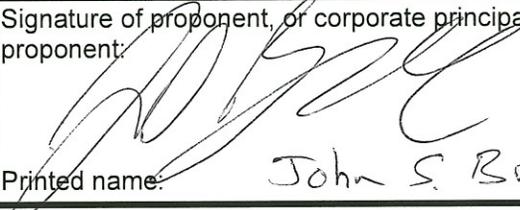


# Environment Act Proposal Form

Name of the development: Plasti-Fab Manitoba	
Type of development per Classes of Development Regulation (Manitoba Regulation 164/88): Class 1 Development	
Legal name of the proponent of the development: Plasti-Fab Ltd.	Mailing address: PO Box 62067 104 Regent St. Winnipeg, Manitoba R2C2X5
Location (street address, city, town, municipality, legal description) of the development: 2485 Day St., Winnipeg, Transcona Ward, Lot 7, Plan 20840 WLTO in E 1/2 8-11-4 EPM	
Name of proponent contact person for purposes of the environmental assessment: John Brazzale	
Phone: 403-946-6248 Fax: 403-946-3961	Mailing address: Box 88, Crossfield, AB T0M0S0
Email address: jbrazzale@plastifab.com	
Webpage address: www.plastifab.com	
Date: July 30/2013	Signature of proponent, or corporate principal of corporate proponent:  Printed name: John S. Brazzale

A complete **Environment Act Proposal (EAP)** consists of the following components:

- **Cover letter**
- **Environment Act Proposal Form**
- **Reports/plans supporting the EAP** (see "Information Bulletin - Environment Act Proposal Report Guidelines" for required information and number of copies)
- **Application fee** (Cheque, payable to Minister of Finance, for the appropriate fee)

**Submit the complete EAP to:**

Director  
Environmental Assessment and Licensing Branch  
Manitoba Conservation  
Suite 160, 123 Main Street  
Winnipeg, Manitoba R3C 1A5

**For more information:**

Phone: (204) 945-7100  
Fax: (204) 945-5229  
Toll Free: 1-800-282-8069, ext. 7100  
<http://www.gov.mb.ca/conservation/eal>

Per Environment Act Fees Regulation  
(Manitoba Regulation 168/96):

Class 1 Developments .....	\$500
Class 2 Developments .....	\$5,000
Class 3 Developments:	
Transportation and Transmission Lines.....	\$5,000
Water Developments .....	\$50,000
Energy and Mining.....	\$100,000



## **ENVIRONMENT ACT PROPOSAL REPORT**

**Plasti-Fab Manitoba  
2485 Day Street  
Winnipeg, Manitoba**

Submitted to:

**Plasti-Fab Ltd.**  
P.O. Box 62067  
104 Regent Street  
Winnipeg, Manitoba  
R2C 2X5

Attention: Mr. John S. Brazzale, Technical Centre Manager

Submitted by:

**AMEC Environment & Infrastructure**  
A Division of AMEC Americas Limited  
440 Dovercourt Drive  
Winnipeg, Manitoba  
R3Y 1N4  
(204)488-2997

**AMEC Project Number: WX17111**

13 May 2013



## EXECUTIVE SUMMARY

Plasti-Fab Ltd. (Plasti-Fab) authorized AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC) to complete an Environment Act (EA) Proposal Report for the existing foam manufacturing facility located at 2485 Day Street in Winnipeg, Manitoba (the 'Site'). Plasti-Fab requested AMEC prepare the EA report as part of their Environment Act License (EAL) application for the Site. This report was prepared in accordance with AMEC's proposal dated 11 December 2012 (AMEC proposal WPG2012.545).

According to the City of Winnipeg Assessment and Taxation Department, the current facility at the Site was constructed in 1965 with subsequent additions to the Site building in 1974, 1977, and 1990. Prior to the development, the Site had been used as agricultural land with a farmstead appearing in aerial photographs. According to Site personnel, the foam manufacturing facility has been the only occupant of the Site since 1965 and was been operated by Border Chemical from 1965 until approximately 1995 then by Plasti-Fab until present. The Site currently consists of a large manufacturing building with a storage and parking area surrounding the building.

It should be noted that the Plasti-Fab facility located at 2485 Day street shares perimeter fencing and access points with the adjacent property operated by Markwell Industries with the municipal address of 2477 Day Street. It should also be noted that Plasti-Fab leases office space and storage space for ready-to-ship foam products from Markwell industries at the 2477 Day Street property. However, plant facility operations associated with this report are limited to the 2485 Day Street property.

Detrimental environmental effects as a result of the facility activities are minimal or insignificant and all potential environmental effects are further reduced through the described mitigating measures. Table A is a summary of the environmental effects identified in the report.

TABLE A: SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS			
POTENTIAL IMPACTS			MITIGATION MEASURES
Item	Not a Concern	Currently Being Mitigated	
Air Quality		X	Apart from heating and cooling equipment, sources of air emissions at the Site are limited to steam venting from steaming equipment, styrene emitted indoors from the hot-wire foam block cutting process, and pentane emitted indoors from raw beads. It was reported to AMEC that steam emitted from steaming equipment would contain water vapour and trace amounts of water softening agents, boiler compound, and polymer boiler treatment. Plasti-Fab has had several air quality tests performed associated with styrene and pentane, most recently in August 2002. Results for styrene testing have shown that typical concentrations of styrene in the breathing zone (2 to 5 ppm) are well below the threshold limit value (50 ppm). Results for pentane were inconclusive, however showed that concentrations of pentane emitted from the raw beads could reach a concentration equal to or greater than the lower explosive limit. To mitigate the dangers associated with high pentane levels, in-house LEL testing for levels of pentane are performed weekly.



