

**PHASE I ENVIRONMENTAL SITE ASSESSMENT
40 – 44 KILLALY STREET WEST
PORT COLBORNE, ONTARIO**

Submitted to:

CITY OF PORT COLBORNE
66 Charlotte Street
Port Colborne, Ontario
L3K 3C8

Submitted by:

AMEC Earth & Environmental
a Division of AMEC Americas Limited
3300 Merrittville Highway, Unit 5
Thorold, Ontario, L2V 4Y6
Phone: 905-687-6616 ; Fax: 905-687-6620

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EXECUTIVE SUMMARY

AMEC Earth & Environmental, a division of AMEC Americas Limited (“AMEC”) was retained by the City of Port Colborne (“City”) to conduct a Phase I Environmental Site Assessment (“ESA”) of a commercial property located at 40 – 44 Killaly Street, in Port Colborne, Ontario (the “Site”). The Site is legally described as Lots 48 through 54 and Part Lot 28, Plan 861, as in RO478705, City of Port Colborne, Regional Municipality of Niagara [PIN # 64156-0139 (LT)]. Currently, the Site is owned by Mrs. Edwina Dekoning (“OWNER”) and is occupied by an automotive service garage (“Ruston’s Auto Parts”) (“OCCUPANTS”).

The CLIENT retained AMEC to provide an evaluation of known and possible environmental issues at the Site for internal due diligence purposes.

A Phase I ESA is defined as a systematic qualitative process to assess the environmental condition of a Site based on its historical and current use. This Phase I ESA was conducted in accordance with the Phase I ESA standard as defined by Ontario Regulation 153/04 and the CAN/CSA Z768-01 Phase I Environmental Site Assessment, referenced therein.

Ms. Kelly Patterson, B.Sc., of AMEC, conducted a Site reconnaissance on May 12, 2005 to evaluate possible on-Site issues, and assess whether any surrounding land uses may have and / or are currently impacting the environmental condition of the Site. During the Site reconnaissance, AMEC interviewed Mr. Paul Ruston, owner of Ruston’s Auto Parts (the “Site representative”). The Site representative accompanied AMEC during the Site reconnaissance. In addition, Mr. David Janaszek, representative of the City, accompanied AMEC during the Site reconnaissance. Ground cover conditions at the time of the Site reconnaissance were clear and dry.

In addition, the Site assessor did not access the roof of the Site buildings due to safety concerns. Vehicles parked around the Site may have limited AMEC’s observations of the ground surface.

The Site is currently occupied by a single building, including an automotive service garage, occupied by Ruston’s Auto Parts. According to the Site representative, he has occupied the Site since 1990. The Site representative informed AMEC that prior to him occupying the Site; it was in use as an automotive repair shop / garage or automotive dealership since at least the 1930s. In addition, the Site representative informed AMEC that at least one (1) underground storage tank (“UST”) located on the northern portion of the Site.

Based on the Phase I ESA completed by AMEC, there is evidence of potential or actual contamination associated with the following activities related to the subject site.

- The Site has been in use as a retail fuel outlet and / or automotive service garage (including tire centre) since at least 1950. As such, USTs have been present on-Site throughout that time. In addition, it is inferred that automotive fluids and other chemicals were also stored on-Site throughout the time the Site operated as an automotive service facility.
- At the time of the reconnaissance, AMEC observed the presence of two vent pipes and a single fill pipe on-Site, suggesting the presence of a single UST. In addition, the Site representative informed AMEC that there was a single UST still on-Site. There is also currently three

aboveground storage tanks (“ASTs”) present on-Site. The contents (if any) and condition of the current UST is not known to AMEC.

- Various used vehicle parts and partially full and empty drums of unknown contents were observed on Site during the reconnaissance. In addition, staining was observed on the ground surface at the Site.
- In 1994, Arcturus conducted two environmental investigations (Phase I & Phase 2) on-Site. As part of these investigations, evidence of petroleum hydrocarbon contamination was included in the soil / fill at the Site above applicable guideline criteria. This petroleum hydrocarbon contamination was noted to be on the northern portion of the Site (in the vicinity of the former pump island). It was also noted to extend off-Site.
- Arcturus recommended additional intrusive investigations be completed off-Site to determine the degree and extent of this petroleum hydrocarbon contamination. In addition, Arcturus recommended the excavation and removal of the USTs identified on-Site, as well as the excavation and removal of an estimated 2,500 tonnes of petroleum hydrocarbon-impacted soil / fill. It is not known to AMEC if the remediation program identified above was carried out.
- Mould was observed on ceiling tiles throughout the Site building during the Site reconnaissance.
- Based on the age of the Site building (i.e., early 1950s), ACMs, LBPs and PCBs in light ballasts may be present at the Site.
- Nickel concentrations, as well as other metals, as a result of historical atmospheric deposition from the INCO facility in Port Colborne, may be elevated in the surface soil at this Site.

Based on the Phase I ESA completed by AMEC, the following recommendations are made with respect to the Site:

- a focussed intrusive investigation into the environmental quality of soil and ground water (i.e., Phase II ESA) would be required at this Site in order to quantify the composition and extent of any contaminants of concern.

In addition, to address potential operational / management issues, AMEC offers the following recommendation:

- appropriate management plans should be prepared for ACMs, LBPs and PCBs if future repair, renovation or demolition activities are planned in the areas of the Site buildings suspected to contain these materials.

