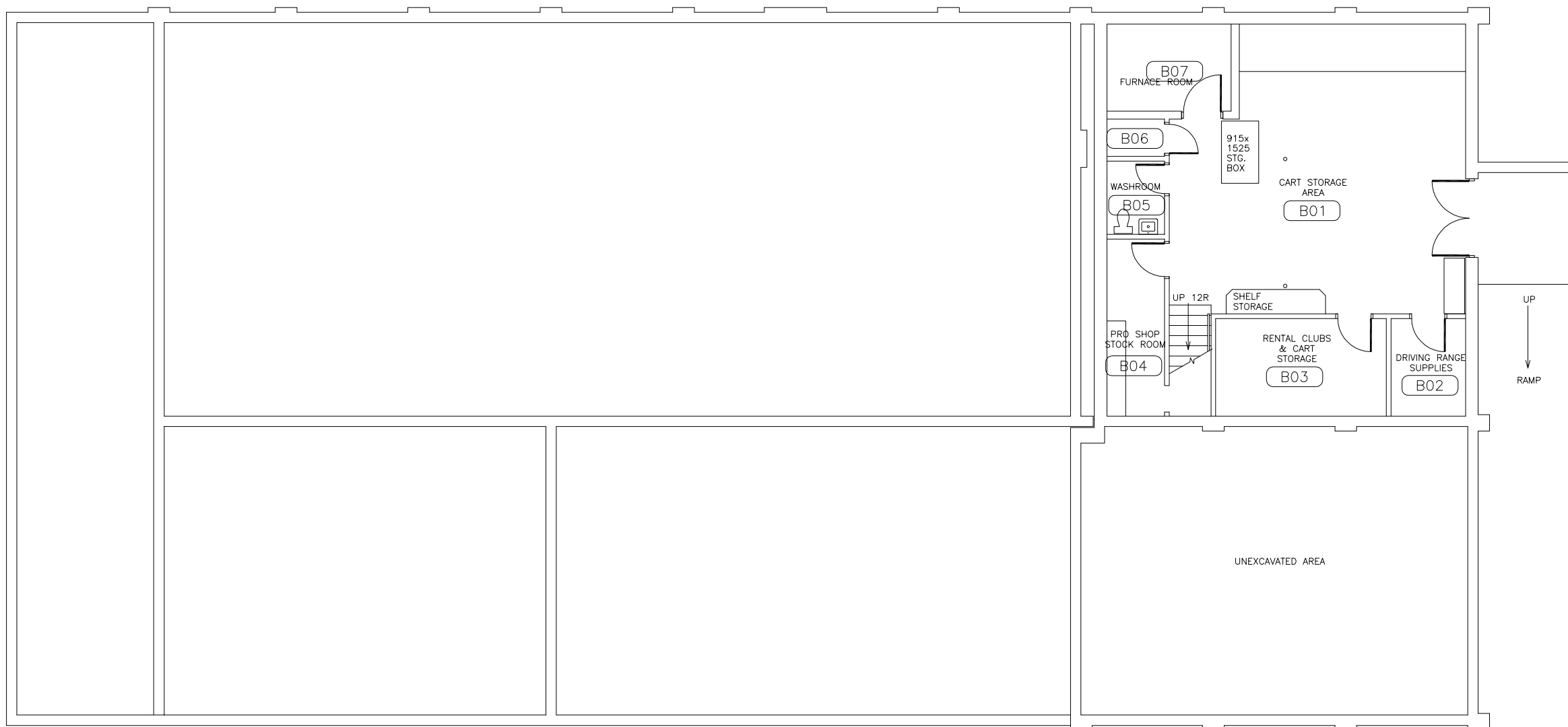
PROJECT TITLE
812
Holiday Pk
Golf Clubhouse

PROJECT NO.	SHEET
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REV. NO.	
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GENERAL NOTES:

1. All dimensions are in millimetres
2. Drawings are not to be scaled.
3. All drawings to be read in conjunction with the specifications, unless otherwise noted.
4. Verify site conditions and location of all utilities prior to the start of construction.
5. Report all discrepancies to the Consultant.
6. If in doubt, ask.



REV	ISSUED FOR	DATE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	REQUESTED BY:

SCALE:	DATE:
1:125	09/05/2000

SHEET NAME	Asbuilt
Lower Floor Base Plan	

PROJECT TITLE
**812
Holiday Pk
Golf Course**

PROJECT NO.	SHEET

REV. NO.	

August 20, 2019

City of Saskatoon
3130 Laurier Drive
Saskatoon, SK
S7L 5J7

ATTENTION: Brent Anderson

SUBJECT: Bulk Sample Analysis Report

Please find attached the laboratory results for the bulk samples collected on August 15, 2019 from the Holiday Park Golf Course Clubhouse located at 1630 Avenue U S, Saskatoon, Saskatchewan. The samples were analyzed for the identification of asbestos. Asbestos was detected within the vermiculite sample.