Excessive Environmental Noise	X		Manufacturing operations at the facility are performed indoors. Typical indoor sound levels range from 92 to 95 decibels. Traffic is considered to be normal for an industrial warehousing property. The Site is located within an industrial area of Transcona. Aside from a rental property located adjacent to the Site which provides housing for the facility security personnel, and the adjacent bioreserve, the nearest non-industrial or non-commercial property is located approximately 500 m from the Site.
Geology/Soils	X		Based on available geological maps, the subsurface stratigraphy in this area of Winnipeg normally consists of topsoil and fill materials underlain by glacio-lacustrine silt and clay to a depth of approximately 9 to 12 m from grade. A deposit of silty till, typically a few metres or more in thickness, occurs between the clay and the underlying bedrock. The bedrock in this area consists of dolomitic limestone with abundant chert nodules in the upper limestone layer and is of the Selkirk Member (Baracos et al., 1983). Bedrock is estimated to occur between about 15 and 18 m below grade. Fractured zones in the bedrock comprise the major aquifer in the area. There are no aquifers above the bedrock. Given the substantial clay thickness, the potential for impacts to the aquifer, from on or off-site sources is considered to be low.
Industrial Waste Effluent	X		There is no industrial waste effluent produced at the facility. Water used to steam the foam products is treated with water softeners, boiler compound, and polymer boiler treatment chemicals. All runoff and condensation related to this process is collected in drains inside the Site building and directed offsite through connection to the municipal sewer system.
Sewage Disposal	X		The sanitary facilities from the Site are connected to the City of Winnipeg municipal wastewater system.
Chemical Storage		X	All chemicals used and stored at the Site are effectively controlled and all personnel are WHMIS trained. General Site safe practices and procedures, as well as a Site emergency response plan have been developed.
Hazardous Materials		X	Forklift propane canisters are stored in a lockable storage cage outside the facility. The storage capacity is limited to 6 canisters. The raw bead product used in the operations at the Site are considered to be a hazardous product. All crates of beads are stored indoors above a concrete floor. Handling of the beads is done in accordance with the Site health and safety practices and procedures.
Storm water Management	X		Surface drainage in the vicinity of the Site consists of gently sloped landscaping towards a drainage ditch transecting the western portion of the Site and toward the eastern Site boundary and the off-site drainage ditch. The drainage ditch transecting the western portion of the Site continues past the Site to the south onto the 2477 Day Street property, but does not appear to drain into any course. Water in the ditch remains until evaporated or percolation into the subsurface. There are two catch basins associated with the drainage ditch adjacent the eastern Site boundary. The catch basins are attached to the City of Winnipeg Sewer system. A shallow drainage ditch is also present along the northern Site boundary which then connects with the drainage ditch adjacent the Site to the east, however the Site is graded such that Site drainage is directed away from the northern drainage ditch.
Plants / Forestry	X		The Site is located in an industrial setting with industrial properties to the north, south, and east. The Site is located adjacent to a remediated



Wildlife / Fisheries	X		brownspace formerly occupied by a Domtar lumber treating facility. It was seeded with native grasses and contains a small overgrown wetland and a flooded willow area. The potential for impact to the adjacent greenspace is considered to be low as all site runoff is directed eastward toward Day Street and site emissions and noise originating from the indoor processes is minimal.
Land-use	X		
Heritage / Cultural Resources	X		The closest designated heritage site is the Former St. Boniface Waterworks Water Tower at 552 Plinguet Street, approximately 7.4 km west-southwest from the Site. The nearest First nation community to the City of Winnipeg is the Swan Lake First Nation Reserve Land 8a, located in Rural municipality of Headingly, Manitoba. It should be noted that at the time of this application, the former Canadian Forces Base Kapyong Barracks, located at Kenaston Boulevard, is under negotiation with Treaty 1 First nations to be potentially redeveloped into an urban reserve. However, the Kapyong Barracks are located more than 10 km from the Site.
Employment / Income / socio-economic	X		Plasti-Fab offers economic benefits to the local area and City of Winnipeg in the form of employment and tax revenue. The facility provides 17 full time positions, one part-time position, and two seasonal positions (summer students). As the Site is located in the industrial park area, there is limited to no socio-economic implications to the area.

Based on the type and operation of the facility, limited potential for environmental impact and the controls that are currently in place, further follow-up plans are not required at this time. Based on AMEC's review, the importance of environmental compliance is well defined and acknowledged by Plasti-Fab personnel. Company and site documentation appears to be generally well maintained and accessible. It has been reported to AMEC that the Site is secured with perimeter fencing and well maintained and properly managed. Chemicals and hazardous materials are clearly identified, properly located and stored, and MSDS and emergency information is easily accessible. Additionally, all personnel are Workplace Hazardous Materials Information System (WHMIS) trained.

In future, a site closure plan would be developed to address all the necessary environmental requirements in the event of future facility decommissioning.



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## 1.0 INTRODUCTION AND BACKGROUND

Plasti-Fab Manitoba (Plasti-Fab) authorized AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC) to complete an Environment Act Proposal (EAP) Report for the existing foam manufacturing facility located at 2485 Day Street in Winnipeg, Manitoba (the 'Site'). Plasti-Fab requested AMEC prepare the EAP report as part of their Environment Act License (EAL) application for the Site. This report was prepared in accordance with AMEC's proposal dated 11 December 2012 (AMEC proposal WPG2012.545).

The foam manufacturing facility would be considered a Class 1 development under the Environment Act. The existing legislation under The Environment Act which pertains to the Site is as follows:

- 10(1) No person shall construct, alter, operate or set into operation any Class 1 development unless:
- (a) the person first files a proposal in writing with the department and obtains a valid and subsisting license from the director for the development; or
  - (b) the person is exempted under the Act or the regulations from the requirements of clause (a).

Plasti-Fab currently operates nine plants (Alberta, British Columbia, Ontario, Manitoba, Saskatchewan, and Ohio) including one polystyrene bead manufacturing plant (Crossfield, Alberta) and one timber-framing plant (Blissfield, Michigan).

The main operations at the Site include manufacturing expanded polystyrene foam products used for insulation, packaging, or cut shapes. The process begins with a single raw product, polystyrene beads, which are heated to expand. After curing for a number of days the beads are heated with steam and pressed into foam blocks. The foam blocks are cut with a hot wire knife to the required dimensions.

The process has an expander to pre-foam polystyrene beads with steam, a boiler to produce steam, several storage bags to cure beads, a block mould, a foam block storage area, a cutting area, and a shipping dock. The raw product consists of polystyrene beads delivered to the site in large cardboard crates.

Waste products are end-cuts of foam board and beads collected in an external blower shed. The waste beads and foam shavings are produced in the plant from cuttings and handling of beads. These waste materials are either recycled in the plant or sent to the municipal landfill.

The Plasti-Fab facility located at 2485 Day Street shares perimeter fencing and access points with the adjacent property operated by Markwell Industries with the municipal address of 2477 Day Street. Plasti-Fab leases office space and storage space for ready-to-ship foam products from Markwell industries at the 2477 Day Street property. However, it should be noted that plant facility operations for this report are limited to the 2485 Day Street property.