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1.0 INTRODUCTION

1.1 Background

AMEC Earth & Environmental, a division of AMEC Americas Limited (“AMEC”) was retained by the City of Port Colborne (“City”) to conduct a Phase I Environmental Site Assessment (“ESA”) of a commercial property located at 40 – 44 Killaly Street West, in Port Colborne, Ontario (the “Site”). A key plan showing the location of the Site is provided on Figure 1. The Site is legally described as Lots 48 through 54 and Part Lot 28, Plan 861, as in RO478705, City of Port Colborne, Regional Municipality of Niagara [PIN # 64156-0139 (LT)]. Figure 2 illustrates the lot and building configuration of the Site. Currently, the Site is owned by Mrs. Edwina Dekoning (“OWNER”) and is occupied by an automotive service garage (“Ruston’s Auto Parts”) (“OCCUPANTs”).

The CLIENT retained AMEC to provide an evaluation of known and possible environmental issues at the Site for internal due diligence purposes.

A Phase I ESA is defined as a systematic qualitative process to assess the environmental condition of a Site based on its historical and current use. This Phase I ESA was conducted in accordance with the Phase I ESA standard as defined by Ontario Regulation 153/04 (“O. Reg. 153/04”) and the CAN/CSA Z768-01 Phase I Environmental Site Assessment, referenced therein.

1.2 Scope of Work

This Phase I ESA was carried out in accordance with the Terms of Reference as provided in AMEC proposal TG-P05031 dated March 8, 2005. The scope of work for the Phase I ESA consisted of the following tasks:

- Reviewing the historical occupancy of the Site, through the use of available archived municipal and business directories, fire insurance plans (“FIPs”) and aerial photographs;
- Reviewing the current use of the Site and any land use practices that may have impacted its environmental condition;
- Reviewing the current use of the surrounding properties and any land use practices that may have impacted the environmental condition of the Site;
- Conducting a “walk-through” visual assessment (i.e., Site reconnaissance) of the Site and building facilities in order to identify the presence of actual and / or potential environmental contaminants or concerns of significance;
- Conducting interviews with persons of knowledge regarding both the current and / or historical use(s) of the Site;

- Contacting municipal and provincial agencies to determine the existence of records of environmental regulatory non-compliance, if any, and reviewing such records where available; and
- Preparing a report of our findings.

Although proposed by AMEC, an ECO LOG Environmental Risk Information Services Ltd. ("ERIS") report was not obtained.

A search of land title and assessment rolls was not conducted as a part of this investigation. A search of land ownership is unlikely to contribute any useful information regarding the environmental condition at the Site as the ownership / occupancy of the property since the original development is well documented in other historical records.

2.0 SITE DESCRIPTION

The Site is located on the north side of Killaly Street West, on the northeast corner of the intersection of Killaly Street West and Catharine Street, in Port Colborne, Ontario (Figure 1). The Site lies in a typical municipal urban setting in an area of primarily residential with some commercial land uses.

Ms. Kelly Patterson, B.Sc., of AMEC, conducted a Site reconnaissance on May 12, 2005 to evaluate possible on-Site issues, and assess whether any surrounding land uses may have and / or are currently impacting the environmental condition of the Site. During the Site reconnaissance, AMEC interviewed Mr. Paul Ruston, owner of Ruston's Auto Parts (the "Site representative"). The Site representative accompanied AMEC during the Site reconnaissance. In addition, Mr. David Janaszek, representative of the City, accompanied AMEC during the Site reconnaissance. Ground cover conditions at the time of the Site reconnaissance were clear and dry.

In addition, the Site assessor did not access the roof of the Site buildings due to safety concerns. Vehicles parked around the Site may have limited AMEC's observations of the ground surface.

2.1 Site Occupancy

The Site is currently occupied by a single building, including an automotive service garage, occupied by Ruston's Auto Parts. According to the Site representative, he has occupied the Site since 1990. The Site representative informed AMEC that prior to him occupying the Site, it was in use as an automotive repair shop / garage or automotive dealership since at least the 1930s. In addition, the Site representative informed AMEC that at least one (1) underground storage tank ("UST") is present on the northern portion of the Site.

2.2 Site Features

The Site is an irregular-shaped property, approximately 0.29 hectares (0.71 acres) in area. The Site was occupied by a single storey commercial automotive service garage (the "Site building"). The Site building had a footprint area of approximately 462 square metres ("m²") (4,975 feet squared ["ft²"]). The Site building covered less than 20% of the total Site area. Selected photographs of the Site and surrounding land use are presented in Appendix A.

The Site building was of slab-on-grade construction, with a textured stucco finish with a flat tar and gravel-covered roof. The exterior finish of the Site building appeared to be in poor condition. The interior portions of the Site building consisted of a mixture of concrete block (with some parging) and wood paneled walls, flooring consisting of bare concrete (staining observed on floor in backroom. Floor drain also observed in this area. Lighting was provided via fluorescent fixtures. Heating was provided via propane heaters. The Site representative

advised AMEC that natural gas was provided to the Site; however it has been turned off for three years.

Various new and used automotive parts and products were observed stored throughout the Site building, including: used batteries, various containers of oil, filters, belts, etc. One aboveground and one underground hoist were observed in the automotive service garage. The underground hoist was reported to have previously leaked and was repaired a number of years ago. Three cylinders of refrigerant were also observed, as was a small varsol parts washer and a newer 800 litre (“L”) aboveground storage tank (“AST”) used for the storage of new motor oil. Used antifreeze was placed in 250 L drums. In addition, AMEC also observed a second AST outside of the Site building (southwest end) that was reportedly used for the storage of waste oil. This AST was not provided with secondary containment or vehicular protection. Another empty furnace oil AST was also observed on the northeast portion of the Site.

