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**REPORT ON**

**PHASE I  
ENVIRONMENTAL SITE ASSESSMENT  
MONARCH LANDS - WEST OF JOCKVALE ROAD  
OTTAWA (NEPEAN), NEPEAN**

Submitted to:

Monarch Construction Limited  
3584 Jockvale Road  
Nepean, Ontario  
K2G 3H2

Attention: Mr. Bruce MacNabb

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## EXECUTIVE SUMMARY

Golder Associates Ltd. (hereafter referred to as "Golder Associates") was retained by Monarch Construction Limited (hereafter referred to as "Monarch") to conduct a Phase I Environmental Site Assessment (hereafter referred to as "Phase I ESA") at the property designated as the Monarch Lands - West of Jockvale Road, Ottawa (Nepean), Ontario, hereafter referred to as the "site". As shown on Figures 1 and 2. The Phase I ESA is based on the November 2001 Canadian Standards Association document entitled *Phase I Environmental Site Assessment, Z768-01*.

The scope of work for this project was described in the Golder Associates correspondence dated August 12, 2004. Written authorization to proceed with the Phase I ESA was provided by Monarch on August 28, 2004. It is understood that the Phase I ESA is being carried out because of the pending development of the site.

Based on the information obtained during the Phase I ESA, no issues of potential environmental concern were identified. However, the following items are noted:

Former buildings (likely farm related) were located on site in the area of the current construction site office. These buildings may have had wells and/or septic systems. If encountered at a future date (i.e. during development) the well and/or septic system should be abandoned in accordance with applicable provincial regulations. In addition, rubble fill may be encountered in the area of the former buildings, it is anticipated that the fill material can be removed or re-used on site at the time of development.

Several above ground storage tank ("ASTs") are located in the area of the golf course maintenance facility. With the exception of the area of the waste oil AST, no obvious issues of potential environmental concern (stains, sheens) were noted. The underside of the waste oil AST was observed to have some small stains, likely indicative of spillage when pouring waste oil into the AST. At the current time the stains were relatively small and isolated and do not present an issue of potential environmental concern, however the handling practice of the waste oil should be reviewed. In addition, it would be prudent environmental management practice to have secondary containment (i.e. spill trays) for the ASTs.

Areas of the site adjacent to the golf course are noted to have fill material. The fill has been placed for landscaping/aesthetic purposes. According to the Site Representative(s) the fill material has been imported from off-site sources (residential construction) and it is not expected that these sources are of environmental concern. No obvious stained areas, distressed vegetation areas or odours that would be indicative of hydrocarbons or chemicals were noted in the filled areas by Golder Associates at the time of the site visit.

*The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.*

A repair outlet (Capital Burner Service) is situated on the west side of Jockvale Road (east boundary of the site). An AST was noted to be present on this property in an April 2001 Phase I ESA carried out by Golder Associates but is no longer present. The groundwater flow is expected to be in a northeasterly direction towards the Jock River and the Rideau River and as such, there is a low potential for impacts to the site from this off-site facility.

At the time this report was issued, a response letter from the Ontario Ministry of Environment and the City of Ottawa had not been received by Golder Associates. When a formal response to Golder Associates' request for information is received, it will be reviewed. If, in Golder Associates' opinion, the response details any issues of potential environmental concern with respect to the site, a copy will be forwarded to Monarch (with a brief discussion) so that it can be appended to this report.

*The Executive Summary highlights key points from the report only; for complete information and findings, as well as the limitations, the reader should examine the complete report.*

## TABLE OF CONTENTS

Executive Summary	i
Table of Contents	iii

SECTION	PAGE
1.0 INTRODUCTION AND BACKGROUND .....	1
1.1 General.....	1
1.2 Scope of Work.....	1
2.0 PHYSICAL SETTING .....	3
2.1 Site Setting and Activities .....	3
2.2 Regional Geological Setting .....	4
3.0 REVIEW OF HISTORICAL INFORMATION.....	6
3.1 Interview(s).....	6
3.2 Aerial Photograph Review .....	7
3.3 Title Search .....	7
3.4 Review of Fire Insurance Plan Records.....	8
3.5 Review of Street Directories .....	8
3.6 Previous Environmental Reports.....	8
4.0 REGULATORY INFORMATION REVIEW.....	10
4.1 Ontario Ministry of Environment Correspondence.....	10
4.2 Technical Standards and Safety Authority Correspondence.....	10
4.3 Government/Municipal Records.....	11
4.3.1 City of Ottawa Correspondence .....	11
4.4 Ontario Ministry of Environment Document Review .....	12
5.0 SITE VISIT FINDINGS AND COMMENTS .....	13
5.1 Outside (Exterior) Areas .....	13
5.2 Building(s) .....	13
5.2.1 Suspect Asbestos-Containing Materials.....	13
5.2.2 Suspect PCB-Containing Materials and Equipment .....	14
5.2.3 Urea Formaldehyde Foam Insulation .....	15
5.2.4 Lead.....	15
5.2.5 Ozone-Depleting Substances.....	15
5.2.6 Radon .....	16
5.2.7 Mercury.....	16
5.2.8 Air Emissions .....	16
5.2.9 Mould .....	17
5.2.10 Radioactive Materials.....	17
5.3 Solid Waste Disposal Practices and/or Areas of Storage/Waste .....	18

---

**TABLE OF CONTENTS (cont'd)**

5.4 Water and Wastewater Discharges ..... 18  
5.5 Odour, Noise and Vibration ..... 19  
5.6 Electromagnetic Frequencies ..... 19  
5.7 Storage Tanks ..... 19  
    5.7.1 Above Ground Storage Tanks ..... 19  
    5.7.2 Underground Storage Tanks ..... 20  
5.8 Storage, Handling and Disposal of Hazardous Materials ..... 20  
5.9 Adjacent Land Use ..... 21  
6.0 ISSUES OF POTENTIAL ENVIRONMENTAL CONCERN ..... 22  
7.0 LIMITATIONS AND USE OF REPORT ..... 23  
8.0 CLOSURE ..... 24

In Order  
Following  
Page 24

**LIST OF FIGURES**

- FIGURE 1 - Key Plan
- FIGURE 2 - Site Plan

**LIST OF APPENDICES**

- APPENDIX A - Qualifications of Environmental Assessors
- APPENDIX B - Agency Correspondence

## **1.0 INTRODUCTION AND BACKGROUND**

### **1.1 General**

Golder Associates Ltd. (hereafter referred to as "Golder Associates") was retained by Monarch Construction Limited (hereafter referred to as "Monarch") to conduct a Phase I Environmental Site Assessment (hereafter referred to as "Phase I ESA") at the property designated as the Monarch Lands - West of Jockvale Road, Ottawa (Nepean), Ontario, hereafter referred to as the "site". As shown on Figures 1 and 2. The Phase I ESA is based on the November 2001 Canadian Standards Association document entitled *Phase I Environmental Site Assessment, Z768-01*.

The scope of work for this project was described in the Golder Associates correspondence dated August 12, 2004. Written authorization to proceed with the Phase I ESA was provided by Monarch on August 28, 2004. It is understood that the Phase I ESA is being carried out because of the pending development of the site.

Appendix A includes resumes of Golder Associates staff involved with this Phase I ESA.

### **1.2 Scope of Work**

As previously indicated, the scope of work for the Phase I ESA carried out on the site is based on the November 2001 Canadian Standards Association (hereafter referred to as "CSA") document entitled *Phase I Environmental Site Assessment, Z768-01*. The Phase I ESA consisted of the following components:

- a records review;
- a site visit;
- interviews with regulatory officials and/or personnel associated with the site and adjoining properties;
- an evaluation of information obtained; and,
- preparation of this report.

This Phase I ESA report is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of the site visit. This Phase I ESA did not include an evaluation of operational or management systems compliance. Furthermore, Golder Associates did not conduct a health and safety, engineering or structural evaluation of the site.

The size of the site prohibited a detailed “foot by foot” review; as such, specific areas of the site were targeted (based on review of historical documents and interview information) for assessment.

A “designated substance”, as defined in The Occupational Health and Safety Act (hereafter referred to as “OHSA”) and the Workplace Hazardous Material Information System (hereafter referred to as “WHMIS”) regulation (1990) is a *“biological, chemical or physical agent or combination thereof prescribed as a designated substance to which the exposure of a worker is prohibited, regulated, restricted, limited, or controlled”*. Sections of this report discuss the designated substances normally reviewed as part of a Phase I ESA. The designated substances review was performed for the site as a whole. No intrusive sampling or analytical testing for materials/substances of potential environmental concern (e.g., polychlorinated biphenyls, lead, mercury, asbestos-containing materials, mould, etc.) was undertaken as part of this Phase I ESA.

## 2.0 PHYSICAL SETTING

### 2.1 Site Setting and Activities

The general location of the site is shown on the Key Plan, Figure 1 and the general site configuration is shown on the Site Plan, Figure 2. Characteristics of the site, based on the Golder Associates site visit carried out on September 2, 2004, are as follows:

SITE CHARACTERISTICS				
<b>Use</b>	Undeveloped with the exception of the construction office trailer and golf maintenance facility.			
<b>Address or Location</b>	Between Greenbank Road and Jockvale Road on both the east and west side of Cambrian Road designated as the "Monarch Lands - West of Jockvale Road, Ottawa (Nepean)"			
<b>Setting</b>	<ul style="list-style-type: none"> <li>Urban fringe area.</li> <li>Mainly farmland.</li> <li>Access via Greenbank, Jockvale and Cambrian Roads.</li> </ul>			
<b>Area (approx.)</b>	141 hectares (350 acres)			
<b>Configuration</b>	Irregular			
<b>Services</b>	Not serviced except in areas of site structures (construction office trailer and golf maintenance facility). These structures have a variety of services including electrical, bell, water (municipal/well) and sanitary septic systems.			
<b>Presence of Fill Material</b>	<ul style="list-style-type: none"> <li>Isolated areas (golf course landscaping).</li> <li>Roadway/structure foundations.</li> </ul>			
<b>Other Site Comments</b>	<ul style="list-style-type: none"> <li>Project North: Based on Jockvale Road having a north-south axis.</li> </ul>			
<b>Waste Storage</b>	<b>Waste</b>	<b>Container</b>	<b>Location</b>	<b>Contractor</b>
	Domestic	Dumpster	West of Construction Office	Goulbourn Sanitation
	-	-	-	-
Exterior Areas				
<b>Gravel Areas</b>	Construction roads.			
<b>Landscaped/Grassed Areas</b>	Minimal (around construction office).			
<b>Paved Areas</b>	None			
<b>Treed Areas</b>	Isolated areas and along fence lines.			
<b>Exterior Storage Tanks</b>	Three above ground storage tanks at rear (east) of golf maintenance facility. No underground storage tanks. Underground storage tanks ("USTs) and/or above ground storage tanks ("ASTs) are discussed in Sections 5.7.1 and 5.7.2.			
<b>Other Exterior Observations</b>	<ul style="list-style-type: none"> <li>Various ditches (mainly along fence lines).</li> <li>Construction roads in area of construction office trailer and golf maintenance facility.</li> </ul>			
Building(s)				
<b>Name</b>	Construction Office		Golf Maintenance Facility	-
<b>Occupant(s)</b> • <b>Type of Business</b>	Monarch Construction <ul style="list-style-type: none"> <li>Construction administration &amp; show room.</li> </ul> Note: Several small garages (storage) are located in this area).		Stonebridge Golf Course <ul style="list-style-type: none"> <li>Golf course maintenance</li> </ul> Note: A small dome facility (storage) is located in this area).	-
<b>Location</b>	Southwest of Cambrian Road		Southwest of Cambrian Road	-
<b>Configuration</b>	Rectangular		Rectangular	-
<b>Construction Date</b>	1999		2002	-
<b>Renovation/Addition Date</b>	None		None	-



