

**PHASE I ENVIRONMENTAL SITE ASSESSMENT
1655 18th STREET
BRANDON, MANITOBA**

SUBMITTED TO:

**Canadian Tire Corporation Limited
c/o Nejmark Architects
2-54 Adelaide Street
Winnipeg, MB
R3A 0V7**

SUBMITTED BY:

**AGRA Earth & Environmental Limited
95 Scurfield Blvd.
Winnipeg, Manitoba
R3Y 1G4**

WX04528.1

EXECUTIVE SUMMARY

Mr. Tat-Liang Cheam of Nejmark Architects on behalf of the Canadian Tire Corporation Limited, engaged AGRA Earth & Environmental Limited (AEE) to conduct a Phase 1 Environmental Site Assessment (ESA) of 1655 18th Street in Brandon, Manitoba. The legal description of the property is outlined in Manitoba Certificate of Title # 146264 (Appendix E). The purpose of the assessment was to identify actual and potential contamination at the site.

The environmental assessment consisted of:

- a review of historical and current documentation pertaining to the site;
- inspection of the site to identify practices or circumstances that may present potential environmental liabilities.
- interviews with personnel familiar with the site.
- summary report

The subject property was formerly the site of a petroleum refinery and is known to be impacted. A Gas Bar is operated on the site which has a medium potential for contamination. The potential for contamination due to the activities at the retail store is low.

A Phase II ESA is being carried out at the site to identify contamination in the vicinity of the proposed locations of various expansion/construction options.

TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY	i
TABLE OF CONTENTS	ii
LIST OF APPENDICES	ii
1.0 INTRODUCTION	1
1.1 PROJECT BACKGROUND AND TERMS OF REFERENCE	1
1.2 SITE LOCATION	1
2.0 ENVIRONMENTAL SITE ASSESSMENT PROCESS	1
2.1 OBJECTIVES	1
2.2 SCOPE AND LIMITATIONS	1
2.3 METHODOLOGY	2
2.3.1 Site Visit	2
2.3.2 Historical Review	2
3.0 RESULTS AND DISCUSSION	3
3.1 SETTING OF SITE AND SURROUNDINGS	3
3.2 SITE CONDITIONS	3
3.2.1 Site Appearance	3
3.2.2 Topography and Drainage	4
3.2.3 Site Geology and Groundwater	4
3.3 SITE HISTORY	4
3.3.1 Winnipeg Henderson Directories	6
3.3.2 Aerial Photographs	7
3.3.2 Insurers Advisory Organization (IAO) Maps	7
3.4 REGULATORY INFORMATION	8
3.5 ENVIRONMENTAL ISSUES	8
3.5.1 Air Emissions	8
3.5.2 Asbestos Containing Material	8
3.5.3 Chemical Use and Storage Activities	8
3.5.4 Underground Storage Tanks (USTs)	8
3.5.5 Ozone Depleting Substances (ODS)	8
3.5.6 Polychlorinated Biphenyls (PCBs)	9
3.5.7 Solid Waste	9
3.5.8 Hazardous Waste	9
3.5.9 Liquid Effluents	9
3.5.10 Dumps and Landfills	9
3.5.11 Nuisance Odours and Noise	9
4.0 CONCLUSIONS AND RECOMMENDATIONS	9
5.0 CLOSURE	10
6.0 REFERENCES	11

LIST OF APPENDICES

Appendix A	Site Location Figures
Appendix B	Statement of Limitations
Appendix C	Site Photographs
Appendix D	Aerial Photographs
Appendix E	Certificate of Land Title
Appendix F	Reports

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND AND TERMS OF REFERENCE

At the authorization of Mr. Tat-Liang Cheam of Nejmark Architects on behalf of the Canadian Tire Corporation Limited, AEE conducted a Phase 1 Environmental Site Assessment of 1655 18th Street in Winnipeg, Manitoba. The legal description of the property is outlined in Manitoba Certificate of Title # 146264 (Appendix E) and the property is subsequently referred to as the site in this report.

The environmental site assessment consisted of historical research and records review, site inspection and interviews with applicable personnel knowledgeable of the site.

1.2 SITE LOCATION

The site was located on the east side of 18th Street in Brandon, Manitoba. The site location is shown in Figures A1 and A2 (Appendix A).

2.0 ENVIRONMENTAL SITE ASSESSMENT PROCESS

2.1 OBJECTIVES

The purpose of the site assessment was to identify actual and potential contamination at the site that may have resulted from current or previous land uses, construction activities, management, or operation of the subject property or adjacent properties since it underwent development. The work plan was focussed on assessing the potential for environmental conditions which would have an impact on the property value or users of the property. Site observations were of a visual, walk-through type and did not include sampling or testing, a process consistent with the industry standard.

2.2 SCOPE AND LIMITATIONS

As part of the ESA process, it was necessary to establish past and current activities at the site and assess the potential for these activities to have environmental impacts on the site.

The site assessment consisted of a review of:

- historical and current documentation pertaining to the site, including AEE files;
- development of an understanding of the site in relation to its surrounding environment; and
- inspection of the site to identify practices or circumstances that may present potential environmental liabilities.

Specific environmental issues that were addressed included:

- air emissions;
- asbestos containing materials;
- chemical use and storage activities;

- underground and aboveground storage tanks;
- ozone-depleting substances;
- polychlorinated biphenyls (PCBs);
- solid wastes;
- hazardous wastes;
- liquid effluents;
- dumps and landfills; and
- nuisance odours and noise.

While this report provides an overview of potential environmental concerns, both past and present, the environmental site assessment process is limited by the availability of information at the time of the assessment. It is possible that unreported disposal of waste or illegal activities impairing the environmental status of the property may have occurred which could not be identified within the budget and time frame of the assessment. A statement of limitations is provided in Appendix B.

2.3 METHODOLOGY

This assessment was conducted in general accordance with the Canadian Standards Association (CSA) ¹ guidelines, which are currently referenced by CMHC and most banking institutions. Briefly, these procedures set standards for review of information pertaining to the site, development of detailed checklists or protocols, conducting the site inspection and preparation of the final report.

2.3.1 Site Visit

Mr. David Bynski, B.Sc.C.E. of AEE visited the site on September 28, 1998. Mr. Stuart Cruse, Store Manager, of Canadian Tire assisted in the site inspection and provided information on the site at 1655 18th Street. AEE's standardized check list was completed at the time of the site inspection. The check list has been retained in AEE's files, as a record of service.