The Site representative informed AMEC that at least one UST was present on the northern portion of the Site. The Site representative did not know the contents (if any) of the UST or how old it was. AMEC observed the presence of two (2) vent pipes and a single fill pipe on the Site.

AMEC observed that the majority of the Site exterior area outside of the Site building footprint was surfaced with asphalt or gravel.

Six (6) 250 L drums (2 empty) were observed on the southern portion of the Site. The content of these drums is unknown.

AMEC also observed a concrete pad on the northeast portion of the Site. This pad appeared to have what looked to be the remnants of an old hoist in it.

2.3 Site Services

According to the Site representative, the Site is connected to the municipal water supply. Sanitary wastewater is discharged to the municipal sewer system. Storm water flows overland off-Site and drains to the municipal storm sewer system. Electrical service is supplied to the Site by Canadian Niagara Hydro via overhead cables. The Site representative was not aware how long the Site has been provided with natural gas. Based on the presence of the old fuel oil AST located on the Site, it is inferred that prior to natural gas, the Site building was heated using fuel oil.

2.4 Physical Setting

The topography across the Site is relatively flat. The Welland Canal is located approximately 200 metres (“m”) east of the Site, and Lake Erie is located approximately 1.3 kilometres (“km”) south of the Site. In accordance with O. Reg. 153/04, the Site does not include land that is within 30 m of a “water body”.

According to the **Quaternary Geology of Ontario, Southern Sheet, Map 2556**, published by the **Ministry of Northern Development and Mines**, the geology in the vicinity of the Site is interpreted to consist of glaciolacustrine deposits, which is predominantly silt and clay, with minor sand (i.e., basin and quiet water deposits) and / or bedrock (i.e., undifferentiated carbonate and clastic sedimentary rock, exposed at the surface or covered by a discontinuous, thin layer of drift).

Bedrock Geology of Ontario, Southern Sheet, Map 2544, published by the **Ministry of Northern Development and Mines**, describes bedrock in the area to be of Middle Devonian, consisting of limestone, dolostone and shale of the Detroit River Group and Onondaga Formation.

The local ground water flow direction, based on topographic features and knowledge gained from other sites in the area, is expected to be to the southeast. Locally, however, the shallow ground water flow may be influenced by underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography.

3.0 ADJACENT LAND USES

AMEC reviewed the current land uses of neighbouring properties from publicly accessible locations to assess possible environmental impacts to the Site that may arise from off-Site operations. As noted in Section 2.0, properties in the general area surrounding the Site are primarily residential with some commercial land uses.

Properties surrounding the Site are summarized as follows:

North of the Site

North of the Site was Killaly Street, followed by a church and residential land use.

East of the Site

East of the Site was a used automotive dealership, followed by residential and commercial land use.

South of the Site

South of the Site was residential and commercial land use.

Further to the southeast of the Site (beyond the Welland Canal) was industrial land use (i.e., INCO, etc.). Based on the separation distance (greater than 1 km), the industrial land use to the south of the Site is not inferred to be a significant environmental concern to the Site, with the exception of the INCO facility. INCO operated a base metal refinery from 1918 to 1984 at this facility. The current operation at this facility focuses on the production of electrocobalt, the processing of precious metals, which are further purified at other INCO operations and the packaging and distribution of finished nickel products to market. Emissions from this facility (during operation as a refinery) have resulted in soils covering a wide area northeast of this facility having concentrations of nickel, copper and cobalt above the MOE's soil remediation criteria. The MOE as well as others have conducted numerous environmental investigations as a result of this contamination.

INCO is currently undertaking a community based risk assessment ("CBRA") to address the remediation of this area. A Public Liaison Committee ("PLC") has been formed for ongoing public consultation of the proposed CBRA, and on November 30, 2000 the PLC endorsed the Scope of Work for the CBRA.

West of the Site

West of the Site was Catharine Street, followed by residential land use.

4.0 RECORDS REVIEW

The historical occupancy of the Site and the surrounding properties were reviewed through the use of reasonably available public information consisting of, but not limited to, archived aerial photographs, city directories and FIPs. The historical information reviewed was obtained from the following sources:

- Aerial photographs, available at Brock University in St. Catharines, Ontario, for the years 1934, 1954/55, 1965, 1968, 1972, 1978, 1983, 1989, 1994 and 2002;
- City directories, available at Brock University in St. Catharines, Ontario, for the years 1946, 1950, 1955, 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1995/1996, 2000/2001 and 2003/2004;
- FIPs, available at Brock University in St. Catharines, Ontario, for the year 1953; and
- Company records and / or previous reports.

A search of land title was not conducted as a part of this investigation. A search of land ownership is unlikely to contribute any useful information regarding the environmental condition at the Site as the ownership / occupancy of the property since the original development is well documented in other historical records.

4.1 Aerial Photographs

The following significant information was inferred from the aerial photographs reviewed concerning the Site and its surrounding properties:

Date Roll No. Scale	Site	Surrounding Properties
1934 1:16,000 A4858	The Site appeared to be vacant.	North of the Site was Killaly Street West and Erie Street. Inferred residential buildings were located along Erie Street and Killaly Street. East of the Site was King Street, two buildings were present (inferred commercial buildings). Across King Street inferred residential buildings were present. South of the Site was Delhi Street. Inferred residential buildings were present along Delhi Street. West of the Site was Catharine Street. Inferred residential buildings were located on the west side of Catharine Street. The Welland Canal was located to the east of the Site.