SITE CHARACTERISTICS			
<b>Floors (including ground floor)</b>	1	1	-
<b>Basement</b>	None	None	-
<b>Footprint Area (approx.)</b>	353 sq/m	836 sq/m	-
<b>Elevators</b>	None	None	-
<b>Oil/Water Interceptor</b>	None	None	-
<b>Hoist</b>	None	One (electric)	-
<b>Air Emissions</b>	<ul style="list-style-type: none"> <li>• Heating/cooling</li> <li>• Washrooms</li> </ul>	<ul style="list-style-type: none"> <li>• Heating/cooling</li> <li>• Washrooms</li> <li>• ASTs</li> </ul>	-
<b>Heating</b>	Electric baseboard	Electric baseboard (front) Propane blowers (rear)	-
<b>Interior Storage Tanks</b>	None Underground storage tanks ("USTs) and/or above ground storage tanks ("ASTs) are discussed in Section 5.7.1 and 5.7.2.	Two above ground storage tanks in service bay (west end) of golf maintenance facility. Underground storage tanks ("USTs) and/or above ground storage tanks ("ASTs) are discussed in Section 5.7.1 and 5.7.2.	-
<b>Building Construction</b>	<ul style="list-style-type: none"> <li>• Trailer</li> <li>• No permanent foundation</li> </ul>	<ul style="list-style-type: none"> <li>• Dome</li> <li>• Concrete foundation</li> </ul>	-
<b>Exterior Finish</b>	<ul style="list-style-type: none"> <li>• Roof: metal</li> <li>• Façade: siding</li> </ul>	<ul style="list-style-type: none"> <li>• Roof: half-dome fabric</li> <li>• Façade: siding</li> </ul>	-
<b>Interior Finish</b>	<ul style="list-style-type: none"> <li>• Floors: carpet, tile</li> <li>• Walls: painted</li> <li>• Lighting: fluorescent</li> <li>• Ceiling: finished</li> </ul>	<ul style="list-style-type: none"> <li>• Floors: exposed concrete</li> <li>• Walls: siding, block</li> <li>• Lighting: incandescent</li> <li>• Ceiling: exposed dome</li> </ul>	-
<b>Other Building Observations</b>	<ul style="list-style-type: none"> <li>• Entrance on the east and west side.</li> </ul>	<ul style="list-style-type: none"> <li>• Entrance is drive through garage doors on east and west side.</li> </ul>	-

Note: "-" Designates not applicable

## 2.2 Regional Geological Setting

The following maps/reports were reviewed to determine the general geological and topographical conditions in the area of the site:

- *Natural Resources Canada – Topographical Map 31G5, Ottawa, 11<sup>th</sup> Edition, 1994;*
- *Ministry of Natural Resources, Ontario Geological Survey – Map P2716, Paleozoic Geology, Ottawa Area, 1984;*
- *Geological Survey of Canada – Map 1506A, Surficial Geology, Ottawa, 1982; and,*
- *Geological Survey of Canada – Paper 77-11, Figure 4, Drift Thickness Trend, 1979.*

Geological information on the site and/or surrounding area (200m), based on the above, is as follows:

<b>GEOLOGICAL INFORMATION</b>	
<b>Native Subsurface Soils (expected)</b>	West: OFFSHORE MARINE DEPOSITS: clay, silty clay and clay, commonly calcareous and fossiliferous; locally overlain by thin sands. Upper parts are general mottled or laminated reddish brown and bluish grey and may contain lenses and pockets of sand, but at depth the clay is uniform and blue grey. East: Till, plain; local relief <5m (<15ft)
<b>Depth to Bedrock (approximately)</b>	12m <u>Note:</u> Golder is aware (based on subsurface investigations) that the depth to bedrock in the eastern area of the site is less than 12 m.
<b>Type of Bedrock (expected)</b>	Oxford Formation: sublithographic to fine crystalline dolostone
<b>Topography (expected)</b>	Very slight slope towards the east.
<b>Regional Groundwater Flow (inferred)</b>	Northeasterly
<b>Nearest Open Water Body</b>	Jock River (0.5 km north and 1.0 km east) with an easterly flow. Rideau River (1.25 km east) with a northerly flow.
<b>Prominent Physical Features</b>	None

It should be noted that local groundwater flow may be influenced by underground utilities (i.e., service trenches) and building structures. For example, the gravel pack used around utilities, such as storm sewers, can act as interceptors and redirect groundwater flow along the direction of the pipe. If a more accurate description of geology, groundwater flow and groundwater quality is required, a subsurface investigation would be required.

### 3.0 REVIEW OF HISTORICAL INFORMATION

Historical information on the site and/or surrounding area (200m) was obtained from the following sources:

SUMMARY OF HISTORICAL INFORMATION SOURCES							
Interview(s)							
Name	Interview Date	Position			Company		
Bruce MacNabb*	September 2, 2004	Ottawa Area Land Manager			Monarch Construction		
-	-	-			-		
*Note: Hereafter known as the "Site Representative(s)".							
Aerial Photograph Review							
Year	-	-	1952	1960	1979	1991	1997
No.	-	-	A13510-411	A17264-147	A25114-101	A27761-5	A1234-23
Scale	-	-	1:15,000	1:25,000	1:25,000	1:50,000	1:6,250
Review of Fire Insurance Plan Records							
Source(s)	National Archives, Ottawa						
Year(s)	None available.						
Review of Street Directories							
Source(s)	National Archives, Ottawa						
Year(s)	1975, 1984, 1993, 2003/04						
Previous Environmental Reports							
Refer to Section 3.6.							

#### 3.1 Interview(s)

Refer to the Summary of Historical Information Sources table for interview contact information. The Site Representative(s) provided the following information which is pertinent to the Phase I ESA:

- To his knowledge, no spills of chemical products, liquid waste or hydrocarbons have occurred on the site;
- No obvious environmental concerns (stains, stressed vegetation) have been noted with regard to adjacent properties, including Capital Burner Services located at 3850 Jockvale Road;
- Fill material had been, and currently is being imported from off site sources (residential construction) and it is not expected that these sources are of environmental concern;
- Monarch has owned most of the site since 1989 and prior to that the lands were used for agricultural purposes;
- There have been no complaints with respect to mould at the site;
- Former farm buildings were demolished with most of the rubble fill removed and the remaining rubble fill material planned for removal at the time of development;

- Construction site office was placed on site in 1999 and the golf maintenance facility was built in 2002;
- Construction site office is on municipal water with a septic bed/tanks and the golf maintenance facility is on a private well with septic holding tanks; and
- The private water well is tested for portability bi-annually and the septic systems are pumped 3-4 times per annum.

The interview information provided by the Site Representative(s) does not indicate any issues of potential environmental concern.

### **3.2 Aerial Photograph Review**

Selected aerial photographs for the site were obtained from the National Air Photo Library in Ottawa, Ontario by Golder Associates personnel. The review of the aerial photographs was conducted to develop a general history of the development of the site and surrounding properties (within approximately 200 m). Aerial photographs may be at a scale that limits a detailed review of the site and surrounding area.

The aerial photograph review indicates that the site lands have been historically used for agricultural purposes. Some buildings (probably farm related) were noted along Jockvale Road south of Cambrian Road in the area of the construction site office. The aerial photograph review of the site and surrounding area (within approximately 200 m) does not indicate any obvious issues of potential environmental concern. However, the farm related buildings may have had wells and/or septic systems. If encountered at a future date (i.e. during development) the well and/or septic system should be abandoned in accordance with applicable provincial regulations.

### **3.3 Title Search**

The Site Representative(s) indicated that Monarch has owned most of the site since 1989 and prior to that the lands were used for agricultural purposes (confirmed in the aerial photograph review). As such, a title search has not been carried out as part of the Phase I ESA since it would likely not provide information of environmental consequence.

### 3.4 Review of Fire Insurance Plan Records

Research was carried out in the Public Archives in Ottawa, Ontario to review fire insurance plans or drawings for the site. No fire insurance plans were available for the site.

### 3.5 Review of Street Directories

A review of City Directories at the National Archives in Ottawa, Ontario was completed for the site and addresses within approximately 200 m of the site. Based on the review of select City Directories, the site and surrounding lands have been occupied by residential/farm related tenants with the exception of Capital Burner Service Limited (3650 Jockvale Road) listed in the 1993 and 2003/04 directories. This facility is located on the east side of the site. Based on the inferred groundwater flow direction (north easterly) there is a low potential for impacts from this facility. In addition, the Site Representative(s) indicated that no obvious environmental concerns (stains, stressed vegetation) are noted with regard to adjacent properties, including Capital Burner Services located at 3850 Jockvale Road.

### 3.6 Previous Environmental Reports

Previous Phase I ESA reports carried out by Golder Associates for Monarch on the site or on adjacent lands included the following:

*Phase I Environmental Site Assessment, Jockvale Golf Course Community, Nepean, Ontario* carried out by Golder Associates (ref - 981-2423) for Monarch dated March 1998, hereafter known as the March 1998 Phase I ESA.

- The lands for the March 1998 Phase I ESA consisted of an off-site property located to the northeast of the current site; and
- No issues of potential environmental significance were noted.

*Phase I Environmental Site Assessment, Sala Lands, Nepean, Ontario* carried out by Golder Associates (ref - 981-2501) for Monarch dated October 1998, hereafter known as the October 1998 Phase I ESA.

- The lands for the October 1998 Phase I ESA consisted of a small portion of the current site centrally located on the west side of Jockvale Road; and
- No issues of potential environmental significance were noted.

*Phase I Environmental Site Assessment, Monarch Lands – East of Jockvale Road, Ottawa, Ontario* carried out by Golder Associates (ref – 011-2410) for Monarch dated April 2001, hereafter known as the April 2001 Phase I ESA.

- The lands for the April 2001 Phase I ESA consisted of lands east of Jockvale Road (north and south of Cambrian Road);
- The April 2001 Phase I ESA concluded:
  - A repair outlet (Capital Burner Service) is situated on the west side of Jockvale Road to the west of the site. An above ground storage tank was noted to be present on this property. Although the groundwater flow is expected to be in an easterly direction towards the Jock River and the site, it is anticipated that any potential subsurface contamination originating from this above ground storage tank would be intercepted by the underground utilities along Jockvale Road;
  - Significant landscaping has been completed at the site for aesthetic and golf course purposes. According to the site representative, fill material used for the landscaping was from both onsite and off site sources. The fill material imported from off-site sources is from local construction sites and it is anticipated that no environmental related issues are associated with the fill materials; and
  - Temporary ASTs were located in the area of the golf course maintenance shop. Based on the brief time these tanks have been located in this area, it is unlikely that they have impacted the soil and/or groundwater on the site. Furthermore, it is understood that these tanks are to be removed to the permanent golf course maintenance shop on the west side of Jockvale Road.

A number of other groundwater resource reports, hydrogeological evaluation reports, groundwater monitoring reports and geotechnical investigation reports were carried out by Golder Associates for the site. They will be referenced in various sections of this report as appropriate.

## 4.0 REGULATORY INFORMATION REVIEW

Regulatory information requests and reviews for the site and/or surrounding area (200m) included the following sources:

SUMMARY OF REGULATORY INFORMATION	
Regulatory Agencies and/or Government Departments Contacted	
Ontario Ministry of Environment ("MOE")	
Technical Standards Safety Authority ("TSSA")	
City of Ottawa ("City")	
City Documents	
<ul style="list-style-type: none"> <li>• 1988 Intera report entitled Mapping and Assessment of Former Industrial Sites, City of Ottawa*</li> </ul>	
*Note: This report was reviewed if the site was within the City of Ottawa municipal boundary prior to the 2001 amalgamation.	
MOE Documents/Databases	
<ul style="list-style-type: none"> <li>• MOE Database on PCB Storage Sites, 2000*;</li> <li>• Waste Disposal Site Inventory, June 1991;</li> <li>• Inventory of Coal Gasification Plant Waste Sites in Ontario, April 1987; and,</li> <li>• MOE Computer Database on Registered Waste Generators, 2001*.</li> </ul>	
*Note: The information extracted from the MOE PCB Storage Sites and Waste Generator databases was used by Golder Associates under license with the Ontario Ministry of Environment, Queens Printer for Ontario (2000 and 2001).	

### 4.1 Ontario Ministry of Environment Correspondence

The MOE was contacted (refer to copy of correspondence in Appendix B) to provide an *Index Report* with respect to active orders and approvals for the site as detailed below:

- active orders under the *Environmental Protection Act* (EPA), the *Ontario Water Resources Act* (OWRA), and the *Pesticides Act* (PA); and
- approvals under Sections 9 and 39 of the EPA as well as Sections 52 and 53 of the OWRA.

