

**APPENDIX H**  
**WATER WELL SURVEY PROGRAM**

**Water Well Survey Program  
Sol-Luce Kingston Solar PV  
Energy Project,  
Kingston, Ontario**

*Final Report  
September 7, 2012*



*Kingston Solar LP*

Project No. 12-6428

*Submitted by*

**Dillon Consulting  
Limited**





September 7, 2012

Kingston Solar LP  
c/o Samsung Renewable Energy Inc.  
55 Standish Court, 9<sup>th</sup> Floor  
Mississauga, Ontario  
L5R 4B2

Attention: Mr. Simon Kim  
Senior Manager, Solar Business Development

**Water Well Survey Program  
Sol-Luce Kingston Solar PV Energy Project**

Dear Mr. Kim:

Dillon Consulting Limited is pleased to provide Kingston Solar LP with the results of the water well survey program that was conducted between May and July, 2012. This report presents the results of the investigation and outlines recommended mitigation, monitoring and contingency plans for the construction and operation phases of the Sol-Luce Kingston Solar PV Energy Project as it pertains to the protection of well water quality.

Should you have any questions or comments, please contact the undersigned at your convenience.

Yours sincerely,

**DILLON CONSULTING LIMITED**

A handwritten signature in blue ink, appearing to read "Darin Burr".

Darin Burr, M.Sc., P.Geo.  
for Michael Enright, B.Sc.  
Project Manager

DTB:enh  
Encl.

**Our File: 12-6428**

130  
Dufferin Avenue  
London, Ontario  
Canada  
N6A 5R2  
Mail: Box 426  
London, Ontario  
Canada  
N6A 4W7  
Telephone  
(519) 438-6192  
Fax  
(519) 672-8209

**Dillon Consulting  
Limited**



## TABLE OF CONTENTS

	<b>Page</b>
1. INTRODUCTION .....	1
1.1 Objectives and Work Scope.....	1
1.2 Report Organization.....	2
1.3 Initial Disclaimer and Limiting Conditions .....	2
2. BACKGROUND INFORMATION .....	3
2.1 Project Description .....	3
2.2 Geological Setting.....	3
2.3 Hydrogeology and Groundwater Flow .....	4
2.4 Potable Water Use of Groundwater .....	6
3. STUDY METHODOLOGY .....	7
3.1 Consultation with Regulatory Officials .....	7
3.2 Public Communications .....	8
3.3 Well Water Sampling and Resident Survey.....	8
4. STUDY RESULTS .....	11
4.1 Residential Sampling .....	11
4.2 Homeowner Survey .....	11
4.3 Water Quality Testing Results .....	12
5. DISCUSSION.....	14
5.1 Vulnerability of Private Well Supply .....	14
5.2 Assessment of Water Quality Impacts from proposed Project Activities .....	14
5.2.1 Design and Operation Activities.....	15
5.2.2 Construction Activities .....	18
6. PROPOSED MONITORING AND CONTINGENCY PROGRAM .....	20
7. SUMMARY AND CONCLUSIONS .....	22
8. LIMITATIONS.....	24
9. REFERENCES .....	25

**LIST OF FIGURES**

(located at back of text)

Figure 1	Project Location
Figure 2	Surficial Geology
Figure 3	Private Well Sampling Locations

**LIST OF TABLES**

(located at back of text)

Table 1	Sampling Program
Table 2	Water Quality Sampling Results

**LIST OF APPENDICES**

Appendix A	Background Information and Regulatory Correspondence
Appendix B	Communications Record
Appendix C	Well User Survey Form
Appendix D	Water Quality Results and Analytical Data QA/QC Evaluation
Appendix E	Laboratory Certificates of Analysis

## 1. INTRODUCTION

Dillon Consulting Limited (Dillon) was retained by Kingston Solar LP to conduct a private water well survey for the Sol-Luce Kingston Solar PV Energy Project (referred herein as the “Project”). The purpose of the survey was to obtain background information on the use of local aquifers as a potable water supply, and to assess groundwater quality conditions prior to site construction. This information will be used as input into a future monitoring and contingency program that would be enacted during construction and operation of the Project. Implementation of a groundwater monitoring and contingency program is a requirement of the Renewable Energy Approval (REA) process for sites that have been identified as “sensitive areas.” Recently completed source protection mapping conducted under the *Clean Water Act* has identified much of the lands within the proposed Project as having high groundwater vulnerability. High vulnerability areas are considered to be sensitive areas.

### 1.1 Objectives and Work Scope

The scope of work was detailed in our May 17, 2012 proposal and was based on discussions with Kingston Solar LP and the Eastern Regional office of the Ontario Ministry of the Environment (MOE). A summary of the work activities completed are as follows:

- review of available information on the area hydrogeology and an inventory of properties that may use the local aquifer as their water supply;
- consultation with the MOE and the local Conservation Authority on the study work scope;
- identification of select property owners for participation in the sampling program and notification of these residences;
- collection of untreated well water samples at participating addresses and submission of the samples to an analytical laboratory for testing; water samples were tested for general potability requirements including general chemistry, nutrients, select metals and bacteria;
- completion of a homeowner survey to provide knowledge on well construction, water quality/quantity characteristics and location of potential nearby activities (septic systems, fuel storage etc.) that may pose a groundwater quality threat to the groundwater supply;
- provision of the chemical testing results to homeowners via individual letters;
- reviewing the existing Draft Construction Plan Report and the Draft Design and Operations Report and providing recommendations for additional mitigative actions to reduce the risk of groundwater quality impacts during construction and operation of the proposed solar facility



- recommending a contingency program to respond to any future complaints regarding well water impacts during construction and operation; and,
- submission of a report to Kingston Solar LP documenting the results.

## **1.2 Report Organization**

This report is divided into several sections. **Section 1** introduces the study and outlines the work scope and objectives. **Section 2** summarizes background information on the Project and describes the groundwater resources and hydrogeology of the area. Study methodologies are presented in **Section 3**. The results of the private well testing and residential survey are presented in **Section 4** and discussed in **Section 5**. A proposed monitoring and contingency program is outlined in **Section 6**, followed by the study conclusions in **Section 7**.

## **1.3 Initial Disclaimer and Limiting Conditions**

This report was prepared by Dillon Consulting Limited for the sole benefit of Kingston Solar LP. The conclusions reflect Dillon's best judgment in light of the information available to Dillon at the time of the report's preparation. Any use which a third party makes of this report or any reliance on or decisions made based on it are the responsibilities of such said third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

## 2. BACKGROUND INFORMATION

### 2.1 Project Description

The proposed 100 MW (megawatt) Sol-Luce Kingston Solar PV Energy Project is located in eastern Ontario within the municipal boundaries of the City of Kingston and Loyalist Township (see **Figure 1** for Project location). The Project covers an area of approximately 261 ha, and is bounded by Quabbin Road to the north, Mud Lake Road/County Road 19 to the west, MacDonald Cartier Freeway (Highway 401) to the south and Highway 38 to the east. As outlined in the REA application (AMEC, 2012), the Project will consist of approximately 426,000 photovoltaic (PV) panels (arranged in approximately 1 MW blocks consisting of 4,260 PV panels each), inverter stations and transformers, a substation and an adjacent switchyard, a collector system of underground and/or overhead power lines and access roads. Temporary Project components that will be developed during the construction phase include laydown and storage areas, and access roadways. The proposed locations of the temporary and permanent infrastructure, as provided to Dillon by Kingston Solar LP, are reprinted in **Appendix A**.

### 2.2 Geological Setting

The proposed development is located in the physiographic area referred to as the Napanee Plain (Chapman and Putnam, 1984). This region is characterized by a flat to undulatory plain of exposed to shallow buried limestone bedrock. Provincial geological mapping (OGS, 1984) indicates that the limestone consists of the Paleozoic-age Gull River Formation which is dominant in the Kingston area (see **Figure 2**). This bedrock consists primarily of dolomitic limestone with minor interbedded shale. Underlying the Gull River Formation is arkosic sandstones, siltstone and shale of the Shadow Lake Formation; however, this unit is not present in all locations. Underlying the Paleozoic-aged rocks is Precambrian-aged igneous and metamorphic bedrock. Water well records indicate that the Gull River Formation is >30 m thick in the Project area, and therefore the majority of wells in the area are expected to be completed in this formation. Overburden geological mapping (OGS, 1984) indicates that the surficial geology consists primarily of thin (<1 m) to absent glacial till that overlies the limestone bedrock. In some low lying areas, there are sporadic occurrences of laminated clays and silts that may attain thickness of a few metres. As shown in **Figure 2**, most of the Project area is located in areas of shallow to absent soils, however, thicker clay and silt deposits may be found in solar infrastructure areas P6A, P2 and P12.