2.3.2 Historical Review

A summary of the site history was completed through a review of available sources of land use information, in order to assess the potential for site contamination from historic site activities. The sources reviewed as part of the assessment included:

- Aerial photographs between 1947 and 1995;
- Manitoba Environment Files;
- Henderson Directories;
- The City of Brandon Assessment Department files;
- AEE files; and
- Interviews with people knowledgeable of site history.

¹ Canadian Standards Association, CSA Z768-94, Phase 1 Environmental Site Assessment, April 1994.

3.0 RESULTS AND DISCUSSION

3.1 SETTING OF SITE AND SURROUNDINGS

The site was developed with a two storey commercial building and a one storey gas bar, located on the east side of 18th Street in Brandon. The site is bounded by industrial and commercial buildings to the north and east, a cemetery to the south, and a commercial strip mall to the west across 18th Street.

Adjacent land uses at the time of the site investigation were as follows:

North:	Commercial (restaurant, service station and car lot) & Industrial (Bulk fuel storage).
South:	Cemetery.
East:	Commercial (lumber retail) & Industrial (machine shop).
West:	Commercial (strip mall).

3.2 SITE CONDITIONS

3.2.1 Site Appearance

The site encompasses a plan area of 6.8 hectares (68000 m²) and was developed with a two storey commercial building and a one storey gas bar, with the remainder of the site being comprised of an asphalt paved parking lot and undeveloped land (partially wooded). The two storey commercial building consisted of a retail section (approximately 3000 m²), a service center (approximately 500 m²) and a warehouse area (approximately 1500 m²) and occupied approximately 6.5% of the property. The gas bar was located at the south west end of the parking lot and consisted of a kiosk and two sets of pump islands covered by a canopy (occupied less than 1% of the property). The asphalt pavement surrounded the building and extended 75m south of the store for parking. The wooded area was located to the east of the store (and occupied approximately 3.8 hectares), with the remainder of the undeveloped land (approximately 1.2 hectares) being situated between the parking lot and the south property line. The retail building was constructed, in 1972, of hollow core concrete block walls with a concrete slab on grade floor and steel roof trusses covered with steel decking and built-up roofing (flat roof). An addition to the warehouse was constructed, in 1994, of wood frame with the exterior covered with corrugated metal and the interior insulated and left uncovered. The retail area had an interior finish of painted drywall walls (over steel frames), suspended tile ceilings and tile floors and lighting by florescent bulbs. The building was heated by a natural gas powered forced air system. The warehouse and service center had block walls and uncovered concrete slab floors and were illuminated by flourescent lighting. The (20m²) gas bar building was constructed in 1989 of concrete block with a concrete slab floor.

The retail area consisted of display shelves and a series of cashier bays with a lunch room and offices located on the second floor (which consisted of a 6m wide by 10m long area above the cashier bays). The warehouse area consisted of a series of storage shelves and a loading dock located at the northeast corner of the building and also had an area where used batteries were stored (in a CSA certified plastic storage container) and spent solvents and acid (from the used batteries) were stored (in CSA certified storage barrels). The service center consisted of ten service bays, each complete with hydraulic lifts and pneumatic tools and a drainage trench that ran throughout the entire service center (that had an oil seperator unit). A storage room was located off

the service center which contained a used battery storage container and various metals for recycling. Also an underground storage tank (UST) for used oil was located outside the service center to the east of the building (with the fill pipe located inside the service garage) and a oil interceptor trench was located just outside the building (to the south in front of the overhead doors that provided entry into the service bays).

The used batteries were removed by Excide Canada and the spent solvents, battery acid and used oil were removed by Envirowest.

Photographs, taken during the site inspection, are included in Appendix C.

3.2.2 Topography and Drainage

The asphalt paved portion of the property (including the lane behind the building, parking lot to the south and west of the building and the loading area to the east) sloped away from the building and drained to the catch basins in the parking lot and on 18th Street. The undeveloped area to the south of the parking lot was at a lower elevation than the parking lot and drained towards the undeveloped wooded area to the east. The undeveloped area to the east drained towards the swamp area and then south of the site into drainage ditches along agricultural land and eventually into the Assinaboine River.

3.2.3 Site Geology and Groundwater

Based on geological maps, the subsurface stratigraphy in this area of the city normally consists of topsoil and fill materials underlain by alluvial deposits of sand, silt, gravel and clay, to about 3 to 5 m below grade. A zone of clayey till is expected to occur between the clay and bedrock. The approximate depth of bedrock 12 to 15 m below grade. The bedrock is in the Ashville Formation and consists of carbonaceous shale.

3.3 SITE HISTORY

The site was utilized as farmland until the 1930s when an oil refinery, that processed crude oil from southern Manitoba and Saskatchewan, was developed on part of the site. The refinery was expanded throughout the 1940s and 1950s, eventually encompassing most of the present site with processing equipment, storage tanks and a waste oil lagoon. The refinery was owned by various companies and partnerships until it was shut down in 1969. The present Canadian Tire store was built on the site in 1972 (with an expansion constructed in 1994) and a free standing gas bar that was constructed south of the store along the west property line in 1989.

The land to the north of the subject property up to Richmond Avenue was part of the original refinery and has been used for the following purposes since 1969. The land north of the central north section of the subject site has been used as a bulk farm fuel storage facility since the refinery was shut down. A retail gas station has operated since 1975 and a restaurant was developed in the 1990s on the property north of the northwest section of the subject site. Murray Chev Olds has operated an automobile sales center north of the northeast section of the subject site since 1975.

The land to the east of the subject site was utilized for farming and residences when the refinery was originally developed in the 1930s. The refinery was expanded onto the farmland and commercial

development occurred in the residential area during the 1940s and 1950s. Presently the area east of the site (along 13th Street) is occupied by various manufacturing and commercial buildings.

The Brandon Cemetery has been located south of the subject site since before the refinery was developed until present time.

The land to the west of the subject site was utilized as farm land until the Brandon Shopper's Mall was developed in 1973.

3.3.1 Brandon Henderson Directories

To establish the historic site and area occupants, AEE completed a review of the available Henderson Directories at five year intervals extending back to 1945, when no records existed for the site. The review of Henderson Directories is summarized in Table 1.