Date Roll No. Scale	Site	Surrounding Properties
1954/55 1:16,000 4241	A square building was located on Site (inferred commercial garage). To the west of the Site building, cars were located.	West of the Site along Catharine Street was an inferred commercial building with a graded area to the north along Killaly Street. South of the Site inferred residential buildings were located. Southeast of the Site additional inferred commercial buildings were located.
1965 1:16,000 19341	No significant changes shown.	Inferred parking lot was located to the west of the Site. East of the Site, on the west side of King Street, inferred commercial buildings and parking lot were located. Additional residential buildings north of the Site.
1968 1:12,500 A20444	No significant changes shown.	South of Site a linear graded area was located (inferred railway tracks).
1972 1:12,500 Line 18	No significant changes shown.	No significant changes to the surrounding areas of the Site.
1978 1:10,000 4262	No significant changes shown.	West of the King Street, east of the Welland Canal two rectangular buildings were present (inferred storage buildings).
1983 1:30,000 Line 4	No significant changes shown.	An additional inferred storage building was located west of King Street, east of the Welland Canal, beside the two existing inferred storage buildings.
1989 1:20,000 Line 14	No significant changes shown.	No significant changes to the surrounding areas of the Site.
1994 1:20,000 Line 14	No significant changes shown.	West of the Site and 'L' shaped addition to the inferred commercial building was present. The square building north of the expanded building, south of Killaly Street west of Catharine Street, was no longer present. Inferred garage to the east of the Site was no longer present.
2002 1:697	No significant changes shown.	No significant changes to the surrounding areas of the Site.

Aerial photographs are presented in Appendix B.

4.2 City Directories

It should be noted that city directories were not available for the Site prior to 1943. According to the city directories reviewed, the following occupants were listed as being present at the Site:

Site

From	To	Occupant
1950	1955	Tire Town (42 – 46 Killaly Street).
1955	1960	Murphy's (Division of Country Tires Service Ltd (4 Killaly Street).
1960	1965	Frontier Tire Ltd.
1965	1970	Kaptyn Motors Ltd. (40 Killaly Street). 42 Killaly Street was vacant.
1970	1975	Residential (40 – 42 Killaly Street).
1975	1985	George Edward Car Sales & Service (40 – 46 Killaly Street).
1985	1990	Not listed.
1990	1995	Regional Equipment, UHaul Company Ltd., Vic's Septic Services & Ruston's Auto Parts (40 – 44 Killaly Street).
1995	2004	Regional Equipment & Ruston's Auto Parts (40 Killaly Street).

Surrounding Properties

According to the city directories reviewed, the properties surrounding the Site have generally been in a mix of residential and commercial land uses. Several surrounding properties within 200 m have been occupied by gasoline service stations / dry cleaners and / or other commercial uses. Due to the inferred transgradient / downgradient directions and / or separation distances, the surrounding properties noted above are not inferred to have a high potential to have significantly impacted the environmental condition of the Site. However, based on the historical and current uses of the Site, it is inferred that activities and operations at the Site are more of a concern than activities and operations on neighbouring properties.

4.3 Fire Insurance Plans

Based on a review of the 1953 FIP, one building was present on-Site at 40 Killaly Street West. The building was an L-shape. Three USTs were shown on the eastern portion of the Site.

The majority of the surrounding properties appeared to be in a mix of residential and commercial land use. Of note, a Canadian National Railway ("CNR") spur line, traversing in an east to west direction was located approximately 60 m south of the Site. In addition, a gasoline service station was shown approximately 200 m southeast of the Site.

Based on the separation distances (at least 60 m), the presence of underground utility trenches, conduits, and structures, variations in soil type, and minor fluctuations in topography, the properties surrounding the Site are not inferred to have a high potential to have significantly impacted the environmental condition of the Site.

4.4 Company Records

No company records were available for this Site.

4.5 Previous Environmental Site Assessments and Geotechnical Reports

As part of the Phase I ESA completed by AMEC, the following environmental reports (provided by the CLIENT) were reviewed:

- *“Phase 1 Environmental Site Assessment, 40 Killaly Street West, Port Colborne, Ontario”, completed by Arcturus Environmental (“Arcturus”) for the Royal Bank and dated March 1994 (herein referred to as the “Arcturus Phase I ESA”); and*
- *“Phase 2 Environmental Site Assessment, 40 Killaly Street West, Port Colborne, Ontario”, completed by Arcturus for the Royal Bank and dated May 1994 (herein referred to as the “Arcturus Phase 2 ESA”).*

The findings of the above-noted reports are summarized below.

Arcturus Phase I ESA

As part of the Arcturus Phase I ESA, a full on-Site investigation was conducted including a historical search. In addition, Arcturus also advanced three (3) boreholes on the northern portion of the Site in the area of the former pump islands associated with the former retail petroleum fuel outlet located on Site and submitted representative soil / fill samples for petroleum hydrocarbon analysis.

The findings of the Arcturus Phase I ESA are provided as follows:

- *“the assessment has revealed contamination associated with the underground storage tanks, namely, soil from boreholes BH-101 and BH-102 was contaminated with petroleum hydrocarbons. The contamination is probably caused by leakage from the tanks. The extent of the contamination is not known”.*
- *“this assessment has revealed that contamination may be associated with the following:*
 - *the pump island and its associated piping;*
 - *the nine oil drums, located southwest of the building, were observed to be oil stained, there is the potential for soil contamination from oil spillage in that area:*
 - *the soil in the vicinity of the 2,250 L aboveground gasoline storage tank;*

- *the three hydraulic hoists locate within the service bays;*
- *due to the age of the building fluorescent-light ballasts may contain PCBs”.*