The results for the samples submitted were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume.

The results for the vermiculite insulation sample was obtained by examination in accordance with the EPA/600/R-04/004 Polarized Light Microscope and Filtration Technique. Based on the sample results, the material is classified as a **hazardous material**.

Occupational Health and Safety, 1996 – Section 330 b.1 “asbestos-containing material means: (.i) vermiculite determined to contain any asbestos when tested according to an approved method”. Reference page 10 of the EACO Vermiculite Guideline 2015 document - 5. Analysis of Vermiculite – “If amphibole asbestos is detected, even at low concentrations by PLM, the material shall be considered as an asbestos-containing material (ACM).”

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client.

If any questions arise on the results of the attached information, please contact our office. Thank you for this opportunity of service.

Sincerely,



Tyneal Knackstedt
Bersch Consulting Ltd.
B67BLH15I-Holiday Park Golf Course

Bulk Sample Analysis Report

August 20, 2019

Project Number: B67.19

Client: City of Saskatoon

Contact: Brent Anderson

Location: Holiday Park Golf Course Clubhouse

File Number: B67BAH15I

Sample Number	Sample Date	Sample Material	Sample Location and Information	Asbestos	%	Analyst
1	2019/08/15	Vermiculite	Within North Exterior Wall Cavity	Actinolite/Tremolite	> 0.1%	WB/EMSL
2	2019/08/15	Caulking	North Wall on Vertical Beams	No Asbestos Detected		WB/EMSL
3a	2019/08/15	Brick	North Wall	No Asbestos Detected		WB/EMSL
3b	2019/08/15	Mortar	North Wall	No Asbestos Detected		WB/EMSL
4	2019/08/15	Caulking	Around Electrical Box North Wall	No Asbestos Detected		WB/EMSL

Note: The results for the samples submitted were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume. The results for the vermiculite insulation sample was obtained by examination in accordance with the EPA/600/R-04/004 Polarized Light Microscope and Filtration Technique.

BERSCH CONSULTING LTD.

February 8th, 2017

City of Saskatoon
Facilities and Fleet Management
3130 Laurier Drive
Saskatoon, SK.
S7L 5J7

ATTENTION: Derek Nase / Hazel Fernandez

SUBJECT: Asbestos Site Investigation – Holiday Park Golf Course - Renovation Project.

Mitch Webber of Bersch & Associates Ltd. conducted a site visit on January 30th, 2017 to investigate and collect bulk samples of material to confirm the presence/absence of asbestos content. The facility is located at 1630 Avenue U South, Saskatoon, SK. Three (3) samples were collected and analyzed for the identification of asbestos. Asbestos **was not** detected in the samples.

The results for the bulk samples were obtained by examination in accordance with the current USEPA 600/R-93/116 Method for the analysis of asbestos in building materials using polarized light microscopy and dispersion staining techniques. The detection limit of this method is listed as less than 1% by volume.

Asbestos containing vermiculite insulation was identified in the 2014 Survey, behind the white brick wall and the exterior walls. As a result of the previous bulk sampling and site investigation, there is an asbestos concern that would reflect on the proposed renovations for the area. Hub City Contracting will perform the necessary work to facilitate the project. They will be coring the holes required for the pipe installation into the walls.

The renovation area of Holiday Park Golf Course consists of a vinyl sheet flooring, drywall walls and brick walls. Vermiculite insulation was observed in the brick wall cavity.

This test report relates only to the materials sent for examination and any use or extension of the information by the client of these results is the responsibility of the client. If any questions arise on the results of the attached information, please contact our office at 306.978.6665. Thank you for this opportunity of service!

Sincerely,



Brad Berschiminsky
Bersch Consulting Ltd.
File: B67BLA30G – Holiday Park G.C.

BERSCH CONSULTING LTD.

244-2002 Quebec Avenue
Saskatoon, SK S7K 1W4

BULK SAMPLE ANALYSIS REPORT**PROJECT NO: B67.17****CLIENT: CITY OF SASKATOON****CONTACT: DEREK NASE / HAZEL FERNANDEZ****LOCATION: HOLDIAY PARK GOLF COURSE - 1630 AVENUE U SOUTH, SASKATOON, SK.**

NO.	DATE	SAMPLE INFORMATION	ASBESTOS	%	ANALYST
1	30-Jan-17	111 Women's Locker Room - Wall Drywall Mud Compound Compilation - Adj. Sink & North Wall Adj. Shower Area	No Asbestos Detected		WB
2	30-Jan-17	111 Women's Locker Room - Brick & Mortar From West Wall Adj. Shower Area	No Asbestos Detected		WB
3	30-Jan-17	127 Pro Shop - Drywall Mud Compound From East Wall Adj. Windows	No Asbestos Detected		WB

Appendix I
Site Photo's

SITE PHOTOS

PHOTO 1 – Exterior Brick Wall



PHOTO 2 – 122 Utility Vestibule