AMEC has based the following report on the Licensing Procedures Regulation under the Environment Act (Manitoba Regulation 163/88), specifically, the Information Bulletin – Environment Act Proposal Report Guidelines (dated January 2011) issued by Manitoba Conservation.



## **1.1 OBJECTIVES**

The objective of this EAP report is to provide the information requested in the MC Environment Act Proposal Report Guidelines Information Bulletin, in support of Plasti-Fab's EAP under Manitoba's The Environment Act.

## **1.2 METHODOLOGY**

The baseline environmental conditions were established previously in a Phase I Environmental Site Assessment (ESA) conducted at the Site by AMEC in 1994 supplemented with a Site visit and historical information update completed by AMEC in March 2013. Environmental effects of the development were then assessed using professional judgement, precedent, and similar case studies. Mitigating measures (if required) were identified to comply with legislation and to eliminate, control or minimize potential adverse effects and are incorporated in the facility operations. Where necessary, follow-up requirements were defined to ensure that mitigation measures are implemented and effectiveness can be assessed.

Environmental effects are defined as changes in the environment caused by Plasti-Fab activities at the Site. However, in the case of the Site, which is an active operation, AMEC concentrated on identifying the operational processes that could conceivably impact the environment through either normal procedural activities or from spills, accidental releases, or other unplanned acts.

## 2.0 DESCRIPTION OF DEVELOPMENT

### 2.1 CURRENT FACILITY DESCRIPTION

The Site is located at 2485 Day Street on the west side of Day Street between Gunn Road and Gevaert Street East in the Griffin Neighbourhood within the Transcona Ward in Winnipeg, Manitoba. Figures 1 and 2 (Appendix A), show the Site location. The legal description of the Site is:

- Lot 7, Plan 20840 WLTO in E ½ 8-11-4 EPM

According to the City of Winnipeg Citizen's Information Service, the Site and adjacent properties to the north, south, and east are zoned as Manufacturing – General (M2). The property adjacent the Site to the west is zoned as Agricultural (A).

According to the City of Winnipeg Assessment & Taxation Department, the property use for the Site is INMLM (Industrial Light Manufacturing) and assessed property size is 5.7 acres (2.31 hectares). The Site is currently owned by Plasti-Fab. The certificate of title (Appendix B) indicates two caveats for the property; a right-of-way and an encroachment. A Certificate of Title is included in Appendix B.

According to the City of Winnipeg Assessment and Taxation Department, the current facility at the Site was constructed in 1965 with subsequent additions to the Site building in 1974, 1977, and 1990. Prior to the development, the Site had been used as agricultural land with a farmstead appearing in aerial photographs. According to Site personnel, the foam manufacturing facility has been the only occupant of the Site since 1965 and was been operated by Border Chemical from 1965 until approximately 1995 then by Plasti-Fab until present.

The Site currently consists of a large manufacturing building in the easternmost area of the Site with a gravel-covered parking and storage area surrounding the building and extending past the approximate centre of the Site, and a vegetated open area in the western portion of the Site.

The original building is the southeast portion of the overall Site building. This portion of the Site building included an office area, a utility closet, the expanding / mould operations, and raw bead storage on the main level, and restrooms and a lunchroom on the second level mezzanine. The original portion of the building was developed on a concrete slab with concrete masonry walls. The roof was reported to be finished with tar and gravel.

The second section of the Site building, reported to have been constructed in 1974, was developed on the north side of the original Site building. This area of the building was used as the cutting area. The 1974 section was developed on a concrete slab with concrete masonry walls.

The third section of the building, reported to have been constructed in 1977, was observed to be developed on a concrete slab with concrete masonry walls. The flooring in this section of the Site building was observed to be exposed concrete with exposed concrete block walls. This section of the building was used for foam block storage.

The fourth section, reported to have been constructed in 1990, was observed to be developed on a concrete slab with a wood and steel frame finished with painted gypsum board. The flooring in this

section of the Site building was observed to be exposed concrete. This area of the building was used for the storage of partially expanded foam beads (the virgin silo room).

The exterior of the Site building was observed to be finished with a mixture of metal siding and painted concrete block. A loading dock extended from the northern face of the Site building and loading ramp was observed near the eastern face of the Site building.

The surrounding land consisted of a mixture of greenspace, commercial uses, and manufacturing uses, as described below.

- North: An undeveloped lot followed by commercial / industrial properties and a drainage ditch.
- South: A commercial and manufacturing property (Markwill Industries Limited) followed by Varsteel Limited and further commercial / industrial properties beyond.
- East: Day Street followed by a manufacturing property (Amsted Rail – Griffin Wheel Company).
- West: The Transcona Bioreserve (parkland) with residential properties beyond.

## 2.2 DEVELOPMENT USE

The Plasti-Fab development consists of a large manufacturing building in the easternmost area of the Site with a gravel-covered parking and storage area surrounding the building and extending past the approximate centre of the Site, and a vegetated open area in the western portion of the Site. According to the City of Winnipeg Assessment and Taxation Department, the current facility at the Site was constructed in 1965 with subsequent additions to the Site building in 1974, 1977, and 1990. Prior to the development, the Site had been used as agricultural land with a farmstead appearing in aerial photographs. According to Site personnel, the foam manufacturing facility has been the only occupant of the Site since 1965 and was been operated by Border Chemical from 1965 until approximately 1995 then by Plasti-Fab until present. Potential renovations for the Site are expected to include the demolition and removal of the southernmost area of the original 1965 portion of the Site building and the construction of an expansion of the existing building for additional storage. It should be noted that at this time firm plans have not been developed and if Plasti-Fab determines that it would like to move forward with the renovation, it is anticipated to take place as early as 2015.

Plasti-Fab has established and documented Health and Safety Plan and an Emergency Response Plan (ERP) based on corporate protocols and customized for the Day Street facility and location. The Site Health and Safety Plan is provided in Appendix C and the Site ERP is provided in Appendix D.

The main operations at the Site include manufacturing expanded polystyrene foam products used for insulation, packaging, or cut shapes. The process begins with a single raw product, polystyrene beads, which are heated to expand. After curing for a number of days the beads are

heated with steam and pressed into foam blocks. The foam blocks are cut with a hot wire knife to the required dimensions.