## 2.3 Hydrogeology and Groundwater Flow

### Aquifer Characteristics

The main aquifer in the Project area is the limestone bedrock. This aquifer is heavily fractured as a result of isostatic rebound, weathering and tectonic forces. In general, the amount of fractures will decrease with depth. Recharge to shallow water wells that tap the top portion of the bedrock aquifer will be from infiltrating precipitation that falls directly over the surrounding area. As a result of the unconfined nature of the fractured rock aquifer, recharge via an increase in aquifer storage is expected to be rapid following precipitation events. Recharge to deeper fractures that are intercepted by drilled wells will partially be from further upgradient locations. Shallow dug or blasted wells will likely recharge the quickest following precipitation events; however, they will also be more susceptible to water quantity problems during dry conditions. A water budget analysis (XCG, 2008) undertaken as part of the *Clean Water Act* (CWA) Assessment Report estimated an average groundwater recharge rate of 150 mm for the Millhaven Creek subwatershed, which encompasses the northern portions of the Project area. The estimated long-term average annual precipitation for the Millhaven subwatershed is 957 mm, of which 548 mm is lost to evapotranspiration (XCG, 2008).

### Groundwater Flow

Groundwater flow directions in the shallow fractured rock aquifer are expected to be strongly influenced by local topography. Groundwater will be directed from areas of local topographic highs towards low lying areas such as creeks, lakes and wetlands. Deeper in the aquifer, groundwater flow directions are expected to be similar to the regional trend of a dominant southward flow towards Lake Ontario. Overall, shallow groundwater flow is expected to be influenced by local topography, while drilled wells, which often tap deeper water bearing horizons, will be subject to more regional flow conditions which may differ from the local topography. It is noted that most of the wells identified in the Ontario Water Well Record are drilled, and there is little information on shallow dug wells, even though survey results presented herein suggest that almost half of the wells in the area are of the dug/blasted type.

Estimation of groundwater flow directions in the Project area was based on a review of topographical information (MNR, 2012) and analysis of the mapped potentiometric surface. The potentiometric surface elevations were calculated as part of the Groundwater Vulnerability Assessment Report

(Dillon, 2008) and are based on data from the Ontario Water Well Records, processed following MOE protocols that were used in the Provincial regional groundwater studies. Topographic contours are most useful in estimating groundwater flow conditions for shallow dug or blasted wells, as flow in these wells will generally be from areas of high ground elevation to low elevation. Potentiometric surface contours, which primarily reflect conditions in drilled wells in the area, can be used to estimate general deeper regional groundwater flow directions. Note that the identified flow directions are very approximate considering the inaccuracies inherent to the well record database and the data interpolation methods. The actual direction of groundwater flow will depend upon local conditions such as actual well location, depth of well, depth of water table and properties of the fractures that are intercepted in each well. **Figure 3** shows the topographic contours (yellow contours) and the footprint of the proposed development areas within the Project. Arrows showing the estimated direction of groundwater flow based on the calculated potentiometric surface (shown as black lines) are presented. Based on this interpretation, shallow groundwater flow in the western portion of the development (infrastructure areas P19 to P23) is expected to be towards Odessa Lake; however, some flow in the southern portions of this area, including infrastructure area P24 may be southwards. Estimated groundwater flow near infrastructure areas P7-P10, P11A is expected to be northwest towards Odessa Lake. Shallow groundwater flow in infrastructure areas P1, P2, P3, P4, P6A, P12 and P14 is expected to be predominantly southeast, south or southwest. However groundwater flow near shallow wells may be more influenced by local topographic conditions resulting in deviations from the estimated regional flow directions. In these situations, shallow flow directions are potentially towards local creeks. For example, shallow groundwater flow directions near the northern portion of infrastructure area P12 maybe northward towards a tributary in this area; even though the regional groundwater flow conditions suggest a southerly component of flow. Groundwater flow rates within the aquifer are expected to be highly variable and are therefore difficult to predict. Nevertheless, rates between centimetres to metres per day can be expected in fractured limestone aquifers.

### Aquifer Vulnerability

Recently completed hydrogeological mapping performed by the Cataraqui Region Conservation Authority (CRCA) indicates a large portion of the Cataraqui watershed, including the majority of the Project lands, has having a high aquifer vulnerability. The aquifer vulnerability map is reprinted in **Appendix A**, and was produced as part of technical studies required under the *Clean Water Act* (CWA). The CWA, and the associated regulations, define high vulnerability aquifers, as “an aquifer

on which external sources have or are likely to have a significant adverse effect, and include the land above the aquifer.” In practice, high vulnerability aquifers are sensitive to contamination from land uses that may pose a risk of release of chemicals to the ground surface. High vulnerability aquifers often lack thick deposits of lower permeability surface units (such as clay, silt etc.) that would inhibit transportation of the chemicals from the surface into the aquifer.

## **2.4 Potable Water Use of Groundwater**

The proposed Project is located in rural portions of the City of Kingston and Loyalist Township that are not municipally serviced. Potable water is supplied mainly by privately owned water wells that tap into the underlying limestone bedrock aquifer. Based on an air photo analysis of the number of developed properties within the study area, it is estimated that there are approximately 120 residences, farms or businesses within 500 m of the development that use groundwater as the potable water resource. The approximate locations of these wells, based on available information, are presented in **Figure 3**. Based on our review of the water well records and from survey information obtained from property owners during this investigation, both blasted and drilled wells exist.

No records of large water users that would require a permit to take water for groundwater use were identified in the immediate vicinity of the proposed Project. In addition, no municipal water supply wellhead protection areas are located within the Project area, based on our review of the most recent source protection mapping.

Based on the unconfined nature of the aquifer, lack of low permeability material overlying the bedrock, and the dominance of fractures near surface, it is expected that groundwater quality, and therefore raw water quality, will be sensitive to nearby land use activities that may potentially discharge chemicals, nutrients or animal/human waste to the subsurface.

### 3. STUDY METHODOLOGY

Investigative methodologies used during this study are presented in this section.

#### 3.1 Consultation with Regulatory Officials

Prior to implementing the field work program, study team members consulted with the MOE and the local conservation authority (Cataraqui Region Conservation Authority) for their input. A summary of the consultation efforts is presented below.

##### Ontario Ministry of the Environment

Dillon contacted the MOE Eastern Regional Office via email on May 1, 2012, to inquire about methodologies and protocols associated with assessing potential groundwater impacts from solar installations. Mr. Frank Crossley, Senior Hydrogeologist, responded to Dillon via email on May 2, 2012, and provided guidance on the required assessment program. Mr. Crossley stated that if the project was located within an area classified as “environmentally sensitive,” a groundwater monitoring program should be implemented prior to commencement of the construction phase of the project. The Ministry stated that the Eastern Region Groundwater Unit recommends that the monitoring program could consist of either: a) monitoring of a select number of existing private wells in the area, or b) proponent develop a monitoring network through the construction of new monitoring wells that collect water that is representative of the nearby wells. All collected water samples are to be analyzed by a qualified laboratory for general potability (“subdivision suite”). MOE provided a list of the recommended analysis parameters. Furthermore, MOE stated that following completion of the study, a report, including a contingency plan, be prepared by a qualified person, and submitted to the ministry. A copy of the correspondence between Dillon and the MOE is presented in **Appendix A**.

##### Cataraqui Region Conservation Authority

Mr. A. José De Armas of Kingston Solar LP, and Mr. Darin Burr of Dillon, met with Conservation Authority staff on June 1, 2012. Mr. Rob McRae, Source Protection Manager of the Cataraqui Source Protection Area and Mr. John C. Williamson, Source Protection Committee Chair, were in attendance. The purpose of the meeting was to present the scope and schedule of the proposed monitoring program, and to answer questions that the Conservation Authority may have regarding the project.

### **3.2 Public Communications**

Prior to collection of the well water samples, a public communication program was developed through consultation with Kingston Solar LP. The communication program consisted of the following elements:

- issuance of project notification letters to select residences that were identified for participation in the survey; letters were hand delivered to individual mailboxes on June 1, 2012;
- contacting of homeowners by telephone, and scheduling of water sampling; questions on the water sampling program were also answered as needed; and,
- Provision of water quality testing results to homeowners.

Information that was developed as part of the communication program is presented in **Appendix B**.

### **3.3 Well Water Sampling and Resident Survey**

Implementation of the well water sampling program was conducted between June 11, 2012 and July 4, 2012. The sampling program was designed to collect a representative number of water well samples over the geographic area that covers the majority of proposed major development sites. Selection of the residents to sample was based on several factors including proximity of the well to the proposed development area and position of the well relative to the estimated local groundwater flow direction. Preference was given to those wells located topographically downgradient and within 500 m of proposed major development areas. Where more than one well was present in a given direction (common condition along Mud Lake Road and Unity Road), the well closest to the proposed development was chosen for sampling. It should be noted that the ability to sample all selected properties relied on the willingness and/or availability of the homeowner to participate in the survey. Overall, 60 addresses were contacted and 32 addresses were available for sampling.

#### Sample Collection

Well water samples were collected following standard industry protocols and were analyzed for bacteria, alkalinity, ammonia, nitrate, nitrite, calcium, chloride, colour, conductivity, DOC, hardness, iron, magnesium, manganese, pH, potassium, sodium, sulphate, TDS and turbidity, as recommended by the MOE. Water samples were collected from each house participating in the groundwater study and placed immediately on ice. Where a treatment system was present (e.g., sediment filter, UV

light, or water softener etc.), an attempt was made to collect the sample prior to treatment. When collecting a sample from a water faucet, any garden hose, aerator, or spray-type attachment was removed and the surface of the tap cleaned with diluted bleach placed on a clean paper towel. The water was allowed to run for a minimum of five minutes prior to sample collection.