TABLE 1: HENDERSON DIRECTORY REVIEW SUMMARY

STREET ADDRESS	OCCUPANT	APPROXIMATE DATE
Residences	No records	Prior to 1945
Site o	Anglo Canada Oil Limited	1945 to 1965
	Royal Lite Oil Company Limited, Royal Lite Coffee Bar	1965 to 1968
	Gulf Canada Limited	1968 to 1972
	Canadian Tire	1972 to 1998
North of site; 1500,1515 Richmond Avenue	1515 - Anglo Canada Oil Limited, Refinery Service Station	prior to 1945 to 1965
	1515 - Royal Lite Oil Company Limited, Royal Lite Coffee Bar	1965 to 1968
	1515- Gulf Canada Limited	1968 to 1975
	1515 - Gulf Canada Limited, 1500 - Murray Chev Olds	1975 to 1986
	1515 - Mar-dee Enterprises Bulk Fuel, 1500 Murray Chev Olds	1986 to 1998
North(west) of site; 1525 & 1605 18th Street	Part of Refinery	prior to 1969
	Vacant	1969 to 1975
	1525 - Gulf Centre	1975 to 1986
	1525 - Mar-dee Enterprises Bulk Fuel, Petro Canada Station	1986 to 1998
	1605 - Burger King Restaurant	
West of site; 18th Street & Richmond Avenue	No records	Prior to 1945
	No records (agricultural land)	1945 to 1973
	Brandon Shoppers Mall	1985 to 1998
East of Site; 1550 - 1635 13th Street	1600s - residences	Prior to 1945 to 1958
	1635 - Currie Manufacturing Ltd, 1624 C&C Construction	1958 to 1970
	1635 - W C Cumming & Son Ltd, 1624 C&C Construction	1970 to 1978
	1550 - South End Lumber, 1635 - Can-Mark Manufacturing 1624 - C&C Construction	1978 to 1985
	1550 - South End Lumber, 1635 - Can-Mark Manufacturing 1624 - Manu-fab Brandon	1985 to 1998
South of site; 1901 18th Street	Brandon Cemetery	1945 to 1998

Note: Henderson Directories reviewed on approximately a 5 year interval

No records of the refinery existed for 1655 18th Street (subject site) prior to 1945 because the refinery was addressed on Richmond Avenue.

3.3.2 Aerial Photographs

Table 2 summarizes the aerial photograph review that covered the years 1958, 1990, and 1995 and also summarizes an aerial photograph review of the site that covered the years 1947, 1958, 1964, 1977, 1979 and 1980, that was performed by GeoKwan Engineering Limited in 1990 (see Appendix E for more details).

TABLE 2: SUMMARY OF AERIAL PHOTOGRAPHIC REVIEW

YEAR	LOCATION	COMMENTS
1947	Site & north South East West	Refinery - numerous tanks and refinery equipment. Agricultural land and cemetery. Agricultural land and residences. Agricultural land.
1958	Site & north South East West	Refinery - expanded east and south; more tanks and a lagoon on the southeast corner of the site (that extends further southeast beyond the site boundary). Cemetery. Residences. Agricultural land.
1964	Site & north South East West	Refinery - same as 1958, but lagoon much darker in color than surrounding water bodies (suggesting that waste oil was stored in the lagoon). Cemetery. Commercial and Industrial buildings. Agricultural land.
1977- 1980	Site North South East West	Canadian Tire store and undeveloped land to the south and east (wooded area). Bulk Fuel Storage, Service Station (northeast). Cemetery. Commercial and Industrial buildings. Shopping Mall.
1990	Site North South East West	Canadian Tire store, Gas Bar south of store along west property line and undeveloped land to the south and east (wooded area). Bulk Fuel Storage, Service Station (northeast) and restaurant. Cemetery. Commercial and Industrial buildings. Shopping Mall.
1998	Site North South East West	Canadian Tire store (expansion on east side of building), Gas Bar south of store along west property line and undeveloped land to the south and east (wooded area). Bulk Fuel Storage, Service Station (northeast) and restaurant. Cemetery. Commercial and Industrial buildings. Shopping Mall.

4.3 REGULATORY INFORMATION

The subject site was registered on Manitoba Environment's (ME) list of impacted sites (as of January 1998) and it was listed on ME's list of registered petroleum storage tank sites (as of April 1998).

ME files pertaining to the subject site and the Petro Canada site to the north were reviewed and revealed that the site was impacted by the former petroleum refinery that was operated at the site. According to a 1990 Geokwan Engineering report hydrocarbon contamination was found in the subsoils and groundwater throughout nearly 95% of the site. A vapour extraction system (VES) was installed at the site, around the retail store and throughout the asphalt paved parking lot, in 1992 as recommended in the 1990 Geokwan report. Periodic monitoring of the wells installed as part of the VES has revealed the presence of free petroleum product in the groundwater. A 1998 UMA Engineering monitoring report indicated that hydrocarbon vapour levels were lower in some wells than in earlier monitoring reports, but free product was still present in a number of wells immediately south of the retail store and throughout the parking lot. The VES was still in operation and being monitored on a quarterly basis at the time of the inspection.

3.5 ENVIRONMENTAL ISSUES

The following section on environmental issues pertains only to the activities observed at the Canadian Tire Store and Gas Bar during the site inspection.

3.5.1 Air Emissions

There were no air emissions observed during the site inspection, but when the VES system operates, a slight hydrocarbon odour is sensed in the area.

3.5.2 Asbestos Containing Material

There was no evidence of asbestos containing material at the site.

3.5.3 Chemical Use and Storage Activities

Spent solvents and used batteries and battery acid was stored on site in CSA approved containers, prior to disposal by registered waste haulers, Enviro West and Excide Canada, respectively. A variety of consumer packaged cleaning chemicals were displayed on shelves in the retail section and were stored in the warehouse section of the store.

3.5.4 Underground Storage Tanks (USTs) and Above Ground Storage Tanks (ASTs)

ME petroleum storage tank files indicated that 4 - 22730 litre (5000 gallon) fibre glass USTs were installed at the gas bar in 1989 and a 500 gallon steel (cathodically protected) UST for waste oil was installed outside the service garage in approximately 1980. The waste oil is disposed of by Enviro West.