The process has an expander to pre-foam polystyrene beads with steam, a boiler to produce steam, several storage bags to cure beads, a block mould, a foam block storage area, a cutting area, and a shipping dock. The raw product consists of polystyrene beads delivered to the site in large cardboard crates.

Waste products are end-cuts of foam board and beads collected in an external blower shed. The waste beads and foam shavings are produced in the plant from cuttings and handling of beads. These waste materials are either recycled in the plant or sent to the municipal landfill.

Traffic at the facility includes approximately ten third party carriers on a daily basis. In addition, Plasti-Fab operates one full time truck that would account for an aggregate total of three round trips per day.

Security includes the perimeter fencing with vehicle gates off Day Street. Gates are open during normal business hours (7:00 am – 5:00 pm) and locked at all other times. All building accesses are locked with coded key pads. Assigned emergency coordinators will have keys for all locks. The fire sprinkler / alarm is monitored 24 hours by AAA Alarms.

The Site was developed and is currently operated without any government funding. Public consultation has not been undertaken with any Site development.

### **2.3 PERMITS/AUTHORIZATIONS/APPROVALS**

AMEC requested an MC file search to determine if MC had any records pertaining to the Site. On 7 February 2013, AMEC received the results of the file search and it was reported that MC records indicate that the Plasti-Fab operation at the property is registered to generate UN1760 (corrosive liquid, non-organic) at a rate of 110 L per month and UN3082KC (environmentally hazardous substance, non-organic, liquid) - used oil at a rate of 5 L per month. It was indicated by the Site representative that the only hazardous wastes leaving the Site would be in the control of licensed contractors and technicians who attend the Site to perform maintenance on equipment.

Additionally, Aero Foam, formerly at this address, is registered as a petroleum storage facility with operation ID 22010. According to MC, a 22730 L underground petroleum storage tank was installed at the Site in 1979 and removed in 1994. The Department also maintains two contaminated site files for this property with file numbers 19668 for Aero Foam and 19663 for Markwell Industries, however the Site is not currently considered a contaminated site. AMEC arranged for the MC file and the file for the adjacent property (2477 Day street) to be viewed for more details about this listing.

According to MC files, a tank was installed at the Site removed in 1994. During the tank removal, soil analysis was performed and indicated that two of the samples exceeded the guideline criteria for xylenes and total purgeables at the time. However, information provided in the MC file for the 2477 Day Street property (adjacent the Site to the south) alludes to the tank being present at 2477 Day Street and not 2485 Day Street. MC did not have any additional information to verify this.

MC files indicate that a tank and a pump island were installed at the 2477 Day street property which was assessed via a Phase II ESA. 1600 yd<sup>3</sup> of impacted soil was removed from the area of the former tank and treated. Other notable information contained in the file included a letter dated February 17, 1995 from AGRA to Plasti-Fab Ltd. The letter discussed that Mr. Rick Lemoine of Manitoba Environment (now Manitoba Conservation) indicated that the 2485 Day Street property should not have been listed as an impacted site and that he (Mr. Lemoine) would take action to remove it from the list. Further to that, the file for the 2485 Day Street property was dated prior to the letter, so it is assumed that the information in the 2485 Day Street file is related to the 2477 Day Street property. MC currently does not have further information in this regard.

The contents of the MC files and the MC file search letters are provided in Appendix E.

### **3.0 DESCRIPTION OF EXISTING ENVIRONMENT**

#### **3.1 BIOPHYSICAL ENVIRONMENT**

##### **3.1.1 Geology/Hydrogeology**

Based on available geological maps, the subsurface stratigraphy in this area of Winnipeg normally consists of topsoil and fill materials underlain by glacio-lacustrine silt and clay to a depth of approximately 9 to 12 m from grade. A deposit of silty till, typically a few metres or more in thickness, occurs between the clay and the underlying bedrock. The bedrock in this area consists of dolomitic limestone with abundant chert nodules in the upper limestone layer and is of the Selkirk Member (Baracos et al., 1983). Bedrock is estimated to occur between about 15 and 18 m below grade.

Fractured zones in the bedrock comprise the major aquifer in the area. There are no aquifers above the bedrock. Given the substantial clay thickness, the potential for impacts to the aquifer, from on or off-site sources is considered to be low.

A total of 86 wells are registered in the Manitoba Water Stewardship water well database that are located in the same township, range, and section as the Site, or the adjacent township, range, and section. Of the 86 wells; Two are listed as recharge wells, three are listed as observation wells, and the remaining 81 are production wells. Of the 81 production wells, 57 are registered for domestic use, 23 are registered for industrial use, and one is registered for domestic and irrigation use. All wells are completed and cased into the limestone bedrock aquifer at a minimum casing depth of 13.7 m. Copies of the well registries are included in Appendix F.

##### **3.1.2 Topography and Surficial Drainage**

The Site is located in the physiographic division of the Manitoba Lowland within the Red River Plain district.

The Manitoba Lowland is characterized by relatively flat to gently undulating relief. In the area of the City of Winnipeg, ground surface elevation does not vary more than a few metres with exception of the Red River and Assiniboine River banks and man-made structures (eg Red River Floodway). The area of the Site is extremely flat with less than 1 m of elevation difference for hundreds of metres in extent.

Surface drainage in the vicinity of the Site consists of gently sloped landscaping towards a drainage ditch transecting the western portion of the Site and toward the eastern Site boundary and the off-site drainage ditch. The drainage ditch transecting the western portion of the Site continues past the Site to the south, but does not appear to drain into any course. Water in the ditch would remain until evaporated or percolation into the subsurface. There are two catch basins associated with the drainage ditch adjacent the eastern Site boundary. The catch basins are attached to the City of Winnipeg Sewer system. A shallow drainage ditch is also present along the northern Site boundary which then connects with the drainage ditch adjacent the Site to the east, however the Site is graded such that Site drainage is directed away from the northern drainage ditch.

### **3.1.3 Climatic Conditions**

Winnipeg climate is characterized by a strong seasonal pattern of both temperature and precipitation. The normal location of the Mid-Latitude Winter-Dry climate is in the interior of the continents in the mid-latitudes. This continental location causes a large annual temperature range because of continentality.