Samples were submitted to Exova laboratory in Kingston within 24 hours of collection, with the exception of samples collected on the weekend that were submitted directly to the Ottawa Exova laboratory within 48 hours of collection.

Overall, 32 properties were sampled, with one quality assurance/quality control duplicate sample obtained. Additionally, 19 locations were re-sampled to confirm detections of coliform and/or *Escherichia coli* (*E. coli*) bacteria. Four additional property owners were visited, but samples were not collected as the property did not use a well (e.g., cistern only). Eleven properties were contacted and declined to participate in the sampling program.

The majority of water samples were collected by Dillon staff between June 11 and June 16, 2012, with additional follow-up samples collected on July 4, 2012.

### Sampling Survey

At the time of sample collection, property owners were asked to complete an information survey which included a series of questions covering topics related to their well. Topics covered included water quality and quantity, frequency of water testing, water use, etc. The level of completion of each survey varied considerably, depending on the amount of time the residence owner had occupied the dwelling and depending on the residents' knowledge of their water system. The survey form is reprinted in **Appendix C**.

### Sampling Results Notification

The laboratory reports are presented in **Appendix E**. Bacteriological testing results including total coliform, and *E. Coli* were provided by the laboratory within two business days of sample collection. Where contact could be made, owners of wells where *E. Coli* was detected at concentrations significantly exceeding the Ontario Drinking Water Standards, were notified by telephone upon receipt of the laboratory report. At the completion of the study, the analytical reports were mailed to each sampling participant. A letter was provided with the reports identifying exceedances of the



health and non-health related Ontario Drinking Water Standards for the tested parameters. An example homeowner report is presented in **Appendix B**.

#### Quality Assurance/Quality Control

Quality Assurance and Quality Control was conducted for the field work, laboratory analysis and reporting elements of the project.

Quality assurance and quality control (QA/QC) procedures were implemented in the field and by the laboratory to demonstrate that the data generated was of a level of quality suitable for its intended purposes. Field QA/QC procedures included the collection of field duplicate samples, the use of new sampling equipment and/or appropriate equipment cleaning procedures, proper sample containment, preservation, handling and transportation and adherence to published standards for field methodologies. Laboratory QA/QC procedures included the use of an accredited laboratory, the use of detection limits appropriate for the required evaluation, the use of acceptable laboratory methods, analysis of laboratory blank and spike samples and laboratory reference standards. The results of the QA/QC program are presented in **Appendix D**. Overall, the results of the testing are deemed to be representative of site conditions.

## 4. STUDY RESULTS

### 4.1 Residential Sampling

A summary of the results of the well sampling are tabulated below. A detailed list of property owners that were contacted is presented in **Table 1** (following report text). The location of addresses contacted and those that were sampled are presented in **Figure 3**.

Category	# of Addresses
Initial Target for Properties to be Contacted/Wells sampled	50
Number of Addresses Contacted	60
Number of Samples Obtained	32
Addresses where well not present/not used	4
Addresses that could not be reached/unavailable	13
Addresses that declined sampling	11

The target number of sampled wells was 50; however, after contacting 60 properties, 32 addresses were available to be sampled. The remaining 28 properties that were contacted could not be sampled either because the owner declined sampling, was not home/unavailable for sampling, or did not use a well for their potable water supply. One property was not sampled as the well was recharged by rainwater that discharged into the well from the adjacent building's eaves trough. The water quality in this well was not considered representative of natural groundwater conditions.

### 4.2 Homeowner Survey

A summary of the survey results are tabulated below.

Category	Results*
Number of Residence who completed survey	32 (100%)
<b>Well Type</b>	
Number of dug wells	15 (50% of total)
Reported minimum, maximum and median depth of wells	3 m, 8 m, 6 m
Number of drilled wells	13 (44% of total)
Reported minimum, maximum and median depth of wells	8 m, 30 m, 18 m
Number of shore wells	2 (6% of total)
Wells of unknown construction	2
<b>Water Quantity Comments</b>	
Dug Wells - Reported number of wells where water quantity has been restricted from time to time, well has gone dry, or water has been trucked in	9 out of 15 (60% of reported total)

Category	Results*
Drilled Wells - Reported number of wells where water quantity has been restricted from time to time, well has gone dry, or water has been trucked in	3 out of 12 (25% of reported total)
<b>Water Quality Comments</b>	
Dug Wells	
- sulphur odour and/or taste or other smell	8 out of 12 (66%)
- occasional discolouration	1 out of 13 (8%)
- iron problems	0 out of 12 (0%)
- no problems reported	3 out of 12 (25%)
Drilled Wells	
- sulphur odour and/or taste	6 out of 12 (50%)
- occasional discolouration	0 out of 12 (0%)
- iron problems	4 out of 12 (33%)
- no problems reported	5 out of 12 (42%)

\* % based only on those surveys that reported for question

Overall, the survey indicates that there are a large number of dug or blasted wells in the area. This information is in contrast to the MOE water well information system which indicates that only drilled wells are located near the Project. This discrepancy suggests that many of the dug wells in the area of the Project have not been registered in the provincial database or have been incorrectly registered as being drilled. In general, the survey indicates that many of the dug and/or blasted wells appear susceptible to low water yield problems, especially during times of drought. Homeowners with drilled wells reported fewer water quantity problems. The median depth of the reported well depths was 6 m for dug wells and 18 m for drilled wells.

With respect to water quality in terms of taste and odour, a majority of the residences reported sulphur odour/taste problems. These problems appear to be most reported for dug wells (66%) than drilled wells (50%). No problems were reported for 25% of the dug wells and 42% of the drilled wells. Iron problems are most predominantly reported by owners of drilled wells (33%) than dug wells (0%).

It is also noted that some owners of shore wells reported discolouration from time to time, especially in the spring or late summer, which is expected considering shore wells will be heavily influenced by conditions within the surface water body that they draw from.

### 4.3 Water Quality Testing Results

Water quality testing results are presented in **Table 2** (following text). Graphical plots of the data are presented in **Appendix D**. A summary of the main observations from the water quality tests are presented below. Results are grouped by well type (dug/blasted and drilled).

SUMMARY OF WATER QUALITY TESTING					
Parameter	Units	Dug/Blasted* Wells		Drilled Wells	
		Range/(median)	exceeding ODWS	Range/(median)	exceeding ODWS
<b>Microbiology</b>					
<i>E. Coli</i>	cts/100m l	0 – 12 (0)	27%	0 – 342 (0)	33%
Total Coliform	cts/100m l	0 – 260 (18)	80%	0 – 1900 (14)	58%
<b>General Chemistry</b>					
Alkalinity	mg/L	99 – 373 (289)	0%	213 – 375 (266)	0%
Chloride	mg/L	1 – 330 (10)	6%	4 – 364 (85)	25%
Colour	TCU	2 – 13 (5)	50%	2 – 30 (6)	50%
Dissolved Organic Carbon	mg/L	1.3 – 5.2 (2.7)	6%	1.4 – 7.4 (2.7)	8%
Nitrite	mg/L	<0.1 – <0.1 (<0.1)	0%	<0.1 – <0.1 (<0.1)	0%
Nitrate	mg/L	0 – 1.45 (0)	0%	0.22 – 3.64 (0.45)	0%
Sulphate	mg/L	7 – 57 (26)	0%	9 – 68 (26)	0%
TDS	mg/L	211 – 1050 (422)	25%	318 – 1200 (490)	50%
Turbidity	mg/L	0.1 – 1.2 (0.4)	0%	0.2 – 8.4 (0.9)	17%
Hardness	mg/L	111 – 370 (320)	100%	204 – 546 (270)	100%
Sodium	mg/L	3 – 190 (15)	0%	3 – 219 (42)	17%
Iron	mg/L	0 – 0.26 (0.02)	6%	0.08 – 2.09 (0.4)	42%
Manganese	mg/L	0 – 0.15 (0)	19%	0.01 – 0.54 (0.01)	8%

\*Shore wells not included;

ODWS: Ontario Drinking Water Standards, June 2003, Revised, 2006

Key observations from this comparison are as follows:

- bacteria were detected in approximately 80% of the wells, with *E. Coli* detected in 33% of drilled wells and 27% of dug/blasted wells; both dug/blasted and drilled wells appear susceptible to bacteria contamination;
- nitrates were not detected in any of the wells above the ODWS;
- well water is hard, with the greatest hardness and total dissolved solids being in drilled wells; drilled wells are more prone to high iron content (63% of wells) and high manganese (17% of wells) compared with dug/blasted wells;
- sodium and chloride concentrations above ODWS are common, especially in drilled wells; the origin of the sodium and chloride is expected to be predominantly natural; however, contamination from water softeners (elevated sodium) or road salt is possible for some situations; and,
- raw water turbidity is generally within ODWS for most wells.