3.5.5 Ozone Depleting Substances (ODS)

There were no sources of ODSs observed at the time of the site visit.

3.5.6 Polychlorinated Biphenyls (PCBs)

The ballasts from the florescent lights located throughout the site may contain PCBs and therefore should be checked and properly disposed of during replacement.

3.5.7 Solid Waste

There was no solid waste observed at the time of the site inspection.

3.5.8 Hazardous Waste

Some of the cleaning products used in the service garage were hazardous, but the material was stored properly (in sealed 45 gallon drums) and the Material Safety Data Sheets (MSDS) for the products were readily available.

3.5.9 Liquid Effluents

There was no evidence of liquid effluent other than domestic sewage being produced at the site.

3.5.10 Dumps and Landfills

There were no dumps or landfills located within 2 km of the site.

3.5.11 Nuisance Odours and Noise

No loud noises or unusual odours were identified during the site inspection.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The subject property was formerly the site of a petroleum refinery and is known to be impacted. A Gas Bar is operated on the site which has a medium potential for contamination. The potential for contamination due to the activities at the retail store is low.

A Phase II ESA is being carried out at the site to identify contamination in the vicinity of the proposed locations of various expansion/construction options.

5.0 CLOSURE

The Canadian Standards Association notes that 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 site assessment 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 has been prepared for the exclusive use of the Canadian Tire Corporation Limited for specific application to the site. The environmental investigation was conducted in accordance with the work plan prepared for this site and generally accepted assessment practices. No other warranty, expressed or implied, is made. The limitations of this report are specified in Appendix B.

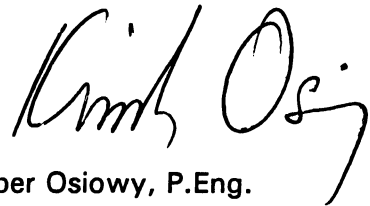
Respectfully submitted,

AGRA Earth & Environmental Limited



David Bynski, B.Sc.C.E.

Reviewed by:



Kimber Osiowy, P.Eng.
Group Leader,
Environmental Site Assessments

Dist: (3) Tat-Liang Chem, Nejmark Architects

WX4528.1

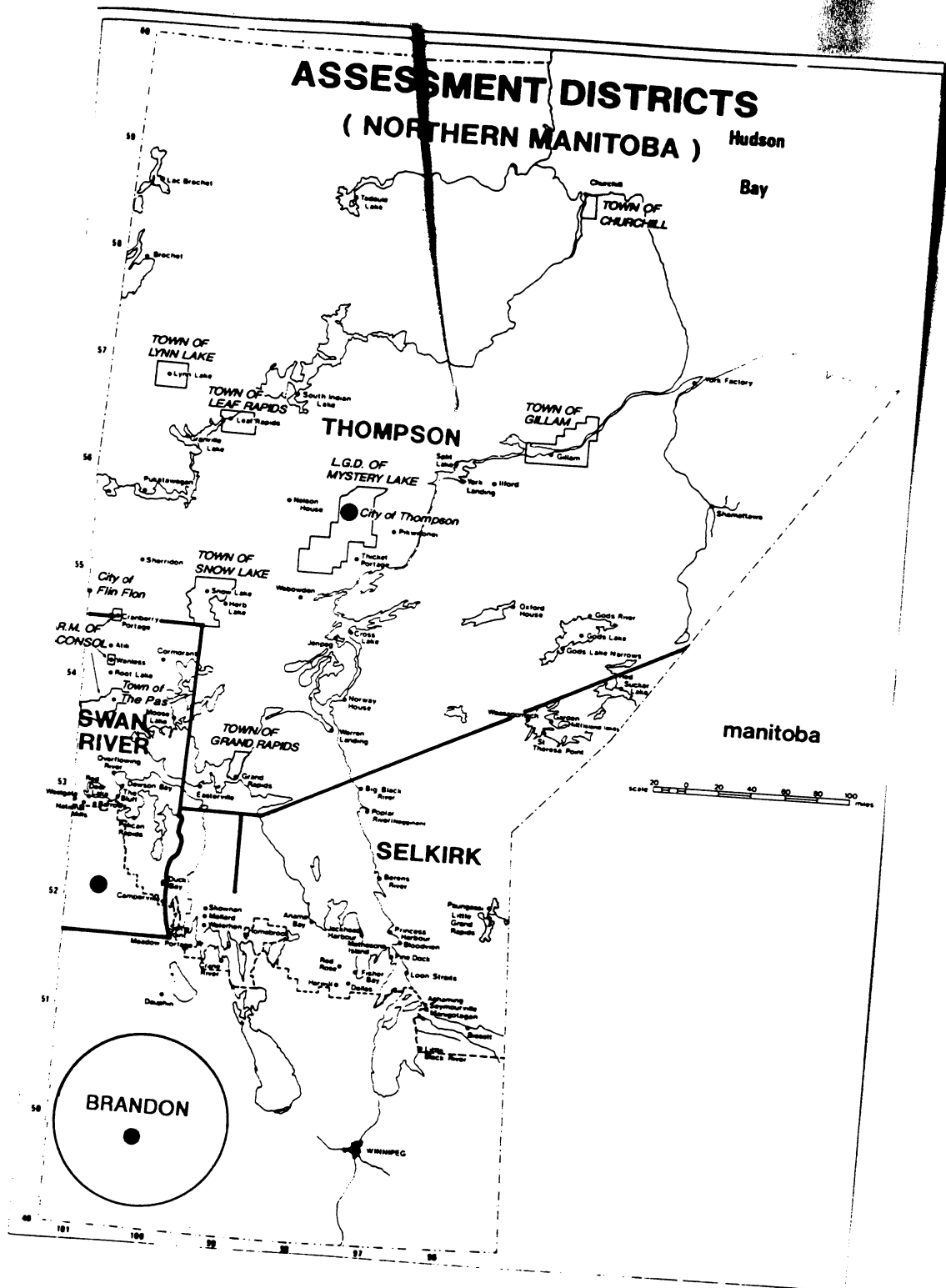
6.0 REFERENCES

Geokwan Engineering Limited. June 18, 1990. Report to Canadian Tire Corporation Limited: Environmental Site Assessment - Stage 2 - 4.