This climate receives Maritime Tropical air masses in the summer with occasional Continental Tropical air masses. Summers are hot and humid with intense summer convective storms. Continental Polar air masses are dominant in the winter with an occasional outbreak of Maritime Polar air. Continental Polar air masses are associated with cold, dry weather conditions. Precipitation mainly occurs in the summer from thunderstorm activity. The mid-latitude cyclone produces a smaller quantity of precipitation in the winter (Physicalgeography.net).

There are 40 weather stations located in the City of Winnipeg. According to Environment Canada's Website, the mean annual temperature within the Winnipeg area is 2.6°C with a maximum daily average temperature of 25.8°C and a minimum daily average temperature of -22.8°C. The annual precipitation is reported as 513.7 mm.

### **3.1.4 Surface Water Bodies**

The nearest persistent surface water feature to the Site are the man-made ponds located in the Harbourview Golf Course and Recreation Complex located approximately 2.5 km northwest of the Site.

### **3.1.5 Vegetation**

During the Site visit, the ground surface at the Site was observed to be gravel covered in the eastern half of the Site and was reported to be vegetated with low-lying vegetation and grasses in the western half of the Site. Due to snow cover at the time of inspection, the vegetation and area could not be fully observed, however recent (2012) high-resolution aerial photography of the Site confirms the information provided. Bullrushes, sedges, and reeds were observed along the northern Site boundary near the adjacent drainage ditch to the north and east of the Site. The surrounding areas to the Site contained similar vegetation and ground cover, including those observed in the adjacent bioserve.

The property located adjacent the Site to the west is known as the Transcona Community Bioreserve. The bioreserve was established in 1998 in conjunction with the remediation activities associated with the former Domtar Wood Preservation Plant formerly located at this property. It was reported to AMEC by Fort Whyte Alive that the property was fully remediated by Domtar to the Province's satisfaction. The Province required an end-use plan that the surrounding neighbours would agree to, and FortWhyte proposed seeding native grasses on the capped area, a loop walking trail, and various tree plantings. The area is now left to grow naturally. It contains a small overgrown wetland and a flooded willow area that supports local native flora and fauna. A complete list of the flora and fauna present within the bioreserve is not available.

Manitoba Conservation maintains a list of threatened and endangered species. The following list of plants from the threatened species list, including Latin names, are located in Manitoba:

- |                         |                           |
|-------------------------|---------------------------|
| • Buffalograss          | Buchloë dactyloides       |
| • Culver's-root         | Veronicastrum-virginicum  |
| • Hackberry             | Celtis occidentalis       |
| • Hairy Prairie-Clover  | Dalae villosa             |
| • Riddell's Goldenrod   | Solidago riddelli         |
| • Western Silvery Aster | Symphyotrichum            |
| • Western Spiderwort    | Tradescantia occidentalis |

The following list of plants from the endangered species list, including Latin names, are located in Manitoba:

- |                                  |                          |
|----------------------------------|--------------------------|
| • Great Plains Ladies'-Tresses   | Spiranthes magnicamporum |
| • Small White Lady's-slipper     | Cypripedium candidum     |
| • Western Prairie Fringed-orchid | Platanthera preaclara    |
| • Gattinger's Agalinis           | Agalinis gattingeri      |
| • Rough Agalinis                 | Agalinis aspera          |
| • Smooth Goosefoot               | Chenopodium subglabrum   |
| • Western Ironweed               | Vernonia fasciculata     |

There are no known threatened or endangered plant species in the Site area, nor is growth expected due to the industrial use of the Site.

### 3.1.6 Wildlife

Mammals and birds normally observed within industrial areas of Winnipeg include rodents, crows, and robins. Amphibians and reptiles may be present in neighbouring ditches and low lying areas.

The following list of mammals and birds from the species at risk, including Latin names, is located in Manitoba:

#### Endangered

- |                              |                     |
|------------------------------|---------------------|
| • Baird's Sparrow            | Ammodramus bairdii  |
| • Burrowing Owl              | Athene cucularia    |
| • Canada Warbler             | Wilsonia canadensis |
| • Chestnut-collared Longspur | Calcarius ornatus   |

- Dusky Dune Moth
- Eskimo Curlew
- Ferruginous Hawk
- Gold-edged Gem
- Ivory Gull
- Least Bittern
- Loggerhead Shrike
- Mapleleaf Mussel
- Pale Yellow Dune Moth
- Peregrine Falcon
- Piping Plover
- Poweshiek Skipperling
- Prairie Skink
- Red Knot rufa subspecies
- Ross's Gull
- Trumpeter Swan
- Uncas Skipper
- Whooping Crane
- Verna's Flower Moth
- White Flower Moth

*Copablepharon longipenne*  
*Numenius borealis*  
*Buteo regalis*  
*Schinia avemensis*  
*Pagophila eburnea*  
*Ixobrychus exilis*  
*Lanius ludovicianus*  
*Quadrula quadrula*  
*Copablepharon grandis*  
*Falco peregrinus*  
*Charadrius melodus*  
*Oarisma poweshiek*  
*Eumeces septentrionalis*  
*Calidris canutus rufa*  
*Rhodostethia rosea*  
*Cygnus buccinator*  
*Hesperia uncas*  
*Grus Americana*  
*Schinia verna*  
*Schinia bimatrix*

#### Threatened

- Boreal Woodland Caribou
- Chimney Swift
- Common Nighthawk
- Dakota Skipper
- Golden-Winged Warble
- Great Plains Toad
- Mule Deer
- Ottoe Skipper
- Polar Bear
- Red-headed Woodpecker
- Sprague's Pipit
- Short-eared Owl
- Whip-poor-will
- Western Hognose Snake

*Rangifer tarandus caribou*  
*Chaetura pelagic*  
*Chordeiles minor*  
*Hesperia dacotae*  
*Vermivora chrysoptera*  
*Bufo cognatus*  
*Odocoileus hemionus*  
*Hesperia ottoe*  
*Ursus maritimus*  
*Melanerpes erythrocephalus*  
*Anthus spragueii*  
*Asio flammeus*  
*Caprimulgus vociferus*  
*Heterodon nasicus*

#### Extirpated

- Greater Prairie-Chicken
- Grizzly or Brown Bear
- Kit or Swift Fox
- Long-Billed Curlew
- Muskox
- Plains Bison
- Pronghorn
- Riding's Satyr

*Tympanuchus cupido*  
*Ursus arctos*  
*Vulpes velox*  
*Numenius americanus*  
*Ovibos moschatus*  
*Bison bison bison*  
*Antilocapra Americana*  
*Neominois ridingsii*

There are no known populations of threatened or endangered mammals or bird species within the Site area nor the potential for the residency of these species based on the land usage, perimeter fencing and lack of ecological factors (suitable habitat and food supply).