Arcturus Phase 2 ESA

Following the findings of the Arcturus Phase I ESA, the Arcturus Phase 2 ESA was completed. The Arcturus Phase 2 ESA involved the advancing of nine (9) additional boreholes across the Site. The conclusions of this investigation are as follows:

- *“Petroleum hydrocarbon contamination extends from approximately 3.5 m east of the vent pipes to approximately 4.5 m west of the pump island. Contamination does not appear to extend under the building but appears to extend off-Site to the north beyond the public utilities. The estimated volume of soil to be removed are based on a worst case scenario and achieving results which pass the Level II Criteria. We estimate the total volume of on-Site soil at 1,250 m³ (2,500 tonnes) requires removal. Additional contaminated soil may exist off-Site”.*

As part of the Arcturus Phase 2 ESA, recommendations included contacting the Fuels Safety Branch of the Ministry of Consumer and Commercial Relations as well as the Ministry of the Environment & Energy (“MOEE”). In addition, an off-Site intrusive investigation was recommended in order to address the potential for off-Site migration of petroleum hydrocarbons onto surrounding properties, as was an on-Site soil remediation program involving the excavation and removal of all petroleum hydrocarbon-impacted soil at the Site.

It is not known to AMEC as to whether the notification of relevant government offices, the off-Site intrusive investigation or on-Site remediation program was ever completed at the Site:

5.0 REGULATORY AGENCY FILES AND DATABASE REVIEW

The following databases and documents were reviewed to further assess the environmental condition of the Site:

5.1 Local Municipal Agency

As the City of Port Colborne is the CLIENT for this project, the City provided all available Site information to AMEC. The information provided was discussed in other sections of this report.

5.2 Technical Standards and Safety Authority

Fuel storage at industrial facilities in Ontario is regulated by the *Technical Standards and Safety Act 2000* (“TSS Act”). The TSS Act has consolidated the seven acts that the TSSA previously administered, including the *Gasoline Handling Act* and the *Energy Act*. Under the TSS Act, the *Liquid Fuel Handling Regulation*, *Liquid Fuel Handling Code* and the *Environmental Management Protocol* (also known as GA1/99) have replaced the *Gasoline Handling Act*, *The Gasoline Handling Code* and *GH13* (1993 Environmental Cleanup Guideline). The TSS Act applies to all storage tank systems utilized for the storage and handling of gasoline, diesel and fuel oil. According to discussions with a representative of the Technical Standards and Safety Authority (“TSSA”) - Fuels Safety Division, USTs and ASTs installed under the *Liquid Fuel Handling Regulation*, *Liquid Fuel Handling Code* require registration with the TSSA. Fuel oil tanks utilized in residential buildings will also require registration with the TSSA.

The TSSA was contacted by telephone and requested to supply any available information concerning the presence of petroleum storage tanks, fuel spill records, accidents, or fuel-related incidents which may be registered on the subject or surrounding properties. AMEC was verbally informed by Mr. Prem Lal of the TSSA that there are no USTs registered for the Site or surrounding properties.

5.3 Ministry of the Environment

AMEC contacted the local Provincial Officer with the MOE, to inquire if records of environmental regulatory non-compliance, if any, concerning the Site were available. AMEC also inquired if there were any Certificates of Approval (“C-of-A”) issued for the Site.

At the time of preparation of this report a response has not been received. Should subsequent information received alter the conclusions of this report, the City will be informed immediately.

5.4 Provincial Databases / Inventory Records

5.4.1 Waste Disposal Site Inventory

AMEC reviewed the document entitled “*Waste Disposal Site Inventory*”, prepared by the Waste Management Branch of the MOE (dated June 1991). No active or closed waste disposal Sites were listed as being present within 1 km of the Site.

5.4.2 Inventory of Coal Gasification Plant Waste Sites in Ontario

AMEC reviewed the document entitled “*Inventory of Coal Gasification Plant Waste Sites in Ontario*”, prepared for the MOE (dated April 1987). No coal tar or waste sites were listed as being present within 1 km of the Site.

5.4.3 Registered PCB Waste Storage Sites for the year 2000

AMEC reviewed the MOE computer database on Registered Polychlorinated Biphenyl (“PCB”) Waste Storage Sites for the year 2000 (the most current). The Site and surrounding properties were not listed as PCB waste storage sites.

5.4.4 Registered Waste Generators for the year 2003

AMEC reviewed the MOE computer database on Registered Waste Generators for the year 2003 (the most current). The Site and surrounding properties were not listed as industrial waste generators.

5.4.5 Registered Waste Receivers for the year 2003

AMEC reviewed the MOE computer database on Registered Waste Receivers for the year 2003 (the most current). The Site and surrounding properties were not listed as industrial waste receivers.

5.4.6 Brownfields Environmental Site Registry

The MOE on-line Brownfields Environmental Site Registry was accessed on May 17, 2005 to determine if any Records of Site Conditions (“RSCs”) have been filed under Part XV.1 under the Environmental Protection Act (“EPA”) for the Site or any of the surrounding properties. A search of the registry indicated that no RSCs have been filed for the Site or any of the surrounding properties.

5.5 ECO LOG Environmental Risk Information Services Ltd. (“ERIS”)

An ECO LOG ERIS report for the Site was not requested. ERIS is a national service that provides site specific environmental and property-use information. An ERIS report contains

detailed government and private sector records concerning possible environmental liabilities associated with a property and the surrounding neighbourhoods.

The City elected not to undertake an ERIS search for the Site.