## **5. DISCUSSION**

### **5.1 Vulnerability of Private Well Supply**

Residences, businesses and farms in the vicinity of the Project use groundwater as their water supply. In most cases, the wells are also used for potable purposes, with some exceptions (such as irrigation use only). The utilized fractured limestone aquifer can be considered as unconfined, and in most areas, is not overlain by protective low permeability deposits. Furthermore, survey results indicate that many of the wells are of the dug/blasted type and will therefore be recharged by shallow groundwater. As a result of all these factors, the wells in the area of the Project are deemed to be susceptible to contamination from land use activities that would discharge chemicals to the ground surface or potentially increase suspended solids that would enter into the aquifer via shallow fractures. Susceptibility of the well to contamination will depend on individual well construction such as placement and condition of annular seals, and proximity of the well to the source of contamination.

As is evident by the water quality testing, many of the wells show evidence of contamination from human or animal source bacteria. Approximately 27% of the dug wells and 33% of the drilled wells contained *E. Coli*. The data supports the conclusion that the wells are in a vulnerable aquifer and well water is susceptible to contamination from surface activities. Common sources of bacterial contamination in rural areas include discharges from septic systems and the storage/application of agricultural source material (e.g., manure fertilizer, barnyards etc.).

### **5.2 Assessment of Water Quality Impacts from proposed Project Activities**

An assessment of potential water quality impacts from the proposed Project was performed for both the construction and operation/maintenance project aspects. A detailed assessment of potential negative effects, mitigation strategies, monitoring plan and contingency measures is presented in the Draft Design and Operations Report (AMEC, 2012a) and the Draft Construction Plan Report (AMEC, 2012b). A review of particular Project related activities that may pose a risk to groundwater and an assessment of the significance of these risks is discussed in the sections below.

## **5.2.1 Design and Operation Activities**

### PV Panel Foundation Supports

The design of the solar installation will involve the construction of numerous solar panel support foundations that will extend to, or be embedded into, the limestone bedrock. Conservation Authority staff stated that some members of the local Source Protection Committee are concerned that the placement of foundations may increase the vulnerability of the aquifer. The expressed concern is that the placement of closely set support columns or foundation support anchors (depending on construction design chosen) may increase fracturing of the shallow bedrock, and that these fractures may enhance contaminant migration into the subsurface.

Dillon assessed this concern through the review of geological information and the preliminary design plans of the foundation footings supplied by Kingston Solar LP (reprinted in **Appendix A**). Design plans indicate that three potential types of footing supports are being considered. Kingston Solar LP stated that the type of foundation used will be decided by the contractor. The three potential foundations types are as follows.

**Foundation Option 1:** Overburden will be excavated to bedrock and the rock surface leveled with lean concrete prior to the placement of a concrete pad foundation. The foundation will be backfilled with compacted fill.

**Foundation Option 2:** Concrete foundation will be fastened to the bedrock surface with four anchors at each corner of the foundation. The annular space around the anchors and the bedrock would be filled with lean concrete.

**Foundation Option 3:** A steel support post will be embedded into the bedrock. The post would penetrate the top 2 m of the bedrock, and will be cemented in place with grout.

Analysis of the potential impacts to groundwater quality was performed by considering whether the foundation design would increase the vulnerability of the aquifer compared with pre-existing conditions. For Option 1, the removal of the soil to the bedrock would cause a temporary increase in vulnerability, as the overburden provided a partial level of protection, albeit small because of its

limited thickness. The increase in aquifer vulnerability would be mitigated by backfilling of the excavation with compacted fill. Option 2 involves the installation of foundation anchors into the top portion of the bedrock surface, which could cause additional fracturing. Since the design requires that the cavities in the bedrock surface be filled with neat concrete, many of the shallow fractures would likely be sealed. Option 3 involves drilling/blasting a hole into the bedrock, which could cause additional fracturing along the edges of the hole. The risk of these fractures posing as potential groundwater flow pathways is deemed low as the hole is filled with grout that would seal the fractures. Regardless of the foundation option chosen, the risk of significantly increasing the vulnerability of the aquifer is deemed low when considering that the portion of the bedrock aquifer (top 2 m) that is affected during foundation construction is already heavily fractured. While it is reasonable to assume that the construction of the foundation may introduce new fractures, the incremental effect of these fractures on the vulnerability of the aquifer is considered small. Furthermore, considering that the operation of the solar installation will not involve the use of chemicals, pesticides or fuels, the potential incremental increase in fractures of the top portion of the bedrock surface will not result in an increased risk of groundwater contamination.

#### Sewage Disposal – Operations Building

The operations building will include a septic tank for holding of sanitary wastes from the washrooms and kitchen. Wastes will be removed by a licensed waste hauler. The septic tank will be equipped with a monitoring system and high level alarm. Considering that there is no potable water wells within 100 m of the proposed operations building, impacts to neighbouring water supplies from accidental leaks/spills from the holding tank is not anticipated.

#### Waste Generation

The Draft Design and Operations Report (AMEC, 2012a) states that no significant quantities of wastes will be generated. Waste materials would be primarily limited to materials generated during maintenance activities such as batteries and minor amounts of domestic waste. For these wastes, a site-specific waste collection and disposal management plan will be implemented during operation. No adverse impacts are expected to nearby potable water supplies based on waste generation activities at the facility.

### Storm Water Management

Increased sediment loading to the shallow portions of the aquifer as a result of erosion and runoff is identified as a potential concern if no mitigative actions are taken. As a result of the shallow fractured rock aquifer, potable wells in close proximity (< 100 m) to areas of erosion and sediment laden storm water may be susceptible to turbidity impact. A Draft Stormwater Management (SWM) Plan (AMEC, 2012c) has been developed for runoff control for the project. As part of this plan, mitigative actions have been identified to improve the quality of stormwater runoff by the inclusion of grassed filter strips. Areas under and within the panel array blocks will be seeded with grass that will also act as filter strips to improve run-off quality. The Draft Design and Operations Report also includes regular monitoring of the drainage system to ensure that erosion is not occurring and to mitigate detected issues in a timely manner. Once the mitigative actions identified in these reports are applied, together with implementation of additional mitigation actions recommended in **Section 5.2.2** of the current report, no significant potential for impacts to nearby water wells from storm water management are expected.

### Contamination from Chemical/Fuel Usage/Accidental Releases

With the exception of transformer oil fluids associated with the substation, bulk storage of fuels or chemicals will not occur. Mitigative strategies identified in the Draft Design and Operations report include: a) implementation of an Emergency Response and Communications Plan to minimize spill impact and b) provision of secondary containment for the substation transformer that will allow detection of leaks. Once the mitigative actions are applied, no significant impacts to nearby potable water wells are identified.

Cleaning of the PV modules may be occasionally required. Cleaning will use potable water from off-site sources and not use chemical cleaners. As a result, no potential effects to groundwater are identified.

Weed control will be limited to removal of noxious weeds by manual or other means. No widespread application of herbicides is planned. Overall, no impacts to nearby potable water wells from weed control are identified.



## **5.2.2 Construction Activities**

### Impacts from Accidental Fuel Spillage/Releases from Equipment

Mitigative actions to prevent adverse impacts from accidental fuel spillage from equipment will be identified in the Construction and Emergency Response and Communication Plan. This plan will be implemented by the contractor as part of the construction contract (AMEC, 2012b). This plan requires that spills are cleaned up in an effective and timely manner. Procedures to ensure appropriate storage/handling/transportation of wastes generated during construction will be detailed in a Hazardous and Non-Hazardous Waste Management Plan (AMEC, 2012b).

In addition to the identified mitigative measures, we recommend no equipment refueling, or vehicle/equipment/machinery storage to occur within 100 m of a potable water well

### Impacts from Stormwater Run-off

Potential water quality impacts could occur from increased erosion and sediment loading to temporary drainage areas during construction where bedrock is shallow, or excavation activities expose bedrock surfaces. Sediment containing runoff may potentially enter fractures, and could cause turbidity problems to wells in close proximity to the construction zone. The Draft Construction Plan Report (AMEC, 2012b) identifies an erosion and sediment control program that will be implemented to alleviate run-off related issues during construction.

In addition to the identified mitigative measures, we recommend that temporary stockpiles of soil not be placed within 100 m of water wells. Furthermore, run-off water should not be allowed to pond within 100 m of water well.

### Impacts to Bedrock from Foundation Construction

The construction method that will be used to anchor the foundations of the PV module panels will be selected by the contractor. Should controlled blasting be selected as a construction option, it is recommended that this method not be used within 100 m of a water well. Blasting near water wells could result in opening new fractures in the bedrock, and change groundwater flow patterns to the well, resulting in potential changes to well yield and/or quality.

### Waste Generation

As stated in the Draft Construction Plan Report, minor quantities of waste materials will be generated during construction such as packaging, pallets and scrap metal. Quantities of non-hazardous wastes and domestic waste will be removed to a licensed landfill. Minor amounts of hazardous waste that are generated by construction equipment maintenance will be stored in a secured area and removed by a licensed waste contractor. Washroom facilities for the construction crews will be portable and wastes removed by a licensed waste hauler. As a result of these mitigative actions, no potential negative effects to water wells from waste generation during construction is identified.