UMA Engineering Limited. July 31, 1998. Performance Monitoring of Brandon, Manitoba Vapour Extraction System - Second Quarter, 1998.

APPENDIX A

SITE LOCATION FIGURES



AGRA

Earth & Environmental Limited

NEJMARK ARCHITECTS

**SITE LOCATION MAP
PHASE I ENVIRONMENTAL SITE ASSESSMENT
1655 18th STREET
BRANDON, MANITOBA**

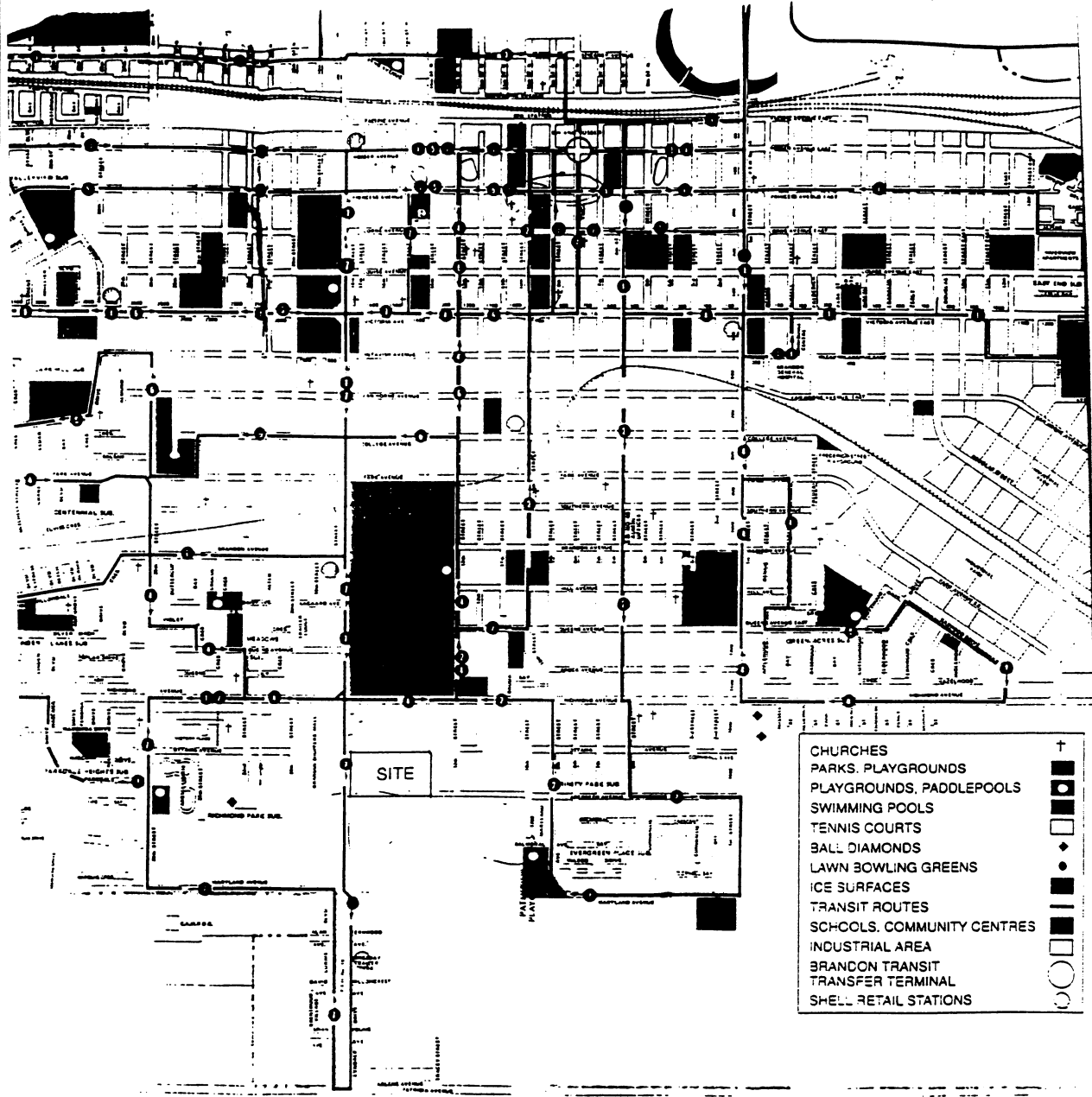
Drawn: DB

Scale: as shown

Date: OCT/98

Project No.: WX-04528.1

Figure: A1



AGRA
Earth & Environmental Limited
NEJMARK ARCHITECTS

SITE LOCATION PLAN
PHASE I ENVIRONMENTAL SITE ASSESSMENT
1655 18th STREET
BRANDON, MANITOBA

Drawn: N/A

Scale: NTS

Date: OCT/98

Project No.: WX-04528.1

Figure: A2

APPENDIX B

STATEMENT OF LIMITATIONS

STATEMENT OF LIMITATIONS

1. The work performed in this report was carried out in accordance with the standard terms of conditions made part of this contract. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described in our contract.
2. The report has been prepared in accordance with generally accepted environmental study and/or engineering practices. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.
3. The services performed and outlined in this report were based, in part, upon visual observations of the site and attendant structures. Our opinion cannot be extended to portions of the site which were unavailable for direct observation, reasonably beyond the control of AGRA Earth & Environmental Limited.
4. The objective of this report was to assess the environmental conditions at the site, within the context of our contract and existing environmental regulations within the applicable jurisdiction. Evaluating compliance of past or future owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services.
5. Our observations relating to the condition of environmental media at the site are described in this report. It should be noted that other compounds or materials other than those described could be present in the site environment.
6. The conclusions of this report are based in part, on the information provided by others. The possibility remains that unexpected environmental conditions may be encountered at the site in locations not specifically investigated. Should such an event occur, AGRA Earth & Environmental Limited must be notified in order that we may determine if modifications to our conclusions and recommendations presented herein, are necessary.

APPENDIX C

SITE PHOTOGRAPHS



PHOTOGRAPH 1: Front of Canadian Tire Store.



PHOTOGRAPH 2: Brandon Shoppers Mall to west of site.