At the time of preparation of this report, a formal response from the MOE had not been received by Golder Associates. When a formal response to Golder Associates' request for information is received, it will be reviewed. If, in Golder Associates' opinion, the response details any issues of potential environmental concern with respect to the site, a copy will be forwarded to Monarch (with a brief discussion) so that it can be appended to this report.

### 4.2 Technical Standards and Safety Authority Correspondence

The TSSA was contacted (refer to copy of correspondence in Appendix B) to determine if any bulk fuel underground storage tanks (USTs) were registered on the site. In addition, inquiries were made to determine if there are records of fuel spills, accidents or incidents on or near the site (within approximately 200 m). The TSSA has maintained records since 1987 but it should be

noted that there is currently no requirement in Ontario to register private underground fuel oil storage tanks for heating purposes.

On September 14, 2004, Mr. Prem Lal of the TSSA indicated that the TSSA had no registrations for USTs for the site, currently or historically, nor are there any records of incidents, accidents or spills within 200 m of the site.

### **4.3 Government/Municipal Records**

#### **4.3.1 City of Ottawa Correspondence**

Golder Associates forwarded a correspondence (refer to copy of correspondence in Appendix B) to the City, that requested the following information:

- active orders under the *Environmental Protection Act* (EPA), the *Ontario Water Resources Act* (OWRA), and the *Pesticides Act* (PA);
- approvals;
- reports relating to environmental concerns;
- records of non-compliance or regulatory concerns;
- dumping infractions, spills or discharges to the environment;
- violations of sewer use or environmental by-laws;
- historic information related to landfill or dump sites on or in proximity to the property; and,
- any other environmental information.

At the time of preparation of this report, a response letter from the City had not been received by Golder Associates. When a formal response to Golder Associates' request for information is received, it will be reviewed. If, in Golder Associates' opinion, the response details any issues of potential environmental concern with respect to the site, a copy will be forwarded to Monarch (with a brief discussion) so that it can be appended to this report.

Prior to the 2001 amalgamation, the City of Ottawa did not have a consolidated database of environmental concerns for City properties and typically referred all inquiries to the 1988 Intera report entitled *Mapping and Assessment of Former Industrial Sites, City of Ottawa*. This report describes an inventory and assessment study of former industrial sites that were active in the former (prior to the 2001 amalgamation) City of Ottawa from 1850 to 1984 that likely produced or handled hazardous wastes and materials. The site is not within the boundary limits of the former City of Ottawa and as such, the 1988 Intera report is of no relevance.



#### **4.4 Ontario Ministry of Environment Document Review**

##### **MOE Database on PCB Storage Sites, 2000**

Based on a search (200 m radius from site) of the MOE database of PCB Storage Sites, the site is not a registered PCB storage site and no registered PCB storage sites are known to be located within approximately 200 m of the site.

##### **Waste Disposal Site Inventory, June 1991**

Based on a review of the waste disposal site inventory (200 m radius from site), the site is not registered as an active or closed waste disposal site and no waste disposal sites are known to be located within 200 m of the site.

##### **Inventory of Coal Gasification Plant Waste Sites in Ontario, April 1987**

A review of the inventory of coal gasification plant waste sites in Ontario (200 m radius from site) was carried out. The latter classification includes tar distillation plants, creosoting plants, roofing felt and tarred paper products manufacturers, by-product charcoal and coke oven plants of the iron and steel industry, industrial manufactured gas plants, and wood distillation plants.

It indicates that the site is not registered as a former coal gasification plant or as an industrial site producing and/or using coal tar or related tars. Furthermore, there are no known former municipal coal gasification plants or industrial sites producing and/or using coal tar and related tars located within 200 m of the subject site.

##### **MOE Database on Registered Waste Generators, 2001**

A review of the MOE database on registered waste generators (within 200 m of the site), indicated the site was not registered (using "road name" as the search criteria) and that no registered waste generators were listed within 200 m of the site.

## **5.0 SITE VISIT FINDINGS AND COMMENTS**

A site visit was carried out by a representative of Golder Associates' staff on September 2, 2004. Golder Associates was not accompanied on the site visit.

The size of the site prohibited a detailed "foot by foot" review; as such, specific areas of the site were targeted (based on review of historical documents and interview information) for assessment.

The visit was documented with a questionnaire/checklist, photographs and additional notes, where warranted. The site was examined for visual and olfactory indications of potential environmental concern. The site visit also included a cursory inspection of adjacent properties from the site and publicly accessible areas. The approximate limits of the site (i.e., property boundary) are noted on the Site Plan, Figure 2. Refer to the Site Characteristics table in Section 2.1 for a general description of the site.

### **5.1 Outside (Exterior) Areas**

Areas of the site adjacent to the golf course are noted to have fill material. The fill has been placed for landscaping/aesthetic purposes. According to the Site Representative(s) the fill material has been imported from off site sources (residential construction) and it is not expected that these sources are of environmental concern. No obvious stained areas, distressed vegetation areas or odours that would be indicative of hydrocarbons or chemicals were noted by Golder Associates at the time of the site visit.

Some rubble fill materials were noted in the area of the current construction site office (area of former farm buildings). It is expected that this fill material can be re-used on-site or removed and properly disposed of at the time of development of that area of the site. As previously noted, it is possible that the farm related buildings may have had wells and/or septic systems. If encountered at a future date (i.e. development) the well and/or septic system should be abandoned in accordance with applicable provincial regulations.

### **5.2 Building(s)**

No obvious areas of potential environmental concern (i.e. stains, sheens) were observed at the time of the reconnaissance of the site buildings.

#### **5.2.1 Suspect Asbestos-Containing Materials**

Asbestos-containing materials ("ACMs") are fibrous hydrated silicates, and can be found in building materials as either "friable" or "non-friable" asbestos products. Friable asbestos refers

to materials which can be readily crumbled using hand pressure, separating asbestos fibres from the binding materials with which they are associated. Non-friable material refers to asbestos, which is associated with a binding agent (such as tar or cement), preventing ready release of airborne fibres. Friable asbestos is commonly found in boiler and pipe insulation. Non-friable or bound asbestos is typically found in roofing tars, floor and ceiling tiles, and precast asbestos cement products commonly referred to as "transite".

ACMs in the workplace are defined as a Designated Substance under the Ontario Occupational Health and Safety Act ("OHSA"). Under the OHSA, Ontario Regulation 838/90 (*Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations*) governs the safe handling of ACMs in the workplace. This regulation requires owners to notify work persons of the presence of friable ACMs once their presence has been confirmed. Ontario Regulation 838/90 also requires the implementation of an Asbestos Management Plan until all ACMs have been removed from the building. ACMs can be managed through encapsulation or removal. The on-site management of ACMs is governed by the OHSA, and the removal and disposal of ACMs are governed by specific regulations in the provincial EPA. Neither the OHSA or EPA require licensing, approval or registration of a property in which ACMs are identified. The only method of confirming whether materials are asbestos-containing is to sample and analyze the suspect materials. ACMs were discontinued from use in Canada in the late 1970s/early 1980s, although non-friable asbestos may still be found in many more recent buildings. Section 3 of Ontario Regulation 833/90 prohibited the installation of new asbestos-containing thermal insulations and fireproofing in 1985.

Based on the year of building construction (1999 and 2002), it is Golder Associates' opinion that friable ACMs are not present at the site, given that the use of friable ACMs was discontinued in the late 1970s/early 1980s. Friable ACMs were not encountered during the site visit. However, it is possible that non-friable ACM may be present at the site (floor tiles, ceiling tiles). The presence of non-friable ACMs are not considered a significant issue unless demolition of the buildings or renovations are undertaken.

### **5.2.2 Suspect PCB-Containing Materials and Equipment**

In Canada, *The Federal Chlorobiphenyls Regulation, SOR/91-152* prohibits polychlorinated biphenyls ("PCBs") from being used in products, equipment, machinery, electrical transformers and capacitors which were manufactured or imported into the country after July 1, 1980. However, older equipment in use after this date may still contain PCBs if the equipment's fluid has not been changed or the equipment was not decontaminated when the fluid was changed to a non-PCB-containing fluid. In general, potential PCB-containing equipment could include fluorescent, mercury and sodium vapour light ballasts, oil-filled capacitors and oil-filled transformers.

Based on the year of building construction (1999 and 2002) Golder Associates, is of the opinion that the fluorescent light ballasts do not likely contain PCBs, since the use of PCB-containing materials in products, equipment, machinery, electrical transformers and capacitors was discontinued in the early 1980s.

### **5.2.3 Urea Formaldehyde Foam Insulation**

Urea formaldehyde foam insulation (“UFFI”) is low-density foam, which is formed by the polymerization of urea and formaldehyde liquids. The concerns with UFFI are human health and safety, and are associated with the release of gases as the UFFI cures, ages and degrades. UFFI was widely used as an insulating material until December 1980 when a ban on the use of UFFI was enacted under the *Hazardous Products Act* (HPA). UFFI was commonly injected through walls by drilling injection holes, typically in roof structures, ceilings and overhangs. Except for residential properties, the HPA does not require the licensing, approval or registration of a property where UFFI has been identified.

It should be noted that Phase I ESAs are non-intrusive and as such, wall and ceiling cavities were not inspected for the presence of UFFI. Based on the year of building construction (1999 and 2002), it is improbable that UFFI is present at the site, given that UFFI was banned in 1980. Furthermore, no evidence of UFFI (i.e., drill holes in walls and/or ceilings) was observed during the site visit.

### **5.2.4 Lead**

Lead in the workplace is regulated under OHSA. As outlined in the OHSA, persons in the workplace, are required to be notified of the presence of lead in the workplace. The exposure to lead in the workplace can be managed through various methods, including encapsulation and removal. Although lead-based paints were banned from use on exterior, or interior surfaces of buildings, furniture or household products in the late 1970s, various commercial paints are still known to contain lead in concentrations greater than the 0.5 percent weight to weight of lead (e.g., road paint). No sampling of any material (for the presence of lead) was carried out as part of this Phase I ESA.

Based on the year of building construction (1999 and 2002), lead-based paints and lead pipe are not likely present in the buildings.

### **5.2.5 Ozone-Depleting Substances**

An ozone-depleting substance (ODS) refers to any substance containing chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), halon or any other material capable of destroying ozone in the atmosphere. ODSs have been used in rigid polyurethane foam and insulation,

laminates, aerosols, air conditioners, fire extinguishers, cleaning solvents and the sterilization of medical equipment. Federal regulations introduced in 1995 required the elimination of production and import of CFCs by January 1, 1996 (subject to certain essential uses) and a freeze on the production and import of HCFC-22 by January 1, 1996. These regulations also require the complete elimination of HCFC-22 by the year 2020.

Since the regulations govern only the production and import of certain ODSs, they are allowed to be used in Canada, as long as there is a supply in place. Eventually the supply will run out, and the present equipment will either need to be refitted or replaced. It is understood from several air conditioning companies, that there is a sufficient supply of CFCs and HCFC-22 in Canada for at least the next several years. The federal *Hazardous Products Act* (HPA) does not require the licensing, approval or registration of a property in which ODSs have been identified. However, provincial regulations require the licensing of contractors who handle ODSs through equipment servicing.

It was observed that air conditioning units are present on-site, these units often contain R-22 refrigerant, a known ODS. Licensed contractors should be retained to carry out all servicing on potential ODS containing equipment.

### **5.2.6 Radon**

Radon gas is a product of the decay series that begins with uranium. Radon is produced directly from radium, which can be commonly found in geological units which contain black shale and/or granite. Radon gas can migrate through the ground and enter buildings through porous concrete or fractures. In open air or locations with high air circulation, radon is not considered a health problem, due to the dilution of the gas. In confined spaces (e.g., basements) it can concentrate and become a health hazard. Given the geological setting of the site, radon is not suspected to be an issue of potential environmental concern.

### **5.2.7 Mercury**

Visual observations inside the building indicate the possible presence of mercury in electrical equipment such as thermostats and switches. The mercury was contained in all cases and does not require removal. Care should be taken when replacing, storing and disposing of this equipment to minimize the risk of release of mercury into the environment.