## **6. PROPOSED MONITORING AND CONTINGENCY PROGRAM**

The following monitoring and contingency program is identified during the construction and operation phases of the Project. This program is specific to addressing potential impacts associated with groundwater quality to the nearby water wells. Additional information on mitigative and monitoring activities is presented in the Draft Design and Operations Report (AMEC, 2012a) and the Draft Construction Plan Report (AMEC, 2012b).

### **6.1 Construction Phase**

The following monitoring program is recommended during construction:

- implementation of all monitoring and reporting activities identified in the Draft Construction Plan Report (AMEC, 2012b);
- ongoing monitoring of runoff conditions should be performed to ensure that runoff water not be allowed to pond within 100 m of nearby private wells;
- well water samples should be taken from all private wells located within 100 m of the active construction area. Samples should be analyzed for the same parameters as obtained during the baseline sampling program (conducted summer, 2012); analytical results should be provided to the homeowner; and,
- a qualified person should assess the sampling results to determine if there is evidence of unacceptable water quality degradation from construction activities; should such conditions exist, Kingston Solar LP should implement the protocols listed below under the Complaint Resolution and Contingency Plan.

### **6.2 Operations Phase**

The need and extent of monitoring during operation will be based on further consultation with the MOE. It is our understanding the MOE (Approvals) has recently required groundwater monitoring programs to be implemented as a condition of approval on some large-scale solar projects in Ontario (e.g., Grand Renewal Energy Park – solar component). For the Grand Renewal Energy Park (Solar), the required monitoring program includes the installation of monitoring wells upgradient and downgradient of the solar installations, and monitoring of water quality and water levels for two years following construction. Monitoring of residential wells in the immediate vicinity of the solar infrastructure is also required.

### **6.3 Complaint Resolution and Contingency Plan**

In the event that a complaint arises during the construction or operation of the Kingston Solar LP facility, it is recommended that the following contingency plan be implemented. This plan is based on input from the Eastern Regional MOE Office. We recommend that the contingency plan be adaptive in nature, as the course of action will depend upon the specific situation and severity of the identified issue. As a minimum, the contingency plan will include the following:

- a water sample will be obtained from the well water in question and submitted as “high priority” to a qualified laboratory; the data will be assessed by a qualified person, and if the problem is to be related to construction or operation activities at the site, then bottled water will be immediately provided to the impacted party;
- the MOE will be notified of any complaints and provided with an action plan to address these complaints; the action plan will be based on the nature and severity of the complaint; discussions will be held with MOE staff to confirm the appropriate frequency and duration of water quality testing for the affected well;
- implementation of the agreed upon monitoring program will occur and the results will be provided to the homeowner and the MOE; and,
- depending upon the outcome of the investigation, an alternate water supply will be provided to the affected property owner, as required.

## **7. SUMMARY AND CONCLUSIONS**

The following conclusions are made based on the results of this study.

- 1) The proposed Project site is located in an area of high aquifer vulnerability. The MOE requires that as part of the REA approval, solar projects located in sensitive groundwater environments undergo a groundwater assessment. This assessment includes sampling a select number of private wells in the proposed area of the Project and developing a contingency program to address any future groundwater complaints from adjacent water users.
- 2) To address the requirements of the MOE, a water well sampling program was implemented. Design of the program was based on consultation with the MOE Eastern Regional office. The Cataraqui Region Conservation Authority was also consulted regarding the program. The sampling program focused on taking raw water quality samples from a select number of private wells that are within 500 m of the proposed Project area. This information was collected to assess the baseline groundwater conditions prior to construction.
- 3) A total of 60 addresses were contacted by letter, telephone or in person to request participation in the sampling program. Of the 60 contacted addresses, samples were collected from 32 addresses. The remaining 28 properties contacted could not be sampled because they either declined sampling, were not home/unavailable for sampling, or did not use a well for their potable water supply. Collected water samples were tested for general chemistry, select metals and bacteria and the results compared to the Ontario Drinking Water Standards. A homeowner survey was also completed at the time of the water sampling.
- 4) Raw water quality testing results indicated that the groundwater conditions are susceptible to contamination from land use activities. Approximately 80% of the tested wells contained bacterial contamination in excess of the Ontario Drinking Water Standards. Elevated hardness, iron, chloride and sodium were also detected; however, many of these parameters are expected to have a natural origin.

- 5) An assessment of water quality risk from the construction and operation of the Project was performed. Assessed activities included construction of foundation supports, sewage disposal, waste generation, stormwater management and chemical/fuel management. Mitigative actions previously outlined in the Draft Design and Operations Report (AMEC, 2012a) and the Draft Construction Plan Report (AMEC, 2012b) were highlighted. Additional mitigation actions specific to the protection of water wells were identified. The most significant risk identified was the potential introduction of sediment into the shallow fractures of the bedrock during construction as a result of storm runoff. The risk relates to potential increasing of turbidity in wells that are close (within 100 m) of the construction zone. Identified mitigative actions to reduce this risk (beyond those identified in the Construction Report) include restricting temporary stockpiling of soils and not allowing runoff water to pond within 100 m of water wells.
  
- 6) Based on the results of this assessment, a monitoring and contingency program was developed. The monitoring program should follow those activities outlined in the Draft Construction Plan Report and Draft Design and Operations Report such as monitoring for erosion. The monitoring program should include water quality testing of water wells that are in close proximity (within 100 m) of the construction activities during the active construction phases. The need for long term operational monitoring will be based on future consultation with the MOE.
  
- 7) A contingency program is identified for any well water complaints that may arise during the construction and operation of the facility. This contingency program includes notification and reporting requirements, assessment of the complaint by a qualified engineer or geoscientist, and the requirement to provide a temporary source of potable water to the complainant should the solar facility be identified as the cause of the well water quality issue.

## **8. LIMITATIONS**

This report was prepared exclusively for the purposes, project and site location outlined in the report. The report is based on information provided to, or obtained by Dillon Consulting Limited (Dillon) as indicated in the report, and applies solely to site conditions existing at the time of the site investigation.

This report was prepared by Dillon for the sole benefit of Kingston Solar LP. The material in the report reflects Dillon's best judgment in light of the information available to Dillon at the time of preparation. Any use which a third party (i.e., a party other than our Client) makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

## **9. REFERENCES**

AMEC, 2012a, Kingston Solar LP Sol-Luce Kingston, Solar PV Energy Project, Draft Design and Operations Report, 2012.

AMEC, 2012b, Kingston Solar LP Sol-Luce Kingston, Solar PV Energy Project, Draft Construction Plan Report, 2012.

AMEC, 2012c, Kingston Solar LP Sol-Luce Kingston, Solar PV Energy Project, Draft Stormwater Management Plan, 2012.

Chapman and Putnam, The Physiography of Southern Ontario, 3<sup>rd</sup> Edition, Ministry of Natural Resources, 1984.

Cataraqui Source Protection Area, Assessment Report, High Vulnerability Area Mapping, 2010.

XCG, 2008, Cataraqui Source Protection Area, Tier 1 Water Budget and Water Quantity Stress Assessment, Draft Report, June, 2008.

Dillon, 2008, Groundwater Vulnerability Assessment Report, Cataraqui Source Protection Area, August 31, 2008.

Ministry of Environment, Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines, June, 2003, Revised June, 2006. PIBS 449e01.

Ontario Geological Survey. Map 2544, Bedrock Geology of Ontario, Southern Sheet, 1991.

Ontario Geological Survey. Quaternary Geology of the Sydenham Area, Ontario Geological Survey, Map 2587, Leyland J.G. and Russell, T.S., Scale 1:50,000.