6.0 SITE VISIT AND INTERVIEWS

6.1 Site Visit

Ms. Kelly Patterson, B.Sc., of AMEC, conducted a Site reconnaissance on May 12, 2005 to evaluate possible on-Site issues, and assess whether any surrounding land uses may have and / or are currently impacting the environmental condition of the Site. During the Site reconnaissance, AMEC interviewed Mr. Paul Ruston, owner of Ruston's Auto Parts (the "Site representative"). The Site representative accompanied AMEC during the Site reconnaissance. In addition, Mr. David Janaszek, representative of the City, accompanied AMEC during the Site reconnaissance. Ground cover conditions at the time of the Site reconnaissance were clear and dry.

In addition, the Site assessor did not access the roof of the Site buildings due to safety concerns. Vehicles parked around the Site may have limited AMEC's observations of the ground surface.

6.2 Interviews

During the Site visit, AMEC interviewed the Site representative. Other contacts were made as required to evaluate the existing/historical Site operations including the following:

Name	Agency or Company	Position
Unknown	Ministry of the Environment	Freedom of Information Officer
Mr. Prem Lal	Technical Standards and Safety Association	Coordinator, Public Information Services

These individuals and agencies were contacted as they may have information related to the environmental conditions of the site. Records of the interviews and / or correspondence are provided in Appendix C.

While reasonable efforts were made to contact representatives of the agencies listed, a response was not provided by the MOE at the time of preparation of this report. Should information become available at anytime in the future that materially affects the conclusions of this report, this information will be forwarded to the City.

7.0 FINDINGS

The findings of the Phase I ESA are as follows:

7.1 Air Emissions

AMEC did not observe the presence of air emission sources at the time of the reconnaissance that could possibly affect the environmental condition of the Site (i.e., building surfaces and / or surficial soils). The only air emission sources observed at the Site by AMEC were exhausts from the Site's heating equipment, general building ventilation and washroom vents. No significant environmental issues regarding air emissions at the Site have been identified based on the nature of the emission sources observed during the reconnaissance.

7.2 Odour

During the Site reconnaissance, AMEC did not identify any strong, pungent or noxious odours attributable to the operations of the facility. As such, no environmental issues regarding offensive odours were observed at the time of the Site reconnaissance.

7.3 Asbestos

The Site representative was not aware if an asbestos survey had been conducted at the Site, and that ACMs are not known to be present at the Site. Based on the age of the Site building (i.e., early 1950s), friable ACMs may be present at the Site because the use of friable ACMs was not discontinued until the early 1980s. Potentially friable ACMs were not observed during the Site reconnaissance; however, observations were made only in readily accessible areas of the automotive service garage (i.e., not any concealed spaces such as behind walls or above ceilings).

7.4 Mould

Moulds (also known as "fungi") are present everywhere in the natural environment, indoors and outdoors. Exposure to mould may occur indoors on water damaged building materials during occupancy, building maintenance and / or repair operations. The most common types of moulds are generally not hazardous. However, some moulds may be problematic to some people.

Visible mould was observed on the ceiling tiles throughout the Site building during the reconnaissance. It is noted that observations were made only in readily accessible areas of the automotive service garage (i.e., did not include concealed spaces such as behind walls or above ceilings).

7.5 Chemical Storage, Handling & Spills

Various chemicals were stored throughout the Site. As noted in Section 7.13, some of these chemicals are stored in ASTs and USTs at various locations around the Site. AMEC was also informed by the Site representative that one UST is located at the Site. In addition, various automotive chemicals, fluids, lubricants, degreasers, etc. were stored in smaller containers around the Site. New oil was stored in an 800 L AST located in the backroom of the Site building and used motor oil was stored in an AST located to the southwest of the Site building. In addition, used antifreeze was placed in 250 L drums and six (6), 250 L drums (2 empty) were observed on the southern portion of the Site. The content of these drums is unknown.

The Site representative advised AMEC that spills have occurred at the Site. The Site representative reported the following spills / leaks:

- the underground hydraulic hoist in the automotive service garage formerly leaked, and the hydraulic fluid was topped up periodically. The hoist was repaired (i.e., resealed) approximately 3 years ago. A large area of staining was observed on the concrete floor in the automotive service garage during the Site reconnaissance.

Based on the above-noted leaks and spills, it is inferred that the subsurface soil and / or ground water at the Site is likely to be impacted with petroleum hydrocarbons and / or other chemicals.

7.6 Lead

In 1976, the federal government passed regulations under the Hazardous Products Act limiting the amount of lead for interior paints to 0.5 percent. Exterior and commercial paints could still contain lead. In 1990, members of the Canadian Paint and Coating Association agreed to voluntarily eliminate all added lead from their products. Virtually none of the paint available to consumers today contains any added lead.

Some of the interior walls of the automotive service garage contained painted surfaces. Given the age of the Site building (i.e., early 1950s), it is likely that lead-based paints (“LBP”) are present at the Site. The use of lead in interior paints was limited in 1976. Observations made at the time of the Site reconnaissance indicated that the painted surfaces in the automotive service garage were in fair (i.e., peeling and / or flaking) to good physical condition (i.e., not peeling or flaking).

7.7 Methane

Fill materials were not observed on Site at the time of the reconnaissance (see Section 7.12). Furthermore, no active or closed landfills are located within 1 km of the Site. Consequently, methane gas is not inferred to be a significant environmental issue at the Site.

7.8 Ozone-Depleting Substances

Access was not gained to the roof area at the time of the Site reconnaissance.

The Site representative advised that ODSs are stored at the Site and AMEC observed three (3) cylinders of acetylene and propane during the Site reconnaissance.

Apart from the presence of residential-type refrigerator / freezers, no other equipment was observed at the Site that could potentially contain ODSs.