### **3.2 SOCIOECONOMIC ENVIRONMENT**

As the Site is located within an industrial park and is enclosed by a chain-link fence, the socioeconomic environment is considered limited. During the Site visit, no existing public safety and health risks were identified. The area is not located within or close to a national park.

According to the Manitoba Government's provincial heritage website, and the Manitoba Historical Society website, and Winnipeg Municipal heritage website, the closest designated heritage site is the Former St. Boniface Waterworks Water Tower at 552 Plinguet Street, approximately 7.4 km west-southwest from the Site.

The nearest First nation community to the City of Winnipeg is the Swan Lake First Nation Reserve Land 8a, located in Rural municipality of Headingly, Manitoba. It should be noted that at the time of this application, the former Canadian Forces Base Kapyong Barracks, located at Kenaston Boulevard, is under negotiation with Treaty 1 First nations to be potentially redeveloped into an urban reserve. However, the Kapyong Barracks are located more than 10 km from the Site.

## **4.0 DESCRIPTION OF POTENTIAL ENVIRONMENTAL EFFECTS**

Potential Site operation effects on the environment and mitigation measures for these potential effects are assessed and discussed in the following sections.

### **4.1 AIR EMISSIONS**

Apart from heating and cooling equipment, sources of air emissions at the Site are limited to steam venting from steaming equipment, styrene emitted indoors from the hot-wire foam block cutting process, propane burning forklifts used in the warehouse, and pentane emitted indoors from raw beads. A greenhouse gas inventory was prepared for the Site and is provided in Section 4.10, below.

It was reported to AMEC that steam emitted from steaming equipment would contain water vapour and trace amounts of water softening agents, boiler compound, and polymer boiler treatment. Plasti-Fab has had several air quality tests performed associated with styrene and pentane, most recently in August 2002. Results for styrene testing have shown that typical concentrations of styrene in the breathing zone (2 to 5 ppm) are well below the threshold limit value (50 ppm). Results from testing for pentane were inconclusive, however showed that concentrations of pentane emitted from the raw beads could reach a concentration equal to or greater than the lower explosive limit. Results from the August 2002 air quality test are provided in Appendix G. To mitigate the dangers associated with high pentane levels, in-house LEL testing for levels of pentane are performed weekly. There would be no other generation of air emissions from the operation.

### **4.2 NOISE EMISSIONS**

Noise originating from the development includes transport truck traffic consistent with an industrial facility and indoor manufacturing operations. All manufacturing operations at the facility are performed indoors and noise originating from the active processes ranges from 92 to 95 decibels, typical for an industrial setting. A copy of the most recent indoor noise level hazard assessment completed in June 2010 is provided in Appendix H.

Given the location of the facility in an industrial / manufacturing zoned area of Winnipeg and the distance to the nearest residential property (with the exception of the home of the security personnel) of approximately 500 m, noise issues are not anticipated.

### **4.3 INDUSTRIAL AND SANITARY WASTEWATER EFFLUENT**

There is no industrial waste effluent produced at the facility. Water used to steam the foam products is treated with water softeners, boiler compound, and polymer boiler treatment chemicals. All runoff and condensation related to this process is collected in drains inside the Site building and directed offsite through connection to the municipal sewer system. The sanitary facilities from the Site are connected to the City of Winnipeg municipal wastewater system.



#### 4.4 CHEMICAL STORAGE

The facility is employed for the handling and storage of foam beads and foam packaging materials. Loss or release of the foam, in raw form or final product in sufficient volume, would produce minimal adverse effects to the environment, but mainly to wildlife consuming the product.

Chemicals used and stored at the Site in the production facility are limited to the following:

TABLE B: SUMMARY OF SITE CHEMICAL USE AND STORAGE				
Name	Use	WHMIS Classification	TDG Classification	Storage Location
EPR (Expandable Polystyrene Resin)	Raw product for foam production	Class B (flammable)	Reported to be treated as a dangerous good	Indoors above concrete. In cardboard crates prior to use.
Luconyl ® Brown 2915	Dye for foam products	Class D2B (toxic material)	Not classified as a dangerous good under transport regulations	Indoors above concrete in sealed barrels.
Luconyl ® Green 8730	Dye for foam products	Not WHMIS controlled	Not classified as a dangerous good under transport regulations	Indoors above concrete in sealed barrels.
SP-50 Powdered Boiler Compound	Water treatment for protection from degradation of boiler and related infrastructure	D2A (very toxic material)	Not classified as a dangerous good under transport regulations	Indoors above concrete in sealed pails.
PBT-20 Polymer Boiler Treatment	Water treatment for protection from degradation of boiler and related infrastructure	Class D2B (toxic material)	Not classified as a dangerous good under transport regulations	Indoors above concrete in sealed pails.

Material Safety Data Sheets for these chemicals are provided in Appendix I. All chemicals used and stored at the Site are effectively controlled, additionally all personnel are Workplace Hazardous Materials Information System WHMIS trained. Additional information regarding general practices and procedures for the Site is included in the Site Health and Safety Booklet included as Appendix C.

#### 4.5 HAZARDOUS MATERIALS

Based on the information provided by Plasti-Fab, hazardous materials stored at the Site are limited to propane canisters and raw foam beads.

Forklift propane canisters are stored in a lockable storage cage outside the facility near the southeast corner of the building. The storage capacity will be limited to 6 canisters at one time.

Up to one hundred and four 1,000 lb cardboard crates of raw foam beads are stored at the Site in the building above concrete. The raw foam beads are employed for the production of foam

materials. The crates of beads are delivered by truck to the facility and transferred directly into the warehouse upon arrival at the Site.

Based on the volume, type, and typical handling of hazardous materials expected on Site at any given time, there is little perceived risk of environmental effects at the Site.

#### **4.6 HAZARDOUS AND NON-HAZARDOUS WASTE**

With exception of used propane canisters and materials (typically used oil) removed from equipment during regular maintenance, hazardous waste is not generated at the Site. Used oil produced in conjunction with forklift and equipment maintenance is not stored at the Site, rather it is collected during maintenance activities by a licensed technician and removed from Site by the technician upon completion of maintenance activities. With the exception of scrap foam produced in the facility production, non-hazardous wastes, including domestic garbage and recyclables, are separated and disposed of in commercial bins and picked-up by a licensed commercial hauler.