### **5.2.8 Air Emissions**

It is outside the scope of this Phase I ESA to comment on whether or not the air emissions meet the requirements of applicable regulations since the Phase I ESA is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to

physical conditions present at the time of visit and do not include operational or management systems compliance.

Refer to Site Characteristics Table (Air Emissions) in Section 2.1 for a listings of air emissions at the site.

Based on the nature of the air emissions at the site it is unlikely that an MOE Certificate of Approval – Air (“C of A –Air”) would be required. However, a detailed technical evaluation of the air emission sources (including contaminant dispersion modelling) would be required to assess compliance with applicable regulations which, as previously noted, is outside the current scope of this Phase I ESA. This issue should be reviewed to ensure compliance with applicable regulations.

### **5.2.9 Mould**

No evidence of mould was observed in the site buildings during the site visit. No areas of possible sources of mould (i.e., water damage, poor housekeeping, poor ventilation) were identified or reported during the site visit. The majority of the site is unoccupied and as such, mould is not considered to be an issue of potential environmental concern. The Site Representative(s) indicated that there have been no complaints with respect to mould at the site.

### **5.2.10 Radioactive Materials**

The Atomic Energy Control Regulations (C.R.C., C. 365) outline the licensing requirements for radioactive isotopes and any substance capable of releasing atomic energy (“Prescribed Substance”). The Atomic Energy Control Regulations require licensing to import, export, use, transport or dispose of any Prescribed Substance. The Atomic Energy Control Regulations do not apply to naturally occurring radioactive Prescribed Substances which, have not been related with any activity associated with the development or application or use of the atomic energy.

The requirement for licensing is based on the Prescribed Substance and the scheduled quantity of a radioisotope, and is not based on the use of the equipment. Tritium exit signs and smoke detectors used and sold for residential use are not known to contain a Prescribed Substance and/or a scheduled quantity of a radioisotope which would require licensing. Medical equipment used for diagnostic and therapeutic purposes, radiography gauging and oil tracing used in industrial uses may require licensing, depending on the Prescribed Substance and the scheduled quantity of a radioisotope present in the equipment.

No radioactive substances, requiring licensing, are known to be present or to have been located on the site.

### **5.3 Solid Waste Disposal Practices and/or Areas of Storage/Waste**

It is outside the scope of this Phase I ESA to comment on whether or not the waste disposal practices meet the requirements of applicable regulations since the Phase I ESA is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of our visit and do not include operational or management systems compliance.

Refer to Site Characteristics Table (Waste Storage) in Section 2.1 for waste generated, waste storage and waste disposal practices at the site.

No obvious issues of potential environmental concern were noted with respect to the non-hazardous wastes removal processes at the site. The area of the dumpster did not have any obvious staining that would be indicative of an issue of potential environmental concern.

### **5.4 Water and Wastewater Discharges**

It is outside the scope of this Phase I ESA to comment on whether or not the wastewater discharges from the site meet the requirements of applicable regulations since the Phase I ESA is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of the site visit and do not include operational or management systems compliance. In general, it is the responsibility of individual facilities/companies to ensure that sewer discharges meet the applicable municipal requirements. If non-compliance situations arise, a "compliance program" may result which is basically an agreement between the municipality and the facility/company to correct the non-compliant sewer discharges.

The Site Representative(s) indicated that the construction site office is supplied with water via the municipal system and that the golf maintenance facility is on a private well. The well is approximately 61 m deep and is tested for potability bi-annually – currently potable (Note: Water supplied on the golf course, which is located off-site, is from municipal sources). Water use at the site included personal hygiene (bathrooms, washing) and general building cleaning. No obvious issues of potential environmental concern are noted with regard to water supply at the site.

The Site Representative(s) indicated that the construction site office is serviced with a septic bed/tanks and the golf maintenance facility is serviced with holding tanks. The septic systems are pumped 3-4 times per annum by a contracted firm (currently Arrow Mobile). No obvious issues of potential environmental concern are noted with regard to handling/disposal of septic waste at the site.

Golder Associates noted that surface water on the site would generally infiltrate into the underlying subsoils and/or sheet flow (peak rainfall periods) to on-site ditches and low-lying areas (Note: The adjacent golf course has a number of ponds). The general near surface inferred groundwater flow is northeasterly towards the Jock and Rideau Rivers. No obvious issues of potential environmental concern (stains, sheens) are noted with regard to stormwater at the site.

## 5.5 Odour, Noise and Vibration

No major sources of odour were noted at the site during the site visit. Noise from adjacent roadways and construction activity was noted at the time of the site visit. Vibration issues could also be associated with the roadway.

## 5.6 Electromagnetic Frequencies

Electromagnetic frequencies are generally associated with high frequency power lines. No high voltage power lines were noted within 200 m of the site.

## 5.7 Storage Tanks

It is outside the scope of this Phase I ESA to comment on whether or not the on-site storage tanks meet the requirements of applicable regulations since the Phase I ESA is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of visit and do not include operational or management systems compliance.

### 5.7.1 Above Ground Storage Tanks

The following ASTs were observed during the site visit.

ABOVE GROUND STORAGE TANKS						
Tank Location	Purpose	Tank Type	Size (Litres)	Contents	Installation Date	Type of Protection
Golf Maintenance Facility (Service Bay)	Engine Oil	Steel	450	New Oil	2002	None (on concrete floor slab)
Golf Maintenance Facility (Service Bay)	Engine Oil	Steel	450	New Oil	2002	None (on concrete floor slab)
Golf Maintenance Facility (Rear [east] of building)	Fueling	Steel	2270	Diesel	2002	None (on concrete slab in fenced compound)
Golf Maintenance Facility (Rear [east] of building)	Fueling	Steel	2270	Gasoline	2002	None (on concrete slab in fenced compound)
Golf Maintenance Facility (Rear [east] of building)	Engine Oil	Steel	2270	Waste Oil	2002	None (on gravel)



With the exception of the area of the waste oil AST no obvious issues of potential environmental concern (stains, sheens) were noted. The underside of the waste oil AST was observed to have some small stains, likely indicative of spillage when pouring waste oil into the AST. At the current time the stains were relatively small and isolated and do not present an issue of potential environmental concern, however the handling practice of the waste oil should be reviewed. In addition, it would be prudent environmental management practice to have secondary containment (i.e. spill trays) for the ASTs.

### **5.7.2 Underground Storage Tanks**

Based on information obtained during the Phase I ESA, no USTs are suspected to be present on the site. No evidence (filler/vent pipes extending through walls or slabs/ground surface, no staining or any obvious odours) was observed during the site visit to indicate the current presence or former presence of USTs.

### **5.8 Storage, Handling and Disposal of Hazardous Materials**

It is outside the scope of this Phase I ESA to comment on whether or not the storage, handling and disposal of hazardous materials meet the requirements of applicable regulations since the Phase I ESA is not a compliance audit or review. Any environmental compliance issues noted are strictly mentioned as they relate to physical conditions present at the time of visit and do not include operational or management systems compliance.

The only area of the site that handling of hazardous material or chemicals is carried out is in the golf course maintenance facility. This area was noted to have the following:

- Pesticides/herbicides: Stored in a ventilated metal shed that was located within a locked fenced compound inside the golf maintenance facility. No obvious areas of spillage were observed within the area of the compound;
- Fertilizers: Stored in a half domed structure located outside the golf maintenance facility. No obvious areas of spillage were observed within the area of the dome;
- Various aerosols/liquid lubricants: Stored on shelves or on the floor slab within the service bay inside the golf maintenance facility. No obvious areas of spillage were observed on the floor slab.

Based on observations made during the site visit, it is not expected that the storage of these materials is an issue of potential environmental concern.

## 5.9 Adjacent Land Use

Based on visual observations during the site visit, adjacent property use is mainly for residential and farming purposes. A summary of adjacent land use is as follows:

### North

- Farm fields and/or former farm land.

### South

- Golf course lands (Stonebridge) and farm fields and/or former farm land.

### East

- Jockvale Road with residential dwellings fronting along this roadway;
- Golf course lands (Stonebridge);
- Residential subdivision and golf course lands (Stonebridge) on the east side of Jockvale Road; and
- Capital Burner Service ( 3650 Jockvale Road) – Note: The AST that was discussed in the April 2001 Phase I ESA was no longer observed to be present. This facility is located east of the site and based on the inferred groundwater flow direction (northeasterly) there is a low potential for impacts.

### West

- Greenbank Road with residential dwelling and farm dwellings fronting along this roadway.

No industrial complexes or retail fuel outlets are present in the immediate vicinity of the site. No issues of potential environmental concern were identified with the current adjacent land uses.

## 6.0 ISSUES OF POTENTIAL ENVIRONMENTAL CONCERN

Based on the information obtained during the Phase I ESA, no issues of potential environmental concern were identified. However, the following items are noted:

Former buildings (likely farm related) were located on site in the area of the current construction site office. These buildings may have had wells and/or septic systems. If encountered at a future date (i.e. during development) the well and/or septic system should be abandoned in accordance with applicable provincial regulations. In addition, rubble fill may be encountered in the area of the former buildings, it is anticipated that the fill material can be removed or re-used on site at the time of development.

Several above ground storage tank ("ASTs") are located in the area of the golf course maintenance facility. With the exception of the area of the waste oil AST, no obvious issues of potential environmental concern (stains, sheens) were noted. The underside of the waste oil AST was observed to have some small stains, likely indicative of spillage when pouring waste oil into the AST. At the current time the stains were relatively small and isolated and do not present an issue of potential environmental concern, however the handling practice of the waste oil should be reviewed. In addition, it would be prudent environmental management practice to have secondary containment (i.e. spill trays) for the ASTs.

Areas of the site adjacent to the golf course are noted to have fill material. The fill has been placed for landscaping/aesthetic purposes. According to the Site Representative(s) the fill material has been imported from off-site sources (residential construction) and it is not expected that these sources are of environmental concern. No obvious stained areas, distressed vegetation areas or odours that would be indicative of hydrocarbons or chemicals were noted in the filled areas by Golder Associates at the time of the site visit.

A repair outlet (Capital Burner Service) is situated on the west side of Jockvale Road (east boundary of the site). An AST was noted to be present on this property in an April 2001 Phase I ESA carried out by Golder Associates but is no longer present. The groundwater flow is expected to be in a northeasterly direction towards the Jock River and the Rideau River and as such, there is a low potential for impacts to the site from this off-site facility.

## **7.0 LIMITATIONS AND USE OF REPORT**

This report was prepared for the exclusive use of Monarch Construction Limited and is intended to provide Monarch Construction Limited with an assessment of the current environmental conditions at the at the property designated as the Monarch Lands - West of Jockvale Road, Ottawa (Nepean), Ontario. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third parties. Should additional parties require reliance on this report, written authorization from Golder Associates will be required. No assurance is made regarding the accuracy and completeness of these data. Golder Associates disclaims responsibility for consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected during the Phase I ESA of the property conducted by Golder Associates. It is based solely on the conditions on the site encountered at the time of the site visit on September 2, 2004, supplemented by a review of historical information and data obtained by Golder Associates as described in this report, and discussion with a representative of the owner/occupant, as reported herein. No soil, water, liquid, gas, mould, product or chemical sampling and analytical testing at or in the vicinity of the site was conducted as part of this assessment.

In evaluating the property, Golder Associates has relied in good faith on information provided by other individuals noted in this report. We assumed that the information provided is factual and accurate. We accept no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

If new information is discovered during future work, including but not limited to, site assessment, excavations, borings or other studies, Golder Associates should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required.