7.9 Polychlorinated Biphenyls

Electrical Transformers

As noted in Section 2.0, electrical service is supplied to the Site by Canadian Niagara Power via overhead cables located along Catharine Street. Suspect PCB-containing transformers were not observed at the Site.

Light Ballasts

The presence of fluorescent light ballasts was observed in the automotive service garage. Given the age of the Site building (i.e., early 1950s), the light ballasts may contain PCBs. The use of PCBs in light ballasts was not discontinued until the early 1980s.

PCB Storage Sites

As discussed in Section 5.4.3, the MOE "*Ontario Inventory of PCB Storage Sites*" did not list the Site as a registered PCB waste storage site.

7.10 Radioactive Materials

Radioactive materials or equipment (labelled as such) were not observed at the Site. No testing for the presence of radioactive material was undertaken.

7.11 Radon

The location of the Site was evaluated against the locations of a soil radon gas study published by the Ontario Geological Survey ("OGS") entitled *Soil Radon Gas Study of Southern Ontario* (OGS, Open File Report 5847, 1993). The City of Port Colborne and the location of the Site are not within the four main study areas investigated by the OGS. AMEC is not aware of other records of the presence or emission of radon gas in the immediate area of Port Colborne, Ontario.

Based on the information obtained from the previously referenced sources, AMEC does not suspect radon gas to be a significant environmental issue at the Site.

7.12 Site In-Filling

Based on observations made at the time of the reconnaissance, the presence of significant amounts of fill material is inferred not to be present at the Site. The Site is generally graded even with the surrounding properties. There was no evidence from the historical review to suggest that significant amounts of in-filling had occurred on Site.

7.13 Storage Tanks

7.13.1 Aboveground Storage Tanks

AMEC was advised by the Site representative, and observed the presence of three ASTs on-Site during the reconnaissance. The ASTs currently present at the Site are as follows:

Name	Location	Volume [L]	Type	Date Installed	Contents
AST 1	Interior of Site building	~ 800	Steel	~2000	New motor oil
AST 2	Southwest of Site building		Steel	Unknown	Used motor oil
AST 3	Northeast portion of Site		Steel	Unknown	Formerly used of furnace oil – now empty.

Note: L - litres

At the time of the reconnaissance, AMEC observed that none of the ASTs at the Site were provided with adequate secondary or vehicular protection.

The Site representative was not aware of any other ASTs that may have been formerly present at the Site. As noted in Section 5.2, the TSSA does not have any records of ASTs being registered to the Site.

7.13.2 Underground Storage Tanks

AMEC was advised by the Site representative that there are currently one (1) UST present on Site. Furthermore, two vent pipes and one fill pipe were observed during the Site reconnaissance suggesting the presence of a single UST. Based on the information collected, the existing UST at the Site consist of the following:

Name	Location	Volume [L]	Type	Date Installed	Contents
UST 1	North end of Site	Unknown	Unknown	Unknown	Unknown

Note: L - litres

As noted in Section 5.2, the TSSA does not have any records of USTs being registered to the Site.

7.14 Urea Formaldehyde Foam Insulation

AMEC was advised by the Site representative that he is not aware of the presence of urea formaldehyde foam insulation (“UFFI”) at the Site. Visual indicators suggesting the possible presence of UFFI were not observed at the Site.

7.15 Waste Management

7.15.1 Liquid Waste

The Site representative advised AMEC that, except for sanitary wastewater, waste oil and used antifreeze, the Site does not generate, store or dispose of liquid wastes from general operations or office activities.

Waste oil is stored in an AST, located southwest of the Site building and used antifreeze is stored in 250 L drums on the exterior portion of the Site. The waste oil and used antifreeze are picked up by Safety Kleen on an “as-needed basis.

As mentioned in Section 5.4.4, the Site is not listed in the 2002 MOE computer database as a registered generator of liquid industrial or hazardous waste.

An oil / water separator was not observed at the Site.

7.15.2 Solid Waste

Based on discussions with the Site representative, and on observations made by AMEC during the reconnaissance, it is AMEC’s understanding that the Site generates primarily non-hazardous solid waste from general operation and office activities. However, in addition to the non-hazardous waste, the automotive service garage on-Site generates small quantities of solid, hazardous waste, including used oils filters. Used oil filters are drained, and removed off-Site by Safety Kleen.

Non-hazardous solid waste generated at the Site is stored in storage containers, and removed for off-Site disposal on a regular basis.

As mentioned in Section 5.4.4, the Site is not listed in the 2002 MOE computer database as a registered generator of solid hazardous waste.

At the time of the reconnaissance, in addition to general solid waste, various engine parts, empty drums, tires and other debris were observed on the exterior portions of the Site.

7.16 Mechanical Equipment

Mechanical equipment including piston type elevators, vehicle hoists and compactors comprise typical hydraulically operated devices. Such equipment contains hydraulic oils which are operated under high pressures and can be released into the environment as a result of leaks or equipment failure

The Site is currently serviced with one underground hydraulically operated vehicle hoist and a second aboveground hoist. The underground hoist could not be inspected due to its below grade location. The Site representative reported problems with the underground hoist, but it has now been repaired (i.e., resealed).

7.17 Wells

Regulation 903 sets the standards for the construction, maintenance and abandonment of water wells and licensing of water well contractors and technicians in the Province of Ontario. Under the regulation, any well that is not being used or maintained for future use as a well must be abandoned in accordance with the procedures set forth in the regulation. This regulation also applies to monitoring and test wells such as those routinely installed for environmental and/or geotechnical testing purposes. Artesian or flowing wells must also be abandoned unless a device can be installed to prevent the well from flowing. Regulation 903 also applies to dry wells or to wells that permit the movement of natural gas or other contaminants between subsurface formations or between formations and the ground surface. Regulation 903 does not apply to oil and gas wells.