With regard to foam waste, the facility makes every effort to capture and recycle foam product back into its process (i.e. trimmed ends and scraps). Scraps and trimmed ends of cut foam products are collected routinely resulting in a very limited waste stream. In addition to the efforts of collecting and recycling scrap foam within the facility, Plasti-Fab accepts used waste foam product from its clients for recycling at the Site, provided the foam is a Plasti-Fab product. The total combined effort results in a negative waste stream with regard to foam product.

#### **4.7 STORM WATER MANAGEMENT**

Surface drainage in the vicinity of the Site consists of gently sloped landscaping towards a drainage ditch transecting the western portion of the Site and toward the eastern Site boundary and the off-site drainage ditch. The drainage ditch transecting the western portion of the Site continues past the Site to the south, but does not appear to drain into any course. Water in the ditch would remain until evaporated or percolation into the subsurface. There are two catch basins associated with the drainage ditch adjacent the eastern Site boundary. The catch basins are attached to the City of Winnipeg Sewer system. A shallow drainage ditch is also present along the northern Site boundary which then connects with the drainage ditch adjacent the Site to the east, however the Site is graded such that Site drainage is directed away from the northern drainage ditch.

Based on the facilities at the Site, there does not appear to be a concern for environmental effects with regards to storm water.

#### **4.8 WILDLIFE AND VEGETATION**

The current area of the Site primarily consists of an Industrial Park and not an important habitat for many birds and animals, due to the lack of vegetation. The Site is located adjacent to a remediated brownspace formerly occupied by a Domtar lumber treating facility. It was seeded with native grasses and contains a small overgrown wetland and a flooded willow area. There are no known endangered or rare species of plant or wildlife present in the area. The Site is surrounded by a chain-link fence which keeps out larger mammals from the Site. Based on the location, the Site operations will have little to no effect on plants and wildlife. The potential for impact to the



adjacent greenspace is considered to be low as all site runoff is directed eastward toward Day Street and Site emissions and noise originating from the indoor process are minimal.

#### 4.9 SOCIO-ECONOMIC EFFECTS

Plasti-Fab offers economic benefits to the local area and City of Winnipeg in the form of employment and tax revenue. The facility provides 17 full time positions, one part-time position, and two seasonal positions (summer students). As the Site is located in the industrial park area, there is limited to no socio-economic implications to the area.

#### 4.10 CLIMATE CHANGE IMPLICATIONS

A greenhouse gas (GHG) inventory was completed for the Site to assess the climate change implications associated with Site operations. The inventory represents estimated emissions in 2012 and includes emissions from natural gas combustion. The results of the inventory are summarized in the following table.

TABLE C: SUMMARY OF GREENHOUSE GAS INVENTORY						
Facility Name	Plasti-Fab Manitoba			NPRI id#	6890	
Natural Gas Consumption for External Combustion Equipment		All Contaminants From External Combustion Sources Are Below Reporting Thresholds				
Boiler Brand	Indeck Thermoflo					
Model	TFLV-200C- PF8					
Size	8400000 Btu					
Serial #	1462-E					
Emission Calculations for CAC from boiler						
Method	emission factors					



<b>TABLE C: SUMMARY OF GREENHOUSE GAS INVENTORY (continued)</b>						
Contaminant	Factor (US EPA) lb/10 <sup>6</sup> scf	Total Emission (lbs.)	Total Emission (tonnes)	GHG	CAS No.	GHG Equivalents
NOx	100	812.82	0.369	-	11104-93-1	
CO	84	682.77	0.310	-	630-08-0	
PM (filterable)	1.9	15.44	0.007	-		
SO <sub>2</sub>	0.6	4.88	0.002	-	7446-09-5	
VOC	5.5	44.70	0.020	-		
CO <sub>2</sub>	120000	975,378.60	442.432	442.432		1
Lead	0.0005	0.00	0.000	-		
N <sub>2</sub> O	2.2	17.88	0.008	2.417	10024-97-2	298
PM (total)		-	-	-		
PM (condensable)		-	-	-		
PM (filterable)	1.9	15.44	0.007	-		
Methane	2.3	18.69	0.008	0.178		21
<b>Total</b>				<b>445.027</b>		

The inventory does not include indirect emissions from electricity use, off-site vehicle use, and waste streams;

## 5.0 MITIGATION MEASURES

Based on the operation of the facility and potential environmental impact, potential adverse environmental effects could result in the loss or release of raw product or other bulk chemicals stored on Site. Mitigation measures to prevent the release of raw product or other bulk chemicals into the environment are detailed below:

- Indoor storage and operations – all facility operations, including the storage of raw and finished products, are stored indoors above concrete. This allows for minimal off-site noise and minimal opportunity for the release of any deleterious substances to the air, water, soil, or surrounding environment.
- Site security – the Plasti-Fab facility is surrounded by a chain-linked fence with controlled access and egress points. Building access is through locked doorways with keypads. During off hours, a security person occupies a house on the adjacent property which the Site shares grounds and fencing. The security is considered adequate to prevent break-ins and vandalism of products.
- Administrative controls – several safety and procedure documents are in place, which facilitate the response of foreseeable incidents potentially harmful to the environment. In addition, all personnel are WHMIS trained.



## **6.0 FOLLOW-UP PLANS**

Based on the type and operation of the facility, limited potential for environmental impact, and the controls that are currently in place, further follow-up plans are not required at this time. Based on AMEC's review, the importance of environmental compliance is well defined and acknowledged by Plasti-Fab personnel. Company and Site documentation appears to be generally well maintained and accessible. It has been reported to AMEC that the Site is kept secured with perimeter fencing and well maintained and properly managed. Chemical inventory is clearly identified, is properly located and stored, MSDS and emergency information is easily accessible, and personnel are WHMIS trained.

In future, a Site closure plan would be developed to address all the necessary environmental requirements in the event of future plant decommissioning.



## 7.0 CONCLUSIONS

Detrimental environmental effects as a result of the facility activities are minimal or insignificant and all potential environmental effects are further reduced through the described mitigating measures. Table A is a summary of the environmental effects identified in the report.