## **8.0 CLOSURE**

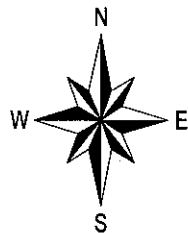
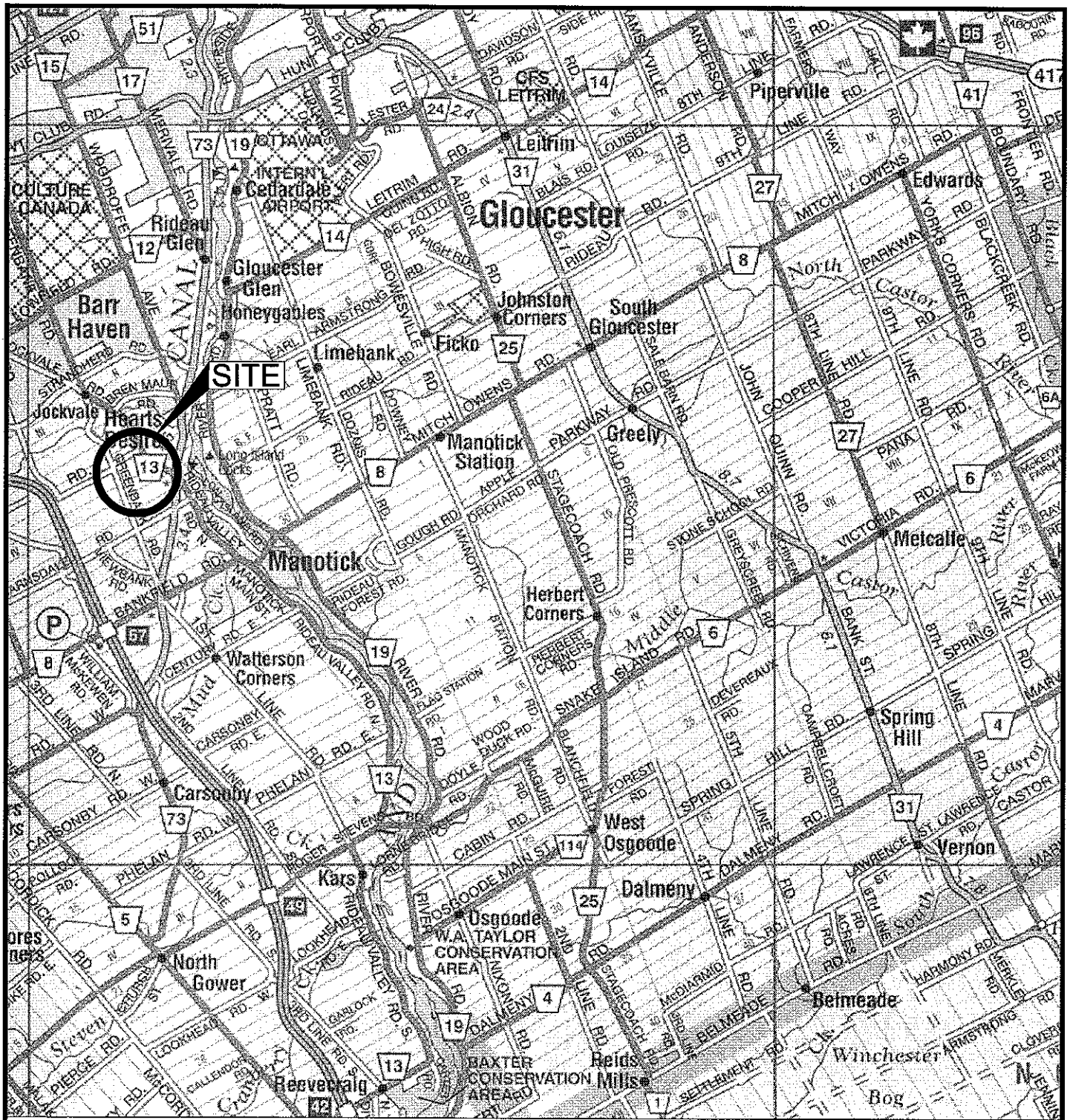
We trust this report provided the information required. However, should you have any questions, please do not hesitate to contact the undersigned.

**GOLDER ASSOCIATES LTD.**  
Environmental Division

R.K. Branchaud, CET, B.A.  
Senior Environmental Assessor

G.B. Murray, P. Eng.  
Associate

RKB:BGM:al  
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SPECIAL NOTE  
THIS DRAWING IS TO BE READ IN CONJUNCTION  
WITH ACCOMPANYING REPORT

Drawing file: 04-1120-439-01.dwg Oct 13, 2004 - 5:01pm

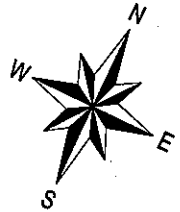
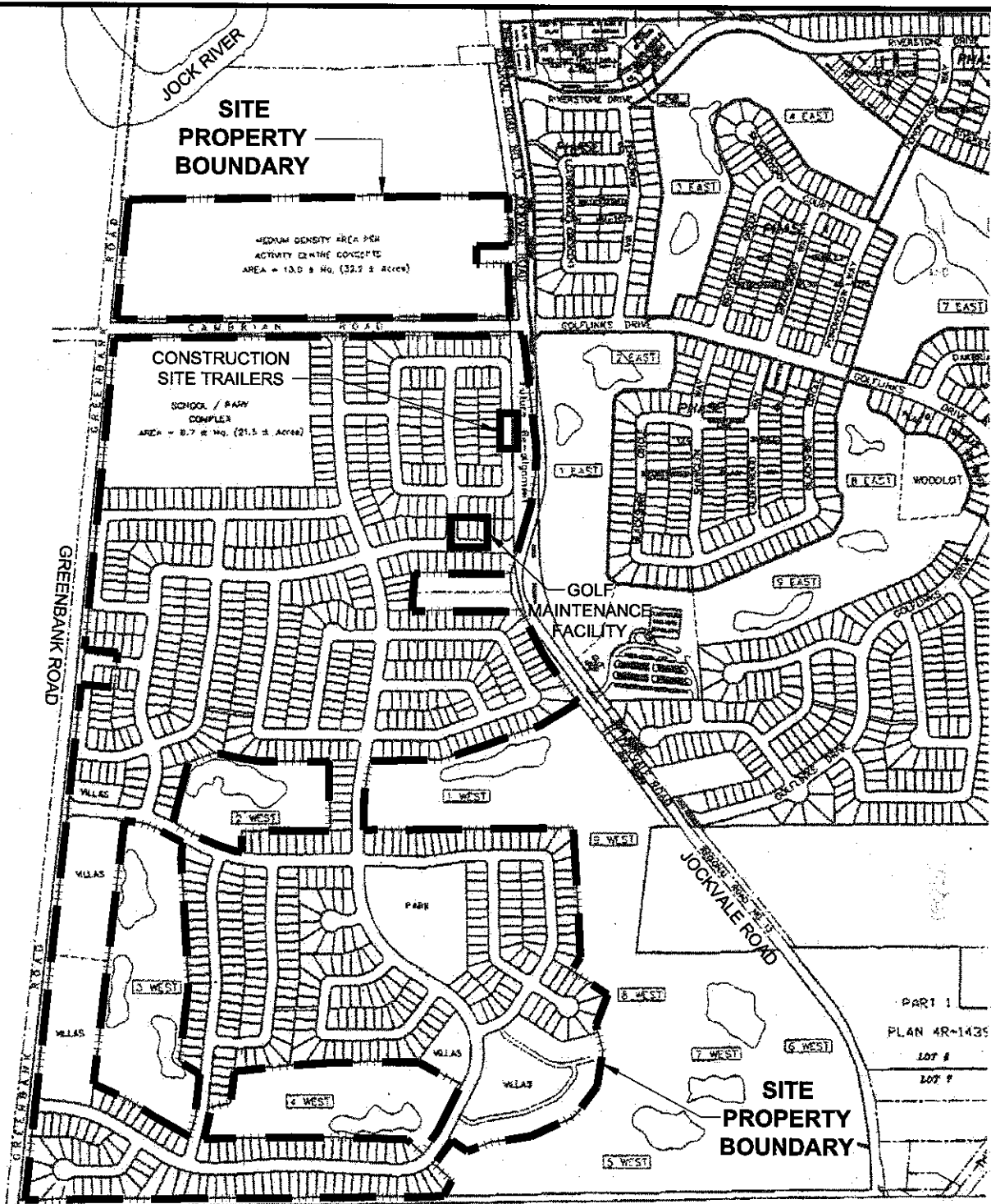
**Golder Associates**  
Ottawa, Ontario

FILE No.	041120439-01
PROJECT No.	04-1120-439
REV.	


SCALE	1:150,000
DATE	09/13/04
DESIGN	
CADD	J.M.
CHECK	R.K.B.
REVIEW	

TITLE	<b>KEY PLAN</b>	FIGURE <b>1</b>
<b>PHASE I ESA OTTAWA, ONTARIO</b>		

Drawing file: 04-1120-439-02.dwg Oct 13, 2004 - 5:00pm



SPECIAL NOTE  
THIS DRAWING IS TO BE READ IN CONJUNCTION  
WITH ACCOMPANYING REPORT

 <b>Golder Associates</b> Ottawa, Ontario	SCALE	N.T.S.	<b>SITE PLAN</b>
	DATE	09/13/04	
	DESIGN		
FILE No.	041120439-02	CADD	J.M.
PROJECT No.	04-1120-439	CHECK	R.K.B.
REV.		REVIEW	
PHASE I ESA OTTAWA, ONTARIO			FIGURE <b>2</b>

APPENDIX A

QUALIFICATIONS OF ENVIRONMENTAL ASSESSORS





## **Rick K. Branchaud**

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**Education**      Technologist (Electro-Mechanical Drafting), Algonquin College, Ottawa, 1976.  
Construction Management Course, Algonquin College, Ottawa, 1982.  
B.A. (Geography), Carleton University, Ottawa, 1987.  
Troxler Training Course, Ottawa, 1992.  
MapInfo Training Course, Nepean, 1996.  
Vertical Mapper Course, Nepean, 1999.  
40 Hour OSHA & Confined Space, 2001.  
Health and Safety Core Certification Level I, 1995 & II, 2002.

**Affiliations**    Canadian Standards Association (CSA) Certification, (Concrete & Materials Laboratory/ Field)  
C.E.T., Ontario Association of Certified Engineering Technicians and Technologists

**Experience**  
1998 to date

**Golder Associates Ltd.**

**Ottawa, Ontario**

Responsible for the Phase I Environmental Site Assessment (Phase I ESA) department in the Ottawa office. Duties include client development, group management and general project management. Environmental site assessment projects include large multi-site portfolios for commercial, manufacturing and warehousing facilities in Canada and Europe. Client base includes developers, property managers, engineering consultants, legal firms, financial institutions and all levels of government. Responsible for the Geographic Information Systems (GIS) department in the Ottawa office. Duties include staffing, budgeting and direction on GIS software packages. Oversee both in-house as well as project related output for a client base that includes engineering consultants and government agencies. Responsible for Health & Safety (H&S) training requirements to Golder staff. Course material includes WHIMIS, TDG, Fall Protection, general H&S awareness. Developed Ottawa office H&S Manual and carried out H&S audits for Golder offices in Ontario and Quebec.

1987-1998

**Golder Associates Ltd.**

**Ottawa, Ontario**

Responsible for Ottawa office technical staff co-ordination on construction inspection and testing projects in eastern Ontario and western Quebec. Administrative responsibilities include staffing, client liaison and development and office administration. Project involvement includes preparation of proposals, budgets, project management, summary letter/report preparation for municipal, residential, commercial and industrial construction projects. Responsible for development and implementation of a Geographic Information Systems (GIS) in the Ottawa office. Project involvement includes GIS applications for landfill monitoring, earth borrow pit development and maintenance of the in-house borehole database.

1976-1987

**Golder Associates Ltd.**

**Ottawa, Ontario**

Responsible for site investigations (layout, surveying, overburden sampling, bedrock coring, pressure packer testing, permeability testing, piezometer installation). Project involvement includes contaminant sampling: harbour basin, Port Hope, Ontario; subsurface investigation: industrial complex, Lachute, Quebec; landfill site investigation: Lanark, Ontario; hydrogeological study: chemical plant, Maitland, Ontario. Construction inspection and testing includes subgrade/footing inspections, compaction/materials testing, piling supervision, thermocouple installation/monitoring and Benkelman beam deflection surveys. Project involvement includes geotechnical quality control on 14,000 sq/m transit facility, Nepean, Ontario; materials testing for heat distribution system at the Ottawa Airport; Benkelman Beam survey on Highway 430, Gros Morne National Park, Newfoundland.