---

---

## FIGURES

---

---





**KINGSTON SOLAR LP**  
**WATER WELL SAMPLING PROGRAM**

**PROJECT LOCATION**  
**FIGURE 1**

- HIGHWAYS
- ARTERIAL ROADS
- CANADA/USA BORDER
- LEASED PROPERTIES
- WOODED AREA
- WATERBODY
- MUNICIPAL BOUNDARIES



MAP DRAWING INFORMATION:  
 DATA PROVIDED BY MNR

MAP CREATED BY: PFM  
 MAP CHECKED BY: DB  
 MAP PROJECTION: NAD 1983 UTM Zone 18N

G:\GIS\126428 Kingston Solar\GIS Data\Design\Mxd  
 Name: Figure 1 - Key Plan.mxd

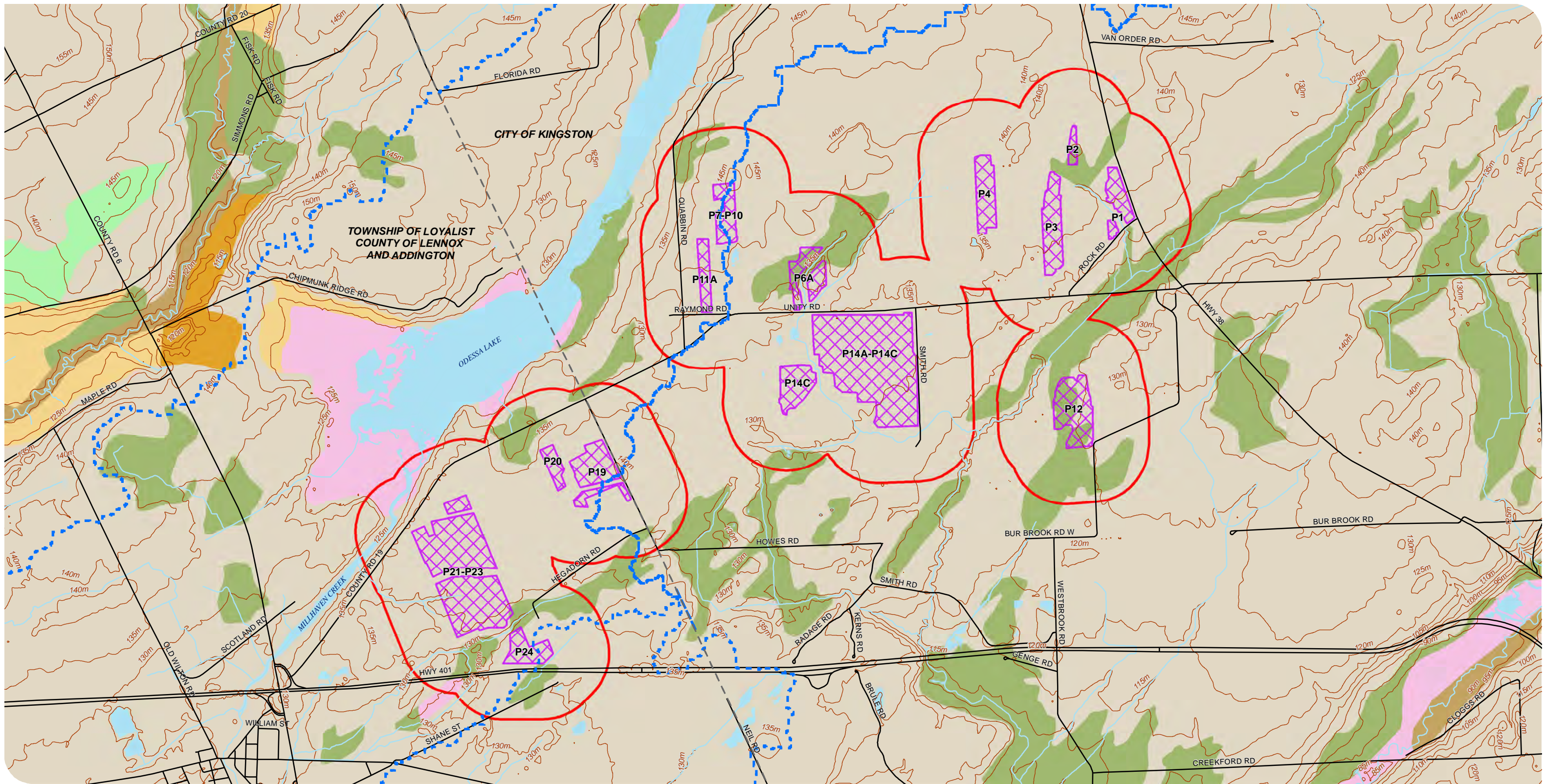


PROJECT: 12-6428  
 STATUS: FINAL  
 DATE: 07/24/12

U.S.A.







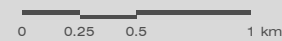
**KINGSTON SOLAR LP**  
WATER WELL SAMPLING PROGRAM

**SURFICIAL GEOLOGY**  
FIGURE 2

ROADS	SOLAR PANEL AREA	3: LIMESTONE BEDROCK	7B: GRAVELLY DEPOSITS	20: ORGANIC DEPOSITS
WATERCOURSE	SOLAR PANEL AREA 500M BUFFER	5B: SILTY TO SANDY TILL	8A: SILTY CLAY	WATERSHED BOUNDARY
TOPOGRAPHY (MASL)	WATERBODY	7A: SANDY DEPOSITS	19: MODERN ALLUVIAL DEPOSITS	MUNICIPAL BOUNDARY



MAP DRAWING INFORMATION:  
DATA PROVIDED BY MNR  
MAP CREATED BY: PFM  
MAP CHECKED BY: DB  
MAP PROJECTION: NAD 1983 UTM Zone 18N



SCALE 1:33,000



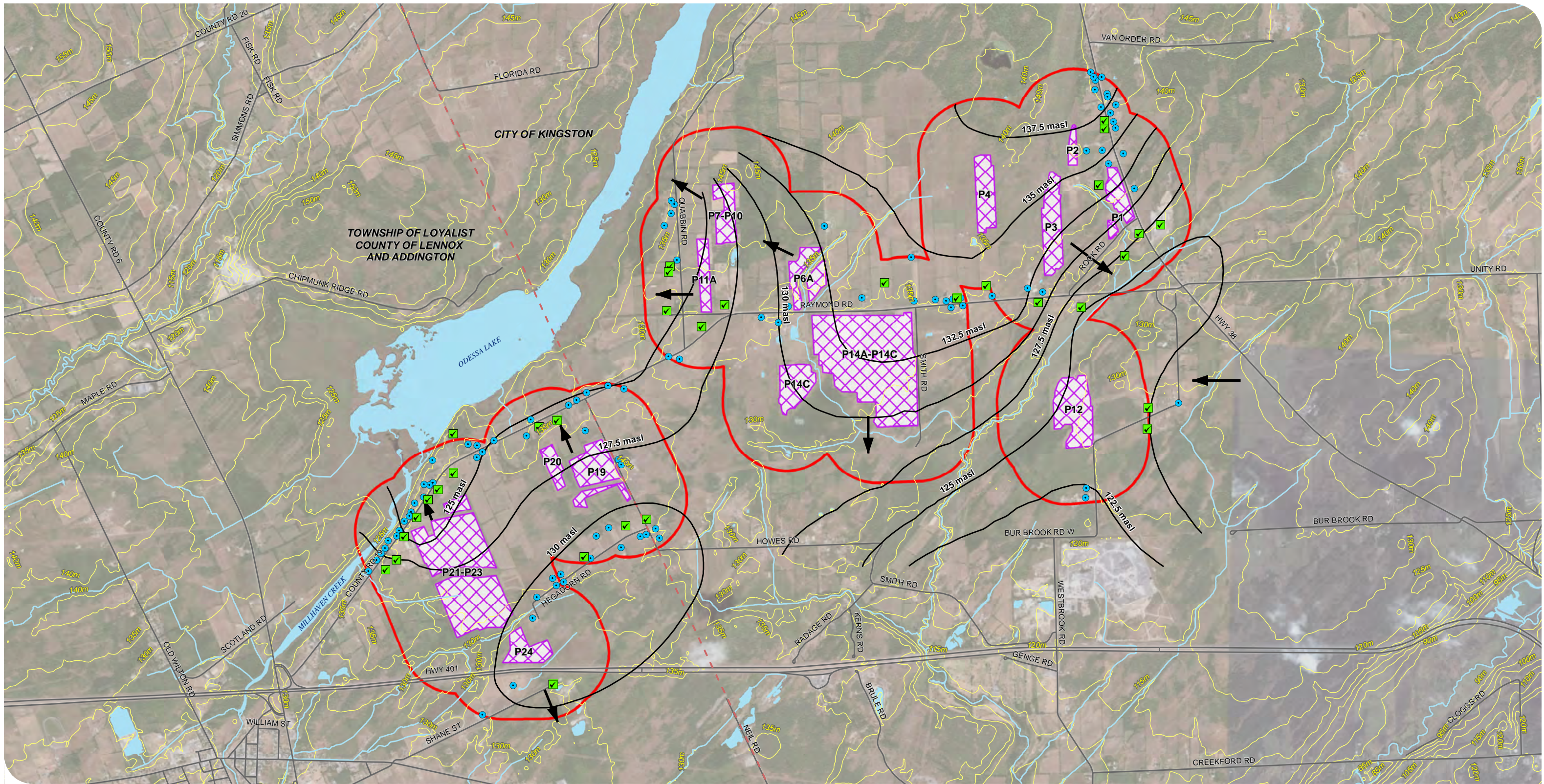
G:\GIS\126428 Kingston Solar\GIS Data\Design\Mxd  
Name: Figure 2 - Surficial Geology and Groundwater Flow.mxd

PROJECT: 12-6428 STATUS: FINAL DATE: 07/24/12









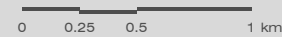
**KINGSTON SOLAR LP**  
WATER WELL SAMPLING PROGRAM