<b>TABLE A: SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS</b>			
<b>POTENTIAL IMPACTS</b>			<b>MITIGATION MEASURES</b>
<b>Item</b>	<b>Not a Concern</b>	<b>Currently Being Mitigated</b>	
Air Quality		X	Apart from heating and cooling equipment, sources of air emissions at the Site are limited to steam venting from steaming equipment, styrene emitted indoors from the hot-wire foam block cutting process, and pentane emitted indoors from raw beads. It was reported to AMEC that steam emitted from steaming equipment would contain water vapour and trace amounts of water softening agents, boiler compound, and polymer boiler treatment. Plasti-Fab has had several air quality tests performed associated with styrene and pentane, most recently in August 2002. Results for styrene testing have shown that typical concentrations of styrene in the breathing zone (2 to 5 ppm) are well below the threshold limit value (50 ppm). Results for pentane were inconclusive, however showed that concentrations of pentane emitted from the raw beads could reach a concentration equal to or greater than the lower explosive limit. To mitigate the dangers associated with high pentane levels, in-house LEL testing for levels of pentane are performed weekly.
Excessive Environmental Noise	X		Manufacturing operations at the facility are performed indoors. Typical indoor sound levels range from 92 to 95 decibels. Traffic is considered to be normal for an industrial warehousing property. The Site is located within an industrial area of Transcona. Aside from a rental property located adjacent to the Site which provides housing for the facility security personnel, and the adjacent bioserve, the nearest non-industrial or non-commercial property is located approximately 500 m from the Site.
Geology/Soils	X		Based on available geological maps, the subsurface stratigraphy in this area of Winnipeg normally consists of topsoil and fill materials underlain by glacio-lacustrine silt and clay to a depth of approximately 9 to 12 m from grade. A deposit of silty till, typically a few metres or more in thickness, occurs between the clay and the underlying bedrock. The bedrock in this area consists of dolomitic limestone with abundant chert nodules in the upper limestone layer and is of the Selkirk Member (Baracos et al., 1983). Bedrock is estimated to occur between about 15 and 18 m below grade. Fractured zones in the bedrock comprise the major aquifer in the area. There are no aquifers above the bedrock. Given the substantial clay thickness, the potential for impacts to the aquifer, from on or off-site sources is considered to be low.
Industrial Waste Effluent	X		There is no industrial waste effluent produced at the facility. Water used to steam the foam products is treated with water softeners, boiler compound, and polymer boiler treatment chemicals. All runoff and condensation related to this process is collected in drains inside the Site building and directed offsite through connection to the municipal sewer system.
Sewage Disposal	X		The sanitary facilities from the Site are connected to the City of Winnipeg municipal wastewater system.



Chemical Storage		X	All chemicals used and stored at the Site are effectively controlled and all personnel are WHMIS trained. General Site safe practices and procedures, as well as a Site emergency response plan have been developed.
Hazardous Materials		X	Forklift propane canisters are stored in a lockable storage cage outside the facility. The storage capacity is limited to 6 canisters. The raw bead product used in the operations at the Site are considered to be a hazardous product. All crates of beads are stored indoors above a concrete floor. Handling of the beads is done in accordance with the Site health and safety practices and procedures.
Storm water Management	X		Surface drainage in the vicinity of the Site consists of gently sloped landscaping towards a drainage ditch transecting the western portion of the Site and toward the eastern Site boundary and the off-site drainage ditch. The drainage ditch transecting the western portion of the Site continues past the Site to the south onto the 2477 Day Street property, but does not appear to drain into any course. Water in the ditch remains until evaporated or percolation into the subsurface. There are two catch basins associated with the drainage ditch adjacent the eastern Site boundary. The catch basins are attached to the City of Winnipeg Sewer system. A shallow drainage ditch is also present along the northern Site boundary which then connects with the drainage ditch adjacent the Site to the east, however the Site is graded such that Site drainage is directed away from the northern drainage ditch.
Plants / Forestry	X		The Site is located in an industrial setting with industrial properties to the north, south, and east. The Site is located adjacent to a remediated brownspace formerly occupied by a Domtar lumber treating facility. It was seeded with native grasses and contains a small overgrown wetland and a flooded willow area. The potential for impact to the adjacent greenspace is considered to be low as all site runoff is directed eastward toward Day Street and site emissions and noise originating from the indoor processes is minimal.
Wildlife / Fisheries	X		
Land-use	X		
Heritage / Cultural Resources	X		The closest designated heritage site is the Former St. Boniface Waterworks Water Tower at 552 Plinguet Street, approximately 7.4 km west-southwest from the Site. The nearest First nation community to the City of Winnipeg is the Swan Lake First Nation Reserve Land 8a, located in Rural municipality of Headingly, Manitoba. It should be noted that at the time of this application, the former Canadian Forces Base Kapyong Barracks, located at Kenaston Boulevard, is under negotiation with Treaty 1 First nations to be potentially redeveloped into an urban reserve. However, the Kapyong Barracks are located more than 10 km from the Site.
Employment / Income / socio-economic	X		Plasti-Fab offers economic benefits to the local area and City of Winnipeg in the form of employment and tax revenue. The facility provides 17 full time positions, one part-time position, and two seasonal positions (summer students). As the Site is located in the industrial park area, there is limited to no socio-economic implications to the area.

In future, a site closure plan would be developed to address all the necessary environmental requirements in the event of future facility decommissioning.

## **8.0 CLOSURE**

No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of a standardized environmental protocol is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the property, given reasonable limits of time and cost.

This report was prepared for the exclusive use of Plasti-Fab Manitoba and is intended for the site located at 2485 Day Street in Winnipeg, Manitoba. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from AMEC will be required. With respect to third parties, AMEC has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected by AMEC. It is based solely on the conditions of the Site encountered at the time of the Site visit, supplemented by a review of information and data obtained by AMEC as described in this report and discussions with a representative of the owner/occupant, as reported herein. Except as otherwise maybe specified, AMEC disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to AMEC after the time this report was issued.

In evaluating the property, AMEC has relied in good faith on information provided by other individuals noted in this report. AMEC has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. AMEC accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

AMEC makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This Report is also subject to the further General Conditions in Appendix J.



We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Respectfully submitted,

**AMEC Environment & Infrastructure**

A handwritten signature in black ink, appearing to read "Michael Bertram".

Michael Bertram, P. Eng.  
Senior Environmental Engineer

## 9.0 REFERENCES

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