## **Gordon B. Murray**

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**Education** M.A.Sc., Civil Engineering, University of Waterloo, Waterloo, Ontario, 1994.  
B.A.Sc., Civil Engineering, University of Waterloo, Waterloo, Ontario, 1992.

**Affiliations** Registered Professional Engineer, Ontario.  
Member of Ottawa Geotechnical Group.

### **Experience**

- 2001 to present **Golder Associates Ltd.** **Ottawa, Ontario**  
*Office Manager, Associate (2002)*  
Responsible for the technical, financial, administrative and human resources management in the Ottawa office. Specialist in hydrogeological and environmental site investigations. Provides direction for ongoing subsurface investigations and monitoring programs at sites with impact to soil and groundwater.
- 1999 - 2001 **Golder Associates Ltd.** **Ottawa, Ontario**  
*Project Engineer*  
Project Engineer responsible for the management, execution and implementation of hydrogeological and environmental field investigation and sampling programs. Successfully worked with three Ottawa area golf courses to complete hydrogeologic field investigations in support of applications to the Ontario Ministry of the Environment for Permits to Take Water for irrigation purposes. Completed Phase II Environmental Site Assessments at 10 hydroelectric generation/transmission facilities in Eastern Ontario.
- 1995 to 1999 **Golder Associates Ltd.** **Guelph, Ontario (1997 to 1999)**  
*Project Engineer* **Mississauga, Ontario (1995 to 1996)**  
Technical specialist in 3-D groundwater flow and solute transport modelling and probabilistic techniques, with application in environmental risk assessments. Representative projects include technical support for environmental site assessments at petroleum hydrocarbon impacted sites, risk assessment calculations for chlorinated organic impacted properties, and hydrogeologic site characterization studies in the environmental, mining, and resource sectors. Assessment of groundwater resources for irrigation of commercial projects, and evaluation of potential interference effects.
- 1994 to 1995 **Jacques Whitford Environment Limited** **Markham, Ontario**  
*Environmental Division*  
Supervised hydrogeological and environmental site investigations including overburden drilling and monitoring well installations to characterize subsurface soil and groundwater conditions at various petroleum hydrocarbon impacted sites throughout Ontario. Conducted Phase I Environmental Site Assessments of industrial, commercial and institutional properties throughout Ontario. Supervised geotechnical drilling investigations at various proposed commercial properties throughout Ontario.

APPENDIX B  
AGENCY CORRESPONDENCE

# FACSIMILE TRANSMISSION



## Golder Associates Ltd.

1796 Courtwood Crescent  
Ottawa, Ontario K2C 2B5

Telephone: 613-224-5864

Fax Access: 613-224-9928

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**DATE:** September 13, 2004                      **JOB NO:** 04-1120-439  
**TO:** Ministry of the Environment              **FAX NO:** 521-5437  
**TOTAL PAGES:** 2  
**COPY:**    **cc: FAX NO:**  
**FROM:** Richard Branchaud                      **EMAIL:** rbranchaud@golder.com  
**RE:**    **PHASE I ENVIRONMENTAL SITE ASSESSMENT**  
**JOCKVALE, CAMBRIAN & GREENBANK ROAD LANDS**  
**OTTAWA (NEPEAN), ONTARIO**

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We are in the process of preparing a Phase I Environmental Site Assessment for the property noted above. For your reference we have included a key plan showing the location of the site.

It is requested that the Ministry provide an Index Review Report with respect to the following:

- Active Orders under the Environmental Protection Act (EPA), the Ontario Water Resources Act (OWRA), and the Pesticides Act (PA)
- Approvals under Sections 9 and 39 of the EPA as well as Sections 52 and 53 of the OWRA

Your usual prompt attention to this matter is appreciated. Should you have any questions please contact our office.

RKB:

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Hard copy to follow by mail  Yes,  No



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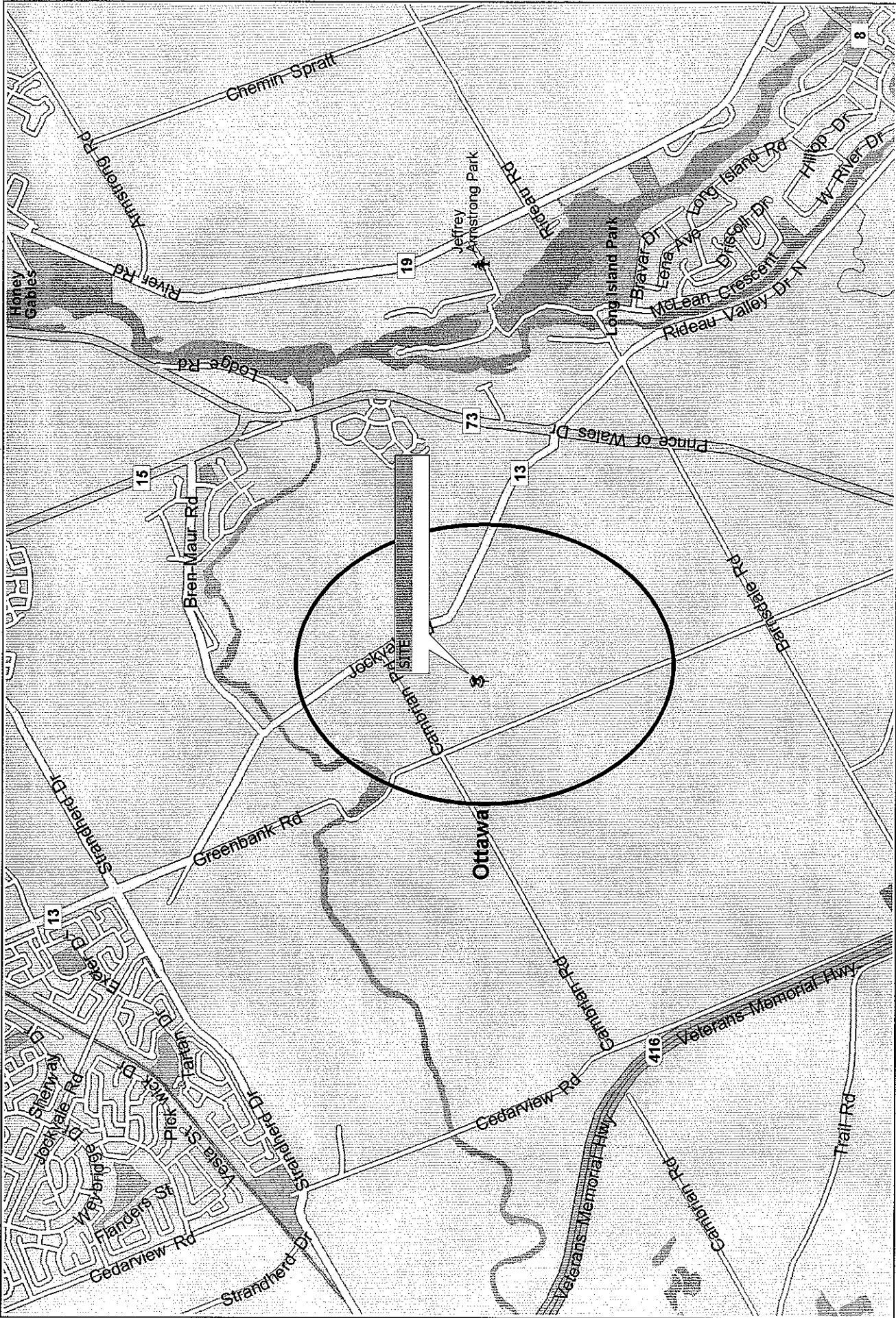
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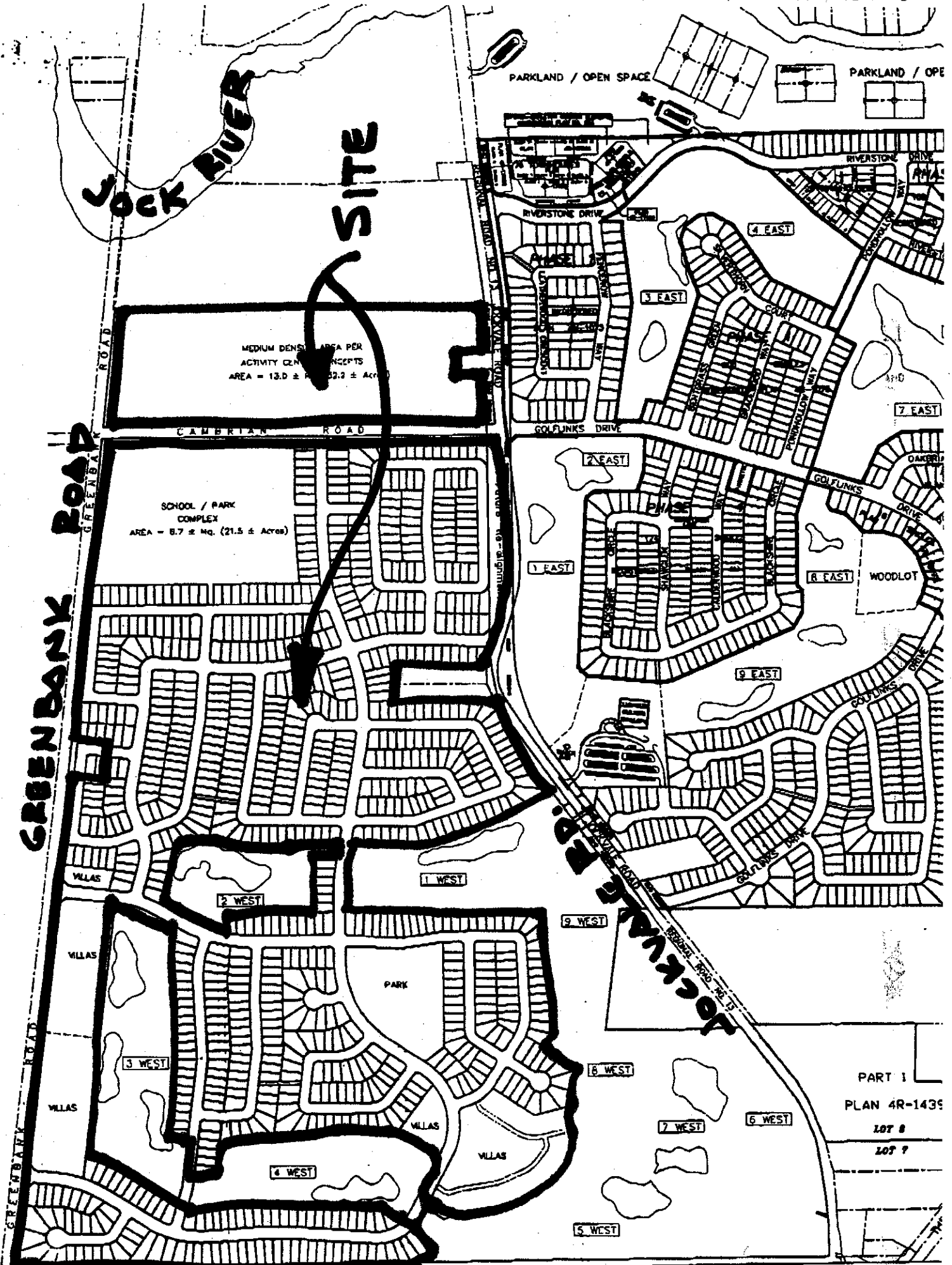
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OFFICES ACROSS NORTH AMERICA, SOUTH AMERICA, EUROPE, ASIA, AUSTRALASIA

# Monarch Site





**GREENBANK ROAD**

**YOCK RIVER**

**SITE**

MEDIUM DENSITY AREA PER ACTIVITY CONCEPTS  
AREA = 13.0 ± sq. (32.2 ± Acres)

SCHOOL / PARK COMPLEX  
AREA = 8.7 ± sq. (21.5 ± Acres)

PART 1  
PLAN 4R-1439

LOT 8  
LOT 9

# FACSIMILE TRANSMISSION



## Golder Associates Ltd.

1796 Courtwood Crescent  
Ottawa, Ontario K2C 2B5

Telephone: 613-224-5864  
Fax Access: 613-224-9928

**DATE:** September 13, 2004                      **JOB NO:** 04-1120-439  
**TO:** TSSA    **FAX NO:** 1-416-231-1626  
Prem Lal    **TOTAL PAGES:** 2  
**COPY:**    **cc: FAX NO:**  
**FROM:** Richard Branchaud                      **EMAIL:**

**RE: PHASE I ENVIRONMENTAL SITE ASSESSMENT  
JOCKVALE, CAMBRIAN & GREENBANK ROAD LANDS  
OTTAWA (NEPEAN), ONTARIO**

We are in the process of preparing a Phase I Environmental Site Assessment for the above noted property (refer to the attached key plan). Could you please review your records to determine if any bulk fuel underground storage tanks (USTs) were registered on or near the above mentioned site and if there are records of fuel spills, accidents or incidents on or near the site. Your search should include the following street(s):

Jockvale Road (3400-3800)  
Greenbank Road (3500-3900)  
Cambrian Road (3600-3900)

Your usual prompt attention to this matter is appreciated. Should you have any questions please contact our office.