**PRIVATE WELL SAMPLING LOCATIONS**  
FIGURE 3

- |   |  |                         |                    |
|---|--|-------------------------|--------------------|
| WELL SAMPLED                                | ESTIMATED POTENTIOMETRIC SURFACE ELEVATION * | TOPOGRAPHY              | WATERBODY          |
| OTHER POTENTIAL WELL LOCATION (NOT SAMPLED) | ROADS  | SOLAR AREA              | MUNICIPAL BOUNDARY |
| ESTIMATED DEEP GROUNDWATER FLOW DIRECTION   | WATERCOURSE                                  | SOLAR PANEL 500M BUFFER |                    |



MAP DRAWING INFORMATION:  
DATA PROVIDED BY MNR  
  
MAP CREATED BY: PFM  
MAP CHECKED BY: DB  
MAP PROJECTION: NAD 1983 UTM Zone 18N  
  
\* FROM GROUNDWATER VULNERABILITY  
ASSESSMENT REPORT (DILLON, 2008)



SCALE 1:33,000



G:\GIS\126428 Kingston Solar\GIS Data\Design\Mxd\Revised Report\  
Name: Figure 3 - Private Well Sampling Locations (Public).mxd

PROJECT: 12-6428 STATUS: FINAL DATE: 09/13/12





---

## TABLES

---



**Table 1: Sampling Program  
Kingston Solar LP, Kingston, Ontario**

Site No.#	Current Status
1	Sampled
2	Sampled
3	Sampled
4	Sampled
7	Sampled
10	Sampled
13	Sampled
14	Sampled
17	Sampled
19	Sampled
23	Sampled
25	Sampled
26	Sampled
29	Sampled
30	Sampled
32	Sampled
33	Sampled
34	Sampled
35	Sampled
37	Sampled
38	Sampled
40	Sampled
41	Sampled
45	Sampled
46	Sampled
47	Sampled
48	Sampled
49	Sampled
50	Sampled
66	Sampled
67	Sampled
68	Sampled
22	Sampled
8	No Sample Taken - no well
31	No Sample Taken - no well
39	No Sample Taken - no well
42	No Sample Taken - no well
5	Attempted - Not available
11	Attempted - Not available
18	Attempted - Not available
20	Attempted - Not available
36	Attempted - Not available
44	Attempted - Not available
60	Attempted - Not available
61	Attempted - Not available
62	Attempted - Not available
63	Attempted - Not available
69	Attempted - Not available
70	Attempted - Not available
4	Declined
6	Declined
9	Declined
12	Declined
16	Declined
21	Declined
24	Declined
28	Declined
43	Declined
64	Declined
65	Declined



**Table 2: Well Water Quality Results  
Kingston Solar LP, Kingston, Ontario**

Site Address	Ontario Drinking Water Standard	Units	Method Detection Limit	1	2	3	7	10	13	14
Lab ID				964807	963966	964470	964122	964468	964651	964078
Sample Date				16-Jun-12	11-Jun-12	13-Jun-12	12-Jun-12	13-Jun-12	14-Jun-12	13-Jun-12
Solar Area				P7 & P11	P7 & P11	P7 & P11	P4	P1	P2	P3
Well position relative to panels				downgradient	downgradient	downgradient	cross gradient	dowgradient	upgradient	downgradient
Well Depth (m)				8	7.62	3.7	5.2	unknown	~30	unknown
Construction				dug	dug	dug	dug	unknown	drilled	drilled
<b>Microbiological</b>										
Sample ID:				964665	964289	969339	969340	964074	969346	969350 -a
Sample Date:				16-Jun-12	15-Jun-12	4-Jul-12	4-Jul-12	13-Jun-12	4-Jul-12	4-Jul-12
E. Coli	0 (MAC)	cts/100ml	0	0	12	0	0	<2***	0	0/0**
Total Coliforms	0 (MAC)	cts/100ml	0	0	230	32	144	<2***	6	2/0**
<b>General Chemistry &amp; Inorganics</b>										
Alkalinity as CaCO3	30-500 (OG)	mg/L	5	284	292	330	277	237	335	375
Chloride	250 (AO)	mg/L	1	14	6	196	17	36	340	348
Colour	5 (AO)	TCU	2	9	2	2	6	14	2	4
Conductivity	NV	uS/cm	5	621	566	1300	587	565	1810	1840
Dissolved Organic Carbon	5 (AO)	mg/L	0.5	3.3	1.7	1.3	3.6	5.1	2.2	1.9
N-NH3 (Ammonia)	NV	mg/L	0.02	<0.02	<0.02	<0.02	0.08	0.07	0.12	0.13
N-NO2 (Nitrite)	1 (MAC)	mg/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
N-NO3 (Nitrate)	10 (MAC)	mg/L	0.1	<0.10	<0.10	1.11	0.36	<0.10	<0.10	0.22
pH	6.5 - 8.5 (OG)	NV	NV	7.88	7.83	7.92	8.02	7.92	7.97	7.85
Sulphate	500 (AO)	mg/L	3	24	18	45	16	10	68	50
Total Dissolved Solids (COND - CALC)	500 (AO)	mg/L	1	404	368	845	382	367	1180	1200
Turbidity	5 (AO)	NTU	0.1	0.3	0.1	0.2	0.8	0.2	4.0	0.3
Hardness as CaCO3	80-100 (OG)	mg/L	1	<1	272	345	257	238	383	546
Calcium	NV	mg/L	1	<1	86	105	83	79	112	138
Magnesium	NV	mg/L	1	<1	14	20	12	10	25	49
Potassium	NV	mg/L	1	<1	<1	1	2	2	5	6
Sodium	200 (AO)	mg/L	2	146	8	121	16	22	210	160
Iron	0.3 (AO)	mg/L	0.03	<0.03	<0.03	<0.03	0.15	0.08	0.44	0.08
Manganese	0.05 (AO)	mg/L	0.01	<0.01	<0.01	<0.01	0.03	<0.01	0.01	0.01

Notes

- \* Analyzed by Health Unit; \*\* - duplicate.
- ODWS Ontario Drinking Water Standards, June 2003 (revised 2006):
  - Operational Guidelines (OG); Aesthetic Objective (AO)
  - Maximum Allowable Concentration (MAC)
- 0.09** Value exceeds ODWS
- n/a not available; \*\*\* - detection limit exceeds ODWS
- NV no value

**Table 2: Well Water Quality Results  
Kingston Solar LP, Kingston, Ontario**

Site Address	Ontario Drinking Water Standard	Units	Method Detection Limit	17	19	22	23	23	25	26
Lab ID				964808	963970	963969	963971	963972	964124	964467
Sample Date				16-Jun-12	11-Jun-12	11-Jun-12	11-Jun-12	11-Jun-12	12-Jun-12	13-Jun-12
Solar Area				P19 & P20	P19 & P20	P21 to P24	P21 to P24	P21 to P24	P21 to P24	P21 to P24
Well position relative to panels				downgradient	downgradient	downgradient	downgradient	downgradient	downgradient	downgradient
Well Depth (m)				30	7.3	unknown	6	6	30	7.3
Construction				drilled	dug	Shore Well	dug	dug	drilled	dug
<b>Microbiological</b>										
Sample ID:				964666	964667	964292	964293	n/a	969580	969340
Sample Date:				16-Jun-12	16-Jun-12	15-Jun-12	15-Jun-12	n/a	5-Jul-12	4-Jul-12
E. Coli	0 (MAC)	cts/100ml	0	0	0	117	0	n/a	100	0
Total Coliforms	0 (MAC)	cts/100ml	0	0	6	550	0	n/a	1000	2
<b>General Chemistry &amp; Inorganics</b>										
Alkalinity as CaCO3	30-500 (OG)	mg/L	5	266	239	176	373	371	303	290
Chloride	250 (AO)	mg/L	1	132	3	18	6	6	207	1
Colour	5 (AO)	TCU	2	8	4	40	2	3	10	3
Conductivity	NV	uS/cm	5	989	490	390	732	731	1360	554
Dissolved Organic Carbon	5 (AO)	mg/L	0.5	3.6	1.6	8.3	3.0	2.8	3.4	2.0
N-NH3 (Ammonia)	NV	mg/L	0.02	0.51	<0.02	0.06	0.03	0.03	<0.02	0.06
N-NO2 (Nitrite)	1 (MAC)	mg/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
N-NO3 (Nitrate)	10 (MAC)	mg/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	3.64	<0.10
pH	6.5 - 8.5 (OG)	NV	NV	7.99	7.89	7.90	7.63	7.71	8.13	7.93
Sulphate	500 (AO)	mg/L	3	34	26	5	36	36	47	21
Total Dissolved Solids (COND - CALC)	500 (AO)	mg/L	1	643	318	254	476	475	884	360
Turbidity	5 (AO)	NTU	0.1	1.1	0.1	1.3	0.3	0.3	1.8	0.4
Hardness as CaCO3	80-100 (OG)	mg/L	1	276	246	158	341	349	349	284
Calcium	NV	mg/L	1	79	92	50	112	115	120	89
Magnesium	NV	mg/L	1	19	4	8	15	15	12	15
Potassium	NV	mg/L	1	10	<1	1	2	2	6	4
Sodium	200 (AO)	mg/L	2	66	3	12	16	15	131	10
Iron	0.3 (AO)	mg/L	0.03	0.21	<0.03	0.45	0.04	0.05	0.14	0.11
Manganese	0.05 (AO)	mg/L	0.01	<0.01	<0.01	0.09	0.15	0.15	0.01	0.05