AGRA
Earth & Environmental Limited

NEJMARK ARCHITECTS

SITE PHOTOGRAPHS
PHASE I ENVIRONMENTAL SITE ASSESSMENT
1655 18th Street
BRANDON, MANITOBA

Drawn: N/A

Scale: N/A

Date: OCT/98

Project No.: WX-04528.1


Figure: C1



PHOTOGRAPH 3: Service garage.



PHOTOGRAPH 4: Storage room off of service garage, exhibiting storage bin for used batteries, metal recycling bin and hazardous material storage (with MSDS labels on barrels).

 AGRA <i>Earth & Environmental Limited</i> NEJMARK ARCHITECTS		SITE PHOTOGRAPHS PHASE I ENVIRONMENTAL SITE ASSESSMENT 1655 18th STREET BRANDON, MANITOBA			
Drawn: N/A	Scale: N/A	Date: OCT/98	Project No.: WX-04528.1	Figure: C2	



PHOTOGRAPH 5: Bulk fuel storage, north of the site.



PHOTOGRAPH 6: West extent of wooded area (eastern section) of site.



AGRA
Earth & Environmental Limited

NEJMARK ARCHITECTS

SITE PHOTOGRAPHS
PHASE I ENVIRONMENTAL SITE ASSESSMENT
1655 18th STREET
BRANDON, MANITOBA

Drawn: N/A

Scale: N/A

Date: OCT/98

Project No.: WX-04528.1

Figure: C3

APPENDIX D

AERIAL PHOTOGRAPHS



Air photo from 1958



AGRA

Earth & Environmental Limited

NEJMARK ARCHITECTS

**AERIAL PHOTOGRAPHS
PHASE I ENVIRONMENTAL SITE ASSESSMENT**

**1655 18th STREET
BRANDON, MANITOBA**

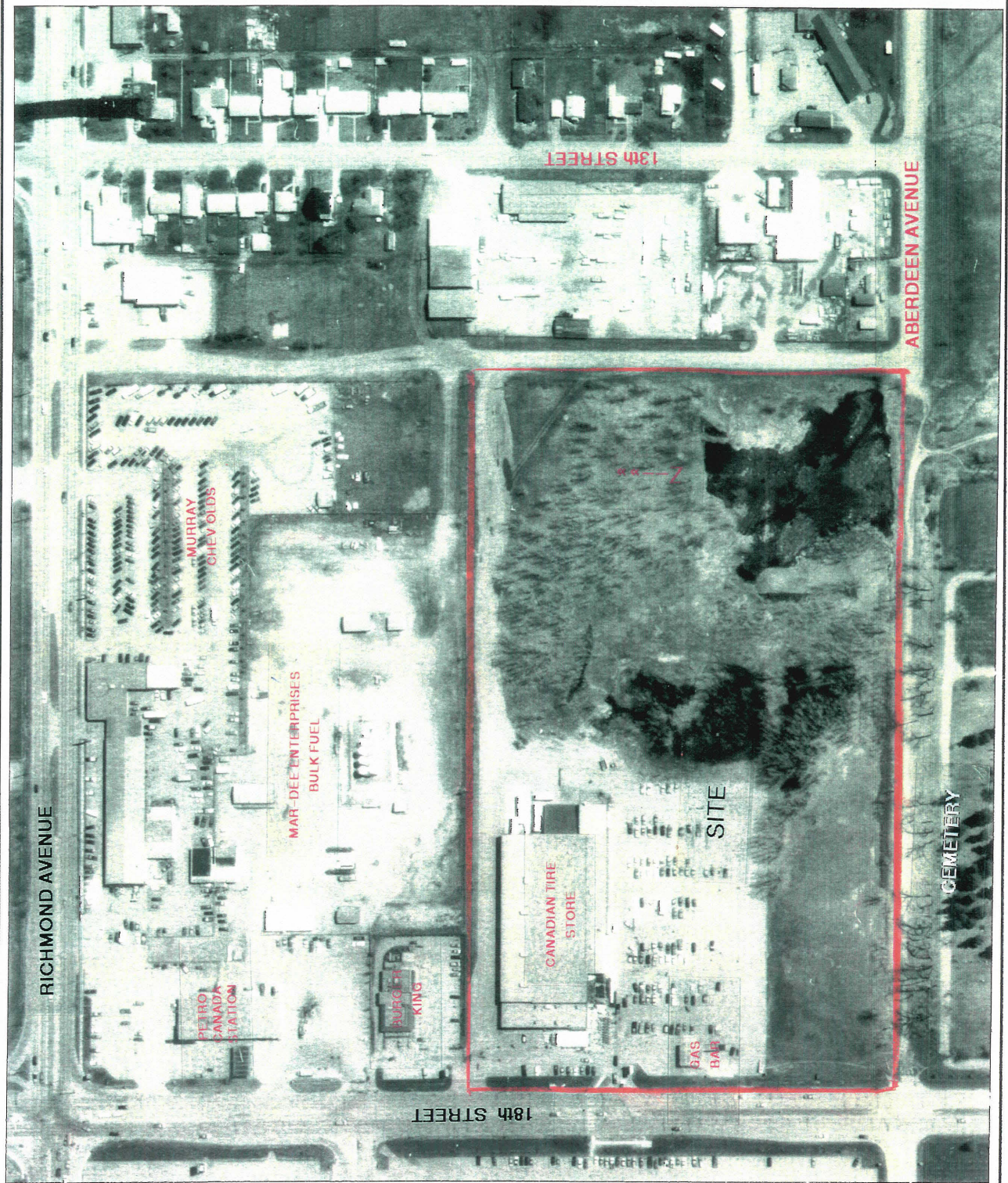
Drawn: N/A

~1:2200

Date: OCT/98

Project No.: WX-04528.1

Figure: D1



Air photo from 1995



AGRA

Earth & Environmental Limited

NEJMARK ARCHITECTS

**AERIAL PHOTOGRAPHS
PHASE I ENVIRONMENTAL SITE ASSESSMENT
1655 18th STREET
BRANDON, MANITOBA**

Drawn: N/A

~1:1250

Date: OCT/98

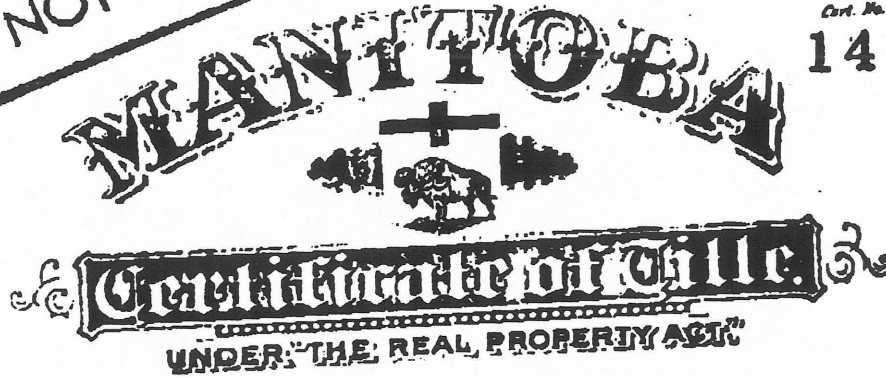
Project No.: WX-04528.1

Figure: D2

APPENDIX E

CERTIFICATE OF LAND TITLE

PHOTOCOPY MADE 30
NOT A DUPLICATE ORIGINAL



Cert. No.

146264

CANADIAN TIRE CORPORATION, LIMITED

is now seized of an estate in fee simple in possession subject to such encumbrances, liens and interests as are notified by memorandum underwritten (or endorsed hereon) in all that piece or parcel of land known and described as follows.

Parcel One: In the City of Brandon, in the Province of Manitoba, and being Lots One to Thirty-eight, both inclusive, Block One, and Lots One to Eleven, both inclusive, in Block Six, as shown on a Plan registered in the Brandon Land Titles Office as No. 326. *Lots 1-38 block 1, Lots 1-11 86 Plan 326*

Parcel Two: In the City of Brandon, in the Province of Manitoba, and being Lots One to Thirty-eight, both inclusive, Block Two, and Lots Twelve to Twenty-three, both inclusive, in Block Six, as shown on a Plan registered in the Brandon Land Titles Office as No. 326. *1-38 B2 12-3386 P 326*

Parcel Three: In the City of Brandon, in the Province of Manitoba, and being Lots One to Twenty-four, both inclusive, Block One, and Lots One to Twenty-four, both inclusive, in Block Two, all as shown on a Plan registered in the Brandon Land Titles Office as No. 330, excepting thereout all mines and minerals as reserved in the Grant thereof from the Crown. *1-24 B1 1-24 B2 P 330*

Parcel Four: In the City of Brandon, in the Province of Manitoba, and being Lots One to Twenty-four, both inclusive, in Block Eleven, as shown on a Plan of part of said City registered in the Brandon Land Titles Office as No. 276, excepting thereout all mines and minerals as reserved in the Grant thereof from the Crown. *1-24 B11 P 276*

Parcel Five: In the City of Brandon, in the Province of Manitoba, and being all of Fifteenth Street and all of the lanes as shown on a Plan registered in the Brandon Land Titles Office as No. 330, excepting thereout all mines and minerals as reserved in the Grant thereof from the Crown. *all of 15th St P 330*