RKB

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Monarch Lands.doc

Hard copy to follow by mail  Yes,  No

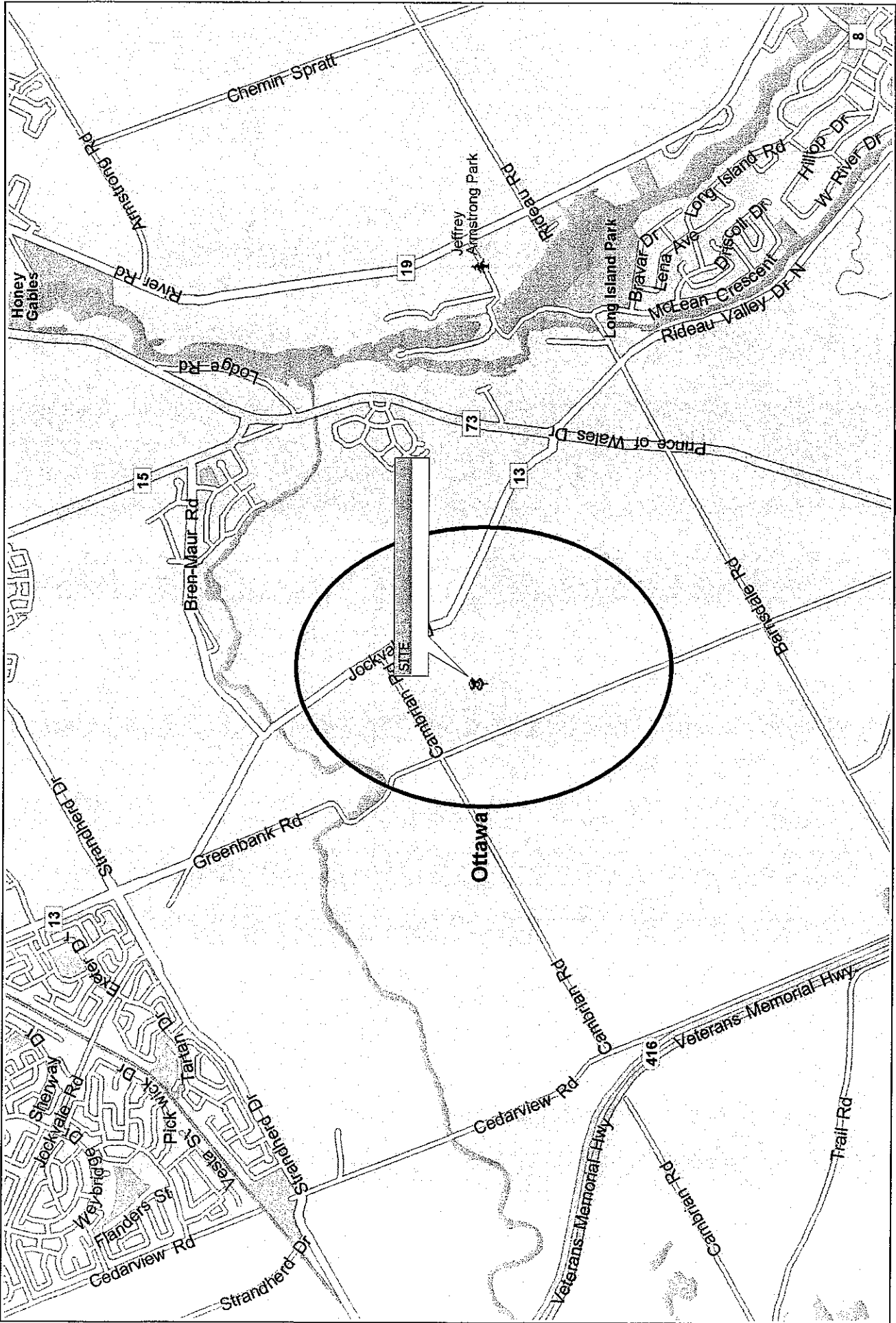


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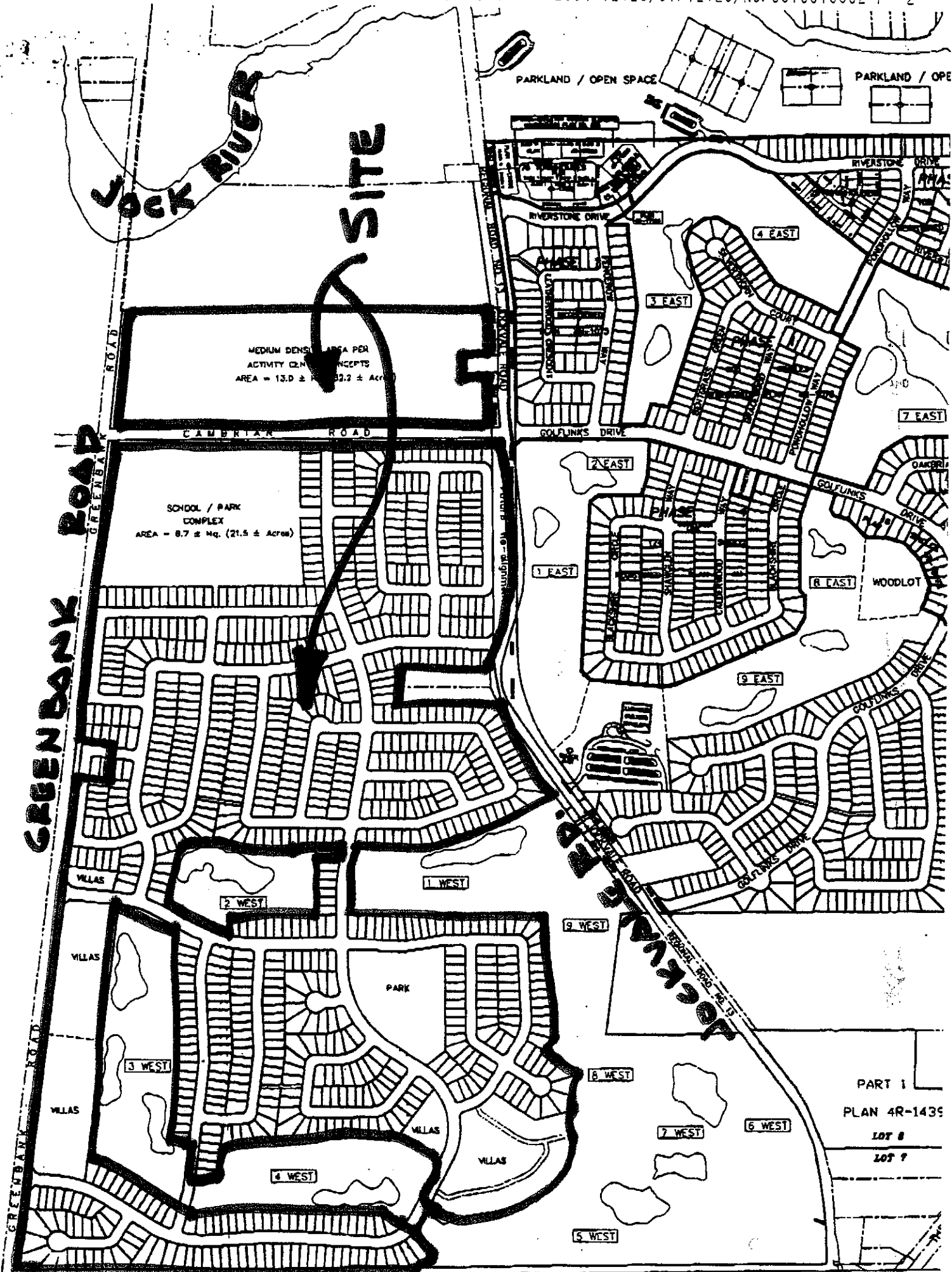
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OFFICES ACROSS NORTH AMERICA, SOUTH AMERICA, EUROPE, ASIA, AUSTRALASIA

# Monarch Site







PART 1  
 PLAN 4R-1435  
 LOT 8  
 LOT 9

# FACSIMILE TRANSMISSION



**Golder Associates Ltd.**

1796 Courtwood Crescent  
Ottawa, Ontario K2C 2B5

Telephone: 613-224-5864  
Fax Access: 613-224-9928

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**DATE:** September 13, 2004                      **JOB NO:**                      04-1120-439  
**TO:** City of Ottawa                                  **FAX NO:**                      560-6006  
   **Development Approvals Division**                      **TOTAL PAGES:**                      7  
**COPY:**    **cc: FAX NO:**  
**FROM:** Richard Branchaud                      **EMAIL:** rbranchaud@golder.com

**RE:                      PHASE I ENVIRONMENTAL SITE ASSESSMENT  
                                 JOCKVALE, CAMBRIAN & GREENBANK ROAD LANDS  
                                 OTTAWA (NEPEAN), ONTARIO**

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We are in the process of preparing a Phase I Environmental Site Assessment for the above noted property and are requesting that the City provide information from their files with respect to this property.

As per your requirements we have included the Request for Information – Phase I Environmental Site Assessment form, a disclaimer form, property owner authorization and key plan.

The information that we are requesting includes, but is not limited to, the following:

- Active Orders under the Environmental Protection Act (EPA), the Ontario Water Resources Act (OWRA), and the Pesticides Act (PA)
- Approvals
- Reports relating to environmental concerns
- Records of non-compliance or regulatory concerns
- Dumping infractions, spills or discharges to the environment
- Violations of sewer use or environmental by-laws
- Historic information related to landfill or dumpsites on or in proximity to the property
- Any other environmental information



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*Please advise immediately if any pages are not received*

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OFFICES ACROSS NORTH AMERICA, SOUTH AMERICA, EUROPE, ASIA, AUSTRALASIA

Your usual prompt attention to this matter is appreciated. Should you have any questions please contact our office.

**RKB:**

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Hard copy to follow by mail  Yes,  No

thereby. Titles in this Agreement are for convenience only.

b) This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns provided that it may not be assigned by either party without consent of the other. It is expressly intended and agreed that no third party beneficiaries are created by this Agreement, and that the rights and remedies provided herein shall inure only to the benefit of the parties to this Agreement.

c) No waiver of any right or remedy in respect of any occurrence on one occasion shall be deemed a waiver of such right or remedy in respect of such occurrence on any other occasion.

d) All representations and obligations (including without limitation the obligation of CLIENT to indemnify GOLDER in Article 10 and the Limitation of Liability in Article 11) shall survive indefinitely the termination of the Agreement.

e) Any provision, to the extent it is found to be, unlawful or unenforceable shall be stricken without affecting any other provision of the Agreement, so that the Agreement will be deemed to be a valid and binding agreement enforceable in accordance with its terms.

f) All questions concerning the validity and operation of this Agreement and the performance of the obligations imposed upon the parties hereunder shall be governed by the laws of Ontario unless the laws of another jurisdiction must apply for this Agreement to be enforceable.

Before signing this Agreement, the Client's authorized representative hereby represents that he has read and understands the paragraphs entitled Insurance and Indemnity and Limitation of Liability, which deal with the allocation of risk between the CLIENT and GOLDER.

IN WITNESS WHEREOF, the parties have caused this Agreement to be signed, as of the date and year first set forth below.