No water wells, test wells, or disposal wells were observed at the Site during the inspection. The Site representative informed AMEC that no water wells, test wells, or disposal wells currently exist at the Site.

No oil and gas wells were observed at the Site during the inspection. The Site representative informed AMEC that no oil and gas wells currently exist at the Site.

7.18 Adjacent Properties

Based on observations of the current surrounding properties (from publicly accessible locations), it is AMEC's opinion that there are no significant environmental issues at the Site associated with current surrounding land use activities, with the following exception:

- Nickel concentrations, as well as other metals, as a result of historical atmospheric deposition from the INCO facility in Port Colborne, may be elevated in the surface soil at this Site.

7.19 Historical Review

Site History

Based on a review of the available information sources, it appears that the Site was developed for its current use by at least 1950. No records were available for the Site to show any previous land uses.

Surrounding Land Use

Based on a review of the available information sources, the properties surrounding the Site were generally developed by at least the mid 1940s for residential and commercial land uses.

Based on the historical review completed the following significant environmental issues were identified concerning the Site's historical land use activities:

- The Site has been in use as a retail fuel outlet and / or automotive service garage (including tire centre) since at least the 1950. As such, USTs have been present on-Site throughout that time. In addition, it is inferred that automotive fluids and other chemicals were also stored on-Site throughout the time the Site operated as an automotive service facility.

7.20 Other Observations

Exposure to bird/bat droppings, rodent excreta and raccoon droppings can cause adverse health effects in humans. As a result, accumulation of this material should be kept to the lowest practical level.

Visible bird/bat droppings, evidence of rodent excreta or raccoon droppings were not observed in the automotive service garage during the Site reconnaissance; however, observations were made only in readily accessible areas of the automotive service garage (i.e., did not include concealed spaces such as behind walls or above ceilings).

8.0 CONCLUSIONS

Based on the Phase I ESA completed by AMEC, there is evidence of potential or actual contamination associated with the following activities related to the subject site.

- The Site has been in use as a retail fuel outlet and / or automotive service garage (including tire centre) since at least the 1950. As such, USTs have been present on-Site throughout that time. In addition, it is inferred that automotive fluids and other chemicals were also stored on-Site throughout the time the Site operated as an automotive service facility.
- At the time of the reconnaissance, AMEC observed the presence of two vent pipes and a single fill pipe on-Site, suggesting the presence of a single UST. In addition, the Site representative informed AMEC that there was a single UST still on-Site. There are also currently three ASTs present on-Site. The contents (if any) and condition of the current UST is not known to AMEC.
- Various used vehicle parts and partially full and empty drums of unknown contents were observed on Site during the reconnaissance. In addition, staining was observed on the ground surface at the Site.
- In 1994, Arcturus conducted two environmental investigations (Phase I & Phase 2) on-Site. As part of these investigations, evidence of petroleum hydrocarbon contamination was included in the soil / fill at the Site above applicable guideline criteria. This petroleum hydrocarbon contamination was noted to be on the northern portion of the Site (in the vicinity of the former pump island). It was also noted to extend off-Site.
- Arcturus recommended additional intrusive investigations be completed off-Site to determine the degree and extent of this petroleum hydrocarbon contamination. In addition, Arcturus recommended the excavation and removal of the USTs identified on-Site, as well as the excavation and removal of an estimated 2,500 tonnes of petroleum hydrocarbon-impacted soil / fill. It is not known to AMEC if the remediation program identified above was carried out.
- Mould was observed on ceiling tiles throughout the Site building during the Site reconnaissance.
- Based on the age of the Site building (i.e., early 1950a), ACMs, LBPs and PCBs in light ballasts may be present at the Site.
- Nickel concentrations, as well as other metals, as a result of historical atmospheric deposition from the INCO facility in Port Colborne, may be elevated in the surface soil at this Site.

9.0 RECOMMENDATIONS

Based on the Phase I ESA completed by AMEC, the following recommendations are made with respect to the Site:

- a focussed intrusive investigation into the environmental quality of soil and ground water (i.e., Phase II ESA) would be required at this Site in order to quantify the composition and extent of any contaminants of concern.

In addition, to address potential operational / management issues, AMEC offers the following recommendation:

- appropriate management plans should be prepared for ACMs, LBPs and PCBs if future repair, renovation or demolition activities are planned in the areas of the Site buildings suspected to contain these materials.

10.0 LIMITATIONS

It should be noted that, the Site assessor did not access the roof of the Site buildings due to safety concerns. Vehicles parked around the Site may have limited AMEC's observations of the ground surface.

In completing the scope of work, AMEC did not conduct any intrusive investigations including sampling, analyses or monitoring. The limitations of the Phase I ESA are specified in Appendix D.

11.0 ASSESSOR QUALIFICATIONS

The report was prepared and reviewed by the undersigned, employees of AMEC Earth and Environmental, a division of AMEC Americas Limited. AMEC is one of North America's leading engineering firms, with more than 50 years of experience in the earth and environmental consulting industry. The qualifications of the assessors involved in the preparation of this report are provided in Appendix E.

Respectfully Submitted,

AMEC EARTH & ENVIRONMENTAL

Prepared by:

Reviewed by:

Sean Stewart, B.E.S., EMPD
Environmental Specialist

Patrick Shriner, P.Geo., CPG
Manager, Environmental Services
Niagara Region

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