Parcel Six: In the City of Brandon, in the Province of Manitoba, and being all those portions of the Streets, Avenues and Lanes lying East of the Eastern limit of Eighteenth Street and West of the Eastern limit of the lane on the East side of Blocks Five and Six in Plan No. 326 and the production in a straight line of the said East limit and lying South of the North limit of Ottawa Avenue and North of the North limit of the Brandon Land Titles Office as No. 326, excepting out of part of said lands all mines and minerals as reserved in the Grants thereof from the Crown, registered in the said Office as Nos. 51669 and 52949.

Parcel Seven: In the City of Brandon, in the Province of Manitoba, and being all that portion of Ottawa Avenue lying West of the Westerly limit of Fourteenth Street, as same is shown on a Plan of part of said City registered in the Brandon Land Titles Office as No. 227, excepting thereout all mines and minerals as reserved in the Grant thereof from the Crown.

Ⓛ All portions of Sts, Ave + lanes East of E limit of 18th St. + W of E limit of lane on E side of B5+6

Consent under The Planning Act in my
writing with my part here & required. 227
No. 227
P. 326

IN WITNESS WHEREOF I have hereunto signed my name and

affixed my Seal of office this twenty-fifth

day of February

One thousand nine hundred and eighty-one.

Signed in the presence of

APPENDIX F

REPORTS

APPENDIX A

HISTORY OF
CANADIAN TIRE PROPERTY
14th STREET & ABERDEEN AVE.
BRANDON, MANITOBA

The information outlined in this report was based on our visual field inspections (Jan & Feb/90), our discussions with various parties, including Mr. Gorrie, an old Brandon mayor, Mr. Dave Wallace of the City of Brandon, Mr. Maris Rutulis of the Groundwater Division of the Manitoba Department of Natural Resources, Mr. John Agar of O'Connor & Associates in Calgary, and the aerial photos taken during the following years:

- | | | |
|-----|--------------|---------|
| (1) | May 19/1947 | 1:16674 |
| (2) | Oct 29/1958 | 1:17600 |
| (3) | Sept 20/1964 | 1:21120 |
| (4) | Oct 21/1977 | 1:4800 |
| (5) | May 21/1979 | 1:5000 |
| (6) | June 9/1980 | 1:15840 |

According to Mr. Gorrie, Brandon mayor from 1974 to 1977, the old oil refinery was firstly established during the late thirties by private ownership financed through shares. Shortly after in 1938, Home Oil of Calgary purchased the small operation. A few years later, Anglo Oil purchased the company and invested a great deal of money to expand operations. In 1965, Anglo Oil joined operations with Royal Lite and Purity 99 and emerged under the name of Royal Lite. Some years later, Gulf Canada purchased Anglo Oil. The refinery was equipped to process crude oil from southern Manitoba and Saskatchewan and was shut down in 1969. The tanks and associated facilities were removed off site from 1969 to 1970. The old refinery site was purchased by Petro Canada from Gulf Canada during the mid eighties.

We understand that a soils investigation for the original Canadian Tire Store was done in May 1972, at which time the old refinery site was owned by Gulf Canada. During our telephone discussion with Mr. John Agar of O'Connor Associates on February 21, 1990, the writer was advised that in 1985, O'Connor Associates was engaged by Gulf Canada to perform a soil and groundwater study for the swamp located south of Aberdeen Avenue, east of the cemetery in Brandon. At that time, a monitoring well (shown as the gas vapour pipe on the surveyor's plan by WA Beattie in Winnipeg, and on the south side of our testhole 42 as per our site plan, Plate 1) was installed inside the Canadian Tire property and near the inlet point of the swamp. A report dated November 1985 was prepared by O'Connor Associates, a copy of which was given to us by Mr. John Agar of O'Connor & Associates in mid March 1990.