Golder Associates Ltd.

signature: \_\_\_\_\_

Name:

Title:

I have authority to bind the corporation

Date: \_\_\_\_\_

Monarch Construction Ltd.

(Name of Client)

signature: 

Name: BRUCE E. MACGILLIVRAY

Title: OTTAWA AREA LAND MANAGER

I have authority to bind the corporation

Date: 23/08/04

File No.: \_\_\_\_\_  
Deadline for Response: \_\_\_\_\_

Phase 1-Environmental Site Assessment

**Request for Information**

(Informal Request)\*

**1. REQUESTER INFORMATION**

- a) Name of Requester: 602012 DSSOWAT'S
- b) Address of Requester: 1796 WOODWOOD CRTS
- c) Telephone Number: 224 5864
- d) Site Address: Lot- \_\_\_\_\_ Concession: 7 REFER TO  
Street: \_\_\_\_\_ City/Town: PLANS.  
Postal Code: \_\_\_\_\_
- e) Legal Plan Attached: Yes ( ) No (  )
- f) Site Owner: MONORAN
- g) Adjacent Property Owners: NOBODY
- h) Date of Ownership: ± 1998 (MONORAN)  
Previous Owner(s): \_\_\_\_\_
- i) Type of Site: (  ) vacant land, ( ) residential, ( ) commercial, ( ) other(specify) \_\_\_\_\_
- j) Requester's Relationship to Site: CONSENTANT
- k) Date of Previous Request: N/A
- l) Date of Previous ESA: \_\_\_\_\_
- m) Information Requested: REFER TO WOODWOOD CRTS

**2. CONFIDENTIALITY**

- a) Consent Required: (  ) Owner ( ) Tenant ( ) Purchaser ( ) Legal\*
- b) Consent Obtained: (  ) Owner ( ) Tenant ( ) Purchaser ( ) Legal\*

\*(Consent letters must contain the information required, give authorization to requestor, and be dated and signed.)

\*\* (If formal MFIPPA request, please forward to Corporate Access and Privacy Coordinator, Clerk's Department)

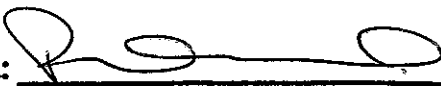
## DISCLAIMER

THE REGIONAL MUNICIPALITY OF OTTAWA-CARLETON ("the Region") is the owner of the HISTORICAL LAND USE INVENTORY ("HLUI"), a database of information on the type and location of land uses within the geographic area of Ottawa-Carleton, which had or have the potential to cause contamination in soil, groundwater or surface water.

The Region, in providing information from the HLUI, to GOVORN ASSOC ("the Requester") does so only under the following conditions and understanding:

1. This is a free service offered by the Region.
2. The information which is contained in the HLUI has been compiled from publicly available records and other sources of information. The HLUI may contain erroneous information given that such records and sources of information may be flawed. Changes in municipal addresses over time may have introduced error in such records and sources of information. The Region is not responsible for any errors or omissions in the HLUI and reserves the right to change and update the HLUI without further notice. The Region does not, however, make any commitment to update the HLUI. Accordingly, all information from the HLUI is provided "as is".
3. Regional staff will perform a search of the HLUI based on the information given by the Requester. Regional staff will make every effort to be accurate, however, the Region does not provide an assurance, guarantee, warranty, representation (express or implied), as to the availability, accuracy, completeness or currency of information which will be provided to the Requester. The HLUI in no way confirms the presence or absence of contamination or pollution of any kind. The information to be provided by the Region to the Requester is provided on the assumption that no person shall rely on it without undertaking independent verification of it for any purpose whatsoever and all liability to any such person is denied.
4. The Region, its employees, servants, agents, boards, officials or contractors take no responsibility for any actions, claims, losses, liability, judgments, demands, expenses, costs, damages or harm suffered by any person whatsoever including negligence in compiling or disseminating information in the HLUI.
5. Possession of information provided by the Region to the Requester does not carry the right of publication either in whole or in part. Copyright is reserved to the Region.
6. Any use of the information provided from the HLUI which a third party makes, or any reliance on or decisions to be based on it, are the responsibilities of such third parties. The Region, its employees, servants, agents, boards, officials or contractors accept no responsibility for any damages, if any, suffered by a third party as a result of decisions made as a result of an information search of the HLUI.
7. Any use of this service by the Requestor indicates an acknowledgement, acceptance and limits of this disclaimer

Signed: \_\_\_\_\_



Per: P.K. BRADWARD  
(Please print name)

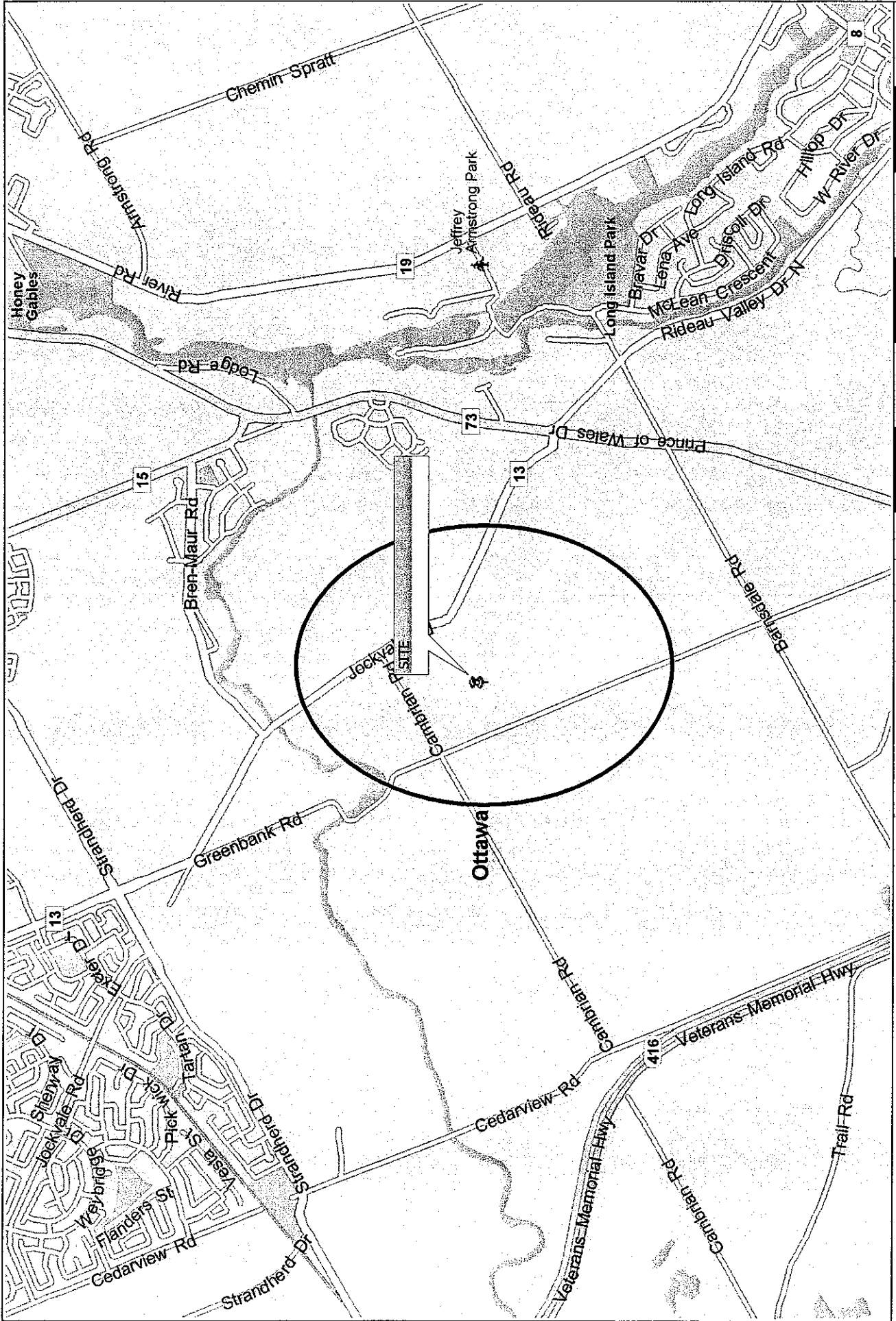
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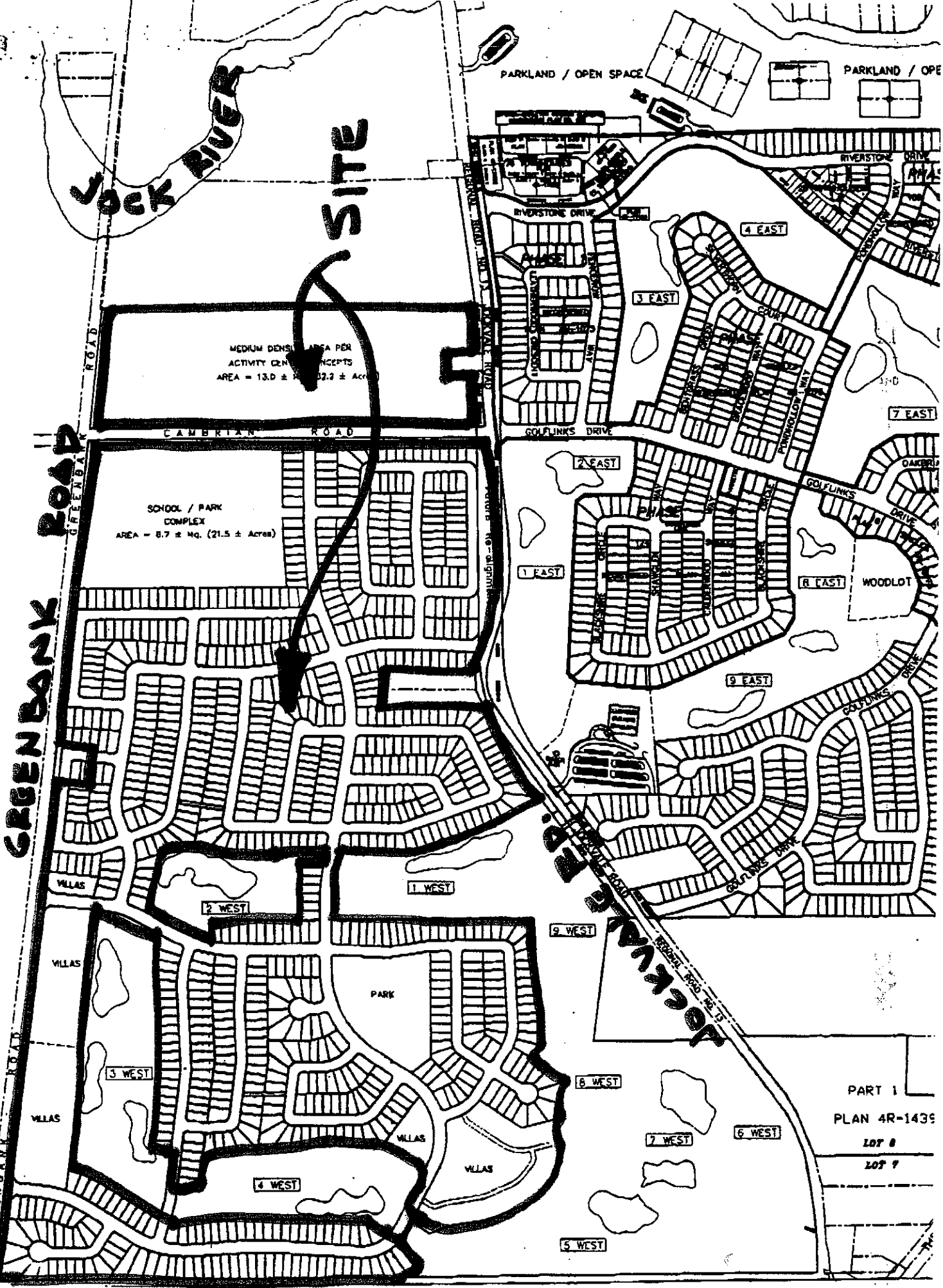
Company:

Dated: \_\_\_\_\_

12/20/04

# Monarch Site





PART 1  
 PLAN 4R-1439  
 LOT 8  
 LOT 9