It may be inferred from the above that the old refinery (except the Canadian Tire portion of the property) was owned by Gulf Canada approximately from the late sixties to 1985, and that sometime in or after 1986, the old refinery site (specifically the existing gas station, bulk storage and tank farm located immediately north of the Canadian Tire Store) was sold by Gulf Canada to Petro Canada.

Plate A1 & A2 show the approximate locations of the previous tanks, waste oil storage lagoon and structures presently existing at the old refinery site. These are estimated from our interpretation of historical airphotos of the site. Following is a brief description of the various stages of the old refinery development based upon the airphoto interpretation and site reconnaissance:

In May of 1947, the size of the Oil Refinery was limited to an area bounded to the north by Richmond Avenue, to the west by 18th Street, to the east by a line running through our monitoring wells (MW) 7 & 8 and to the south by a line running through MW 13 & 19. All the tanks drawn in this area (from the 1958 aerial photo) were present except for the seven small tanks located near MW 44 (see plan of old storage tanks, Plate A1 appended).

The area to the east (between our TH 7 & 8 and 14th Street, Plate A1) and to the west (between MW 13 & 19 and Aberdeen Ave.) of the refinery was partly used as farmland. No tanks existed in these two areas. The swamp was very small and was likely used to water the adjacent farmland. No ring dyke was present.

In October of 1958, the oil refinery expanded to an area bounded by Richmond Avenue, Aberdeen Ave, 18th Street and 14th Street as the farmland was apparently bought by the refinery between 1947 and 1958. No tanks were installed on the farmland to the east, but a ring dyke (small lagoon, northwest of MW 23, Plate A2) and an extensive dyke enclosure (a large lagoon built in the swamp to the southeast, Plate A1) were observed. A small trench, running out from the ring dyke to the most northerly portion of the tank farm, was present. On the farmland to the south, large tanks were constructed all the way to the cemetery. The seven small tanks to the southeast of our MW 44 (Plate A1) were present.

In September of 1964, the size of the oil refinery remained constant with the addition of one storage tank located south of

our MW 5. The size of the swamp was at its largest, almost completely filling the dyke enclosure and extended to the southeast, much beyond the enclosure. The colour of the water was very dark in comparison to the Assiniboine River to the north, suggesting that the dyke enclosure at that time might have been used as a waste oil storage lagoon. This thought was confirmed by a nearby old time resident, during our site investigation on January 18, 1990, who said that he used to be an employee of Anglo Oil in the early 60's and that the swamp was at one time covered with 8' of bunker oil. This was also substantiated, during the writer's visit to the Engineering Department of the City of Brandon on February 20, 1990, by Mr. Dave Wallace who had indicated that there were two lagoons at the old refinery site, namely, one at the swamp to the southeast and the other (smaller in size) at the car dealership property to the northeast.

In conversation with the past mayor of Brandon, Mr. Gorrie, he confirmed that the lagoon situated in the southeast corner of the property (corner of 14th Street and Aberdeen Avenue) was used to confine bunker oil. The oil was being stored openly in the lagoon and was mixed with trapped water. The oil was sold to neighboring residents and to the City of Brandon works and operations department who used it to oil down gravel roads.

The surficial soils located to the northwest of the bunker oil storage lagoon and adjacent to the largest storage tank (located at TH4, Plate A1), was semi-dark in colour, indicating that an oil leak might have occurred.

Sometime during 1963 or 1964, people were beginning to complain about waste products from the oil refinery contaminating their shallow wells. Mr. Rutulis, a representative of the provincial government, Water Resources Division, was sent to the oil refinery to investigate.

When he looked over the site, he saw a swamp filled with a black oily substance approximately 5-6' high. He took some water samples from the swamp and found it to be an oil and water mixture. Neither any formal report nor a groundwater study was undertaken. A memo to his superior was written but nothing was resolved. He could not trace that memo for us. According to Mr. Rutulis, the refinery closed down several years later.

In October 1977 & May 1979, the following were observed:

- (1) All tanks were absent from both the Canadian Tire property and oil refinery site (now known as the Petro-Can Bulk Storage & Tank Farm) except for two original tanks located to the northeast of our MW 20 as shown on Plate A2 appended.
- (2) Ten new tanks were constructed for a total of 12 (Plate A2)
- (3) Sand fill, approximately outlined by the asphalt residual (Plate A1), was dumped on site and spread around with a cat.
- (4) Concrete rubble was being dumped near the swamp on Canadian Tire property by people who owned small buildings to the east of the swamp (Plate A1).
- (5) Most of the dyke enclosure for the southeast swamp was absent except for a small portion that exists today (Plate 1).
- (6) Loading racks, propane tank, storage sheds have been constructed on the oil refinery property which is now owned by Petro Canada (refer to plate A2 for locations).

The aerial photos reveal small vegetation across the undeveloped areas within the Canadian Tire property and no vegetation on the sand fill. The surface topography was relatively flat with the exception in the fill area. That area was built up several feet and dropped sharply at its southern extent leading out to the swamp.

No changes in the surface features were evident from the airphotos between May 1979 and June 1980.

As of January 1990, only 9 small tanks are present on the Petro Canada site, approximately located near the old tank farm location (1977). The sizes and locations of the car dealership building, the Petro Canada restaurant and the associated pump islands to the west and south of the restaurant, and fuel loading racks for trucks to the southeast of the said restaurant, have not been modified. The propane tank (1977) has been relocated between the existing tank farm and two sheds (see site plan, Plate 1). Some sheds located immediately north of the Canadian Tire property and to the northeast of our MW 22, have been removed while two situated further inside the Petro Canada Bulk Storage still remain from 1977. A drum storage area is now located immediately south of the existing tank farm.

The undeveloped areas within the Canadian Tire property now contain small and large trees, tall grass and small shrubs. Fill is still present throughout the site, but no dumped concrete rubble exists within the swamp area (see site plan, Plate 1).

- E N D -