Notes

- \* Analyzed by Health Unit; \*\* - duplicate.
- ODWS Ontario Drinking Water Standards, June 2003 (revised 2006):
  - Operational Guidelines (OG); Aesthetic Objective (AO)
  - Maximum Allowable Concentration (MAC)
- 0.09** Value exceeds ODWS
- n/a not available; \*\*\* - detection limit exceeds ODWS
- NV no value

**Table 2: Well Water Quality Results  
Kingston Solar LP, Kingston, Ontario**

Site Address	Ontario Drinking Water Standard	Units	Method Detection Limit	29	30	32	33	34	35	37
Lab ID				964809	964079	964468	964655	963967	964125	964120
Sample Date				16-Jun-12	13-Jun-12	13-Jun-12	14-Jun-12	11-Jun-12	12-Jun-12	12-Jun-12
Solar Area				P21 to P24	P12	P19 & P20	P1	P1	P2	P21 to P24
Well position relative to panels				cross gradient	upgradient	downgradient	downgradient	downgradient	downgradient	downgradient
Well Depth (m)				3	6 to 11	3	21	6	11	unknown
Construction				shore well	drilled	dug	drilled	dug	drilled	dug
<b>Microbiological</b>										
Sample ID:				964668	969341	969343	n/a	964290	969352	969344
Sample Date:				16-Jun-12	4-Jul-12	4-Jul-12	6-Jun-12	15-Jun-12	4-Jul-12	4-Jul-12
E. Coli	0 (MAC)	cts/100ml	0	78	0/0**	0	0*	2	0	0
Total Coliforms	0 (MAC)	cts/100ml	0	420	0/0**	60	5*	81	0	1
<b>General Chemistry &amp; Inorganics</b>										
Alkalinity as CaCO3	30-500 (OG)	mg/L	5	174	240	224	213	265	216	287
Chloride	250 (AO)	mg/L	1	17	4	1	62	330	20	2
Colour	5 (AO)	TCU	2	58	6	13	30	5	21	2
Conductivity	NV	uS/cm	5	386	496	429	620	1620	489	563
Dissolved Organic Carbon	5 (AO)	mg/L	0.5	8.4	3.0	4.3	7.4	2.2	4.2	1.7
N-NH3 (Ammonia)	NV	mg/L	0.02	0.09	0.04	0.05	0.14	<0.02	0.06	0.03
N-NO2 (Nitrite)	1 (MAC)	mg/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
N-NO3 (Nitrate)	10 (MAC)	mg/L	0.1	<0.10	<0.10	0.49	<0.10	0.57	<0.10	<0.10
pH	6.5 - 8.5 (OG)	NV	NV	8.05	7.97	7.68	8.10	7.72	8.09	8.10
Sulphate	500 (AO)	mg/L	3	4	24	7	11	57	13	22
Total Dissolved Solids (COND - CALC)	500 (AO)	mg/L	1	251	322	279	403	1050	318	366
Turbidity	5 (AO)	NTU	0.1	1.9	3.4	1.2	0.7	0.4	6.8	0.6
Hardness as CaCO3	80-100 (OG)	mg/L	1	153	233	229	204	344	216	302
Calcium	NV	mg/L	1	54	78	82	67	123	75	98
Magnesium	NV	mg/L	1	10	10	6	9	9	7	14
Potassium	NV	mg/L	1	2	2	3	2	1	1	2
Sodium	200 (AO)	mg/L	2	12	3	<2	37	190	12	4
Iron	0.3 (AO)	mg/L	0.03	1.13	1.51	0.26	0.37	<0.03	2.09	0.15
Manganese	0.05 (AO)	mg/L	0.01	0.08	0.01	0.02	0.03	<0.01	0.54	0.08

Notes

- \* Analyzed by Health Unit; \*\* - duplicate.
- ODWS Ontario Drinking Water Standards, June 2003 (revised 2006):
  - Operational Guidelines (OG); Aesthetic Objective (AO)
  - Maximum Allowable Concentration (MAC)
- 0.09** Value exceeds ODWS
- n/a not available; \*\*\* - detection limit exceeds ODWS
- NV no value



**Table 2: Well Water Quality Results  
Kingston Solar LP, Kingston, Ontario**

Site Address	Ontario Drinking Water Standard	Units	Method Detection Limit	38	40	41	45	46	47	48
Lab ID				964810	964652	964123	963968	964121	964126	964811
Sample Date				16-Jun-12	14-Jun-12	12-Jun-12	11-Jun-12	12-Jun-12	12-Jun-12	16-Jun-12
Solar Area				P4	P21 to P24	P21 to P24	P19 & P20	P19 & P20	P7 & P11	P7 & P11
Well position relative to panels				downgradient	cross gradient	downgradient	downgradient	downgradient	downgradient	downgradient
Well Depth (m)				unknown	27	unknown	9 to 12	11	23	6.5
Construction				dug	drilled	unknown	drilled	drilled	drilled	dug
<b>Microbiological</b>										
Sample ID:				964669	969348	969353	964291	969354	969580	964670
Sample Date:				16-Jun-12	4-Jul-12	4-Jul-12	15-Jun-12	4-Jul-12	4-Jul-12	16-Jun-12
E. Coli	0 (MAC)	cts/100ml	0	1	2	0	342	0	2	0
Total Coliforms	0 (MAC)	cts/100ml	0	260	14	2	1900	14	19	50
<b>General Chemistry &amp; Inorganics</b>										
Alkalinity as CaCO3	30-500 (OG)	mg/L	5	369	264	431	231	267	276	361
Chloride	250 (AO)	mg/L	1	22	7	590	19	5	109	16
Colour	5 (AO)	TCU	2	7	5	7	6	2	5	6
Conductivity	NV	uS/cm	5	784	571	2900	531	544	889	792
Dissolved Organic Carbon	5 (AO)	mg/L	0.5	5.2	2.7	4.9	1.4	2.5	2.7	3.0
N-NH3 (Ammonia)	NV	mg/L	0.02	<0.02	<0.02	0.05	<0.02	0.17	<0.02	0.03
N-NO2 (Nitrite)	1 (MAC)	mg/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
N-NO3 (Nitrate)	10 (MAC)	mg/L	0.1	0.31	0.45	<0.10	0.91	<0.10	<0.10	<0.10
pH	6.5 - 8.5 (OG)	NV	NV	8.00	7.99	7.98	7.83	8.10	8.03	7.92
Sulphate	500 (AO)	mg/L	3	27	32	73	23	23	9	51
Total Dissolved Solids (COND - CALC)	500 (AO)	mg/L	1	510	371	1880	345	354	578	515
Turbidity	5 (AO)	NTU	0.1	0.3	0.3	8.1	0.2	8.4	0.5	0.5
Hardness as CaCO3	80-100 (OG)	mg/L	1	332	263	386	232	254	321	370
Calcium	NV	mg/L	1	118	79	125	83	77	104	117
Magnesium	NV	mg/L	1	9	16	18	6	15	15	19
Potassium	NV	mg/L	1	5	<1	<1	2	4	2	3
Sodium	200 (AO)	mg/L	2	29	8	388	12	11	47	15
Iron	0.3 (AO)	mg/L	0.03	<0.03	<0.03	1.07	<0.03	0.98	<0.03	0.08
Manganese	0.05 (AO)	mg/L	0.01	<0.01	<0.01	1.41	<0.01	<0.01	<0.01	0.02

Notes

- \* Analyzed by Health Unit; \*\* - duplicate.
- ODWS Ontario Drinking Water Standards, June 2003 (revised 2006):  
Operational Guidelines (OG); Aesthetic Objective (AO)  
Maximum Allowable Concentration (MAC)
- 0.09** Value exceeds ODWS
- n/a not available; \*\*\* - detection limit exceeds ODWS
- NV no value

**Table 2: Well Water Quality Results  
Kingston Solar LP, Kingston, Ontario**

Site Address	Ontario Drinking Water Standard	Units	Method Detection Limit	49	50	66	67	68
Lab ID				964077	964076	964653	964654	964812
Sample Date				13-Jun-12	13-Jun-12	14-Jun-12	14-Jun-12	16-Jun-12
Solar Area				P21 to P24	P14	P3	P2	P12
Well position relative to panels				downgradient	upgradient	downgradient	upgradient	upgradient
Well Depth (m)				>3	unknown	unknown	14	10
Construction				dug	dug	dug	drilled	drilled
<b>Microbiological</b>								
Sample ID:				969345	969347	969356	969355	964671
Sample Date:				4-Jul-12	4-Jul-12	4-Jul-12	4-Jul-12	16-Jun-12
E. Coli	0 (MAC)	cts/100ml	0	7	0	0	0	0
Total Coliforms	0 (MAC)	cts/100ml	0	18	0	1	1	6
<b>General Chemistry &amp; Inorganics</b>								
Alkalinity as CaCO3	30-500 (OG)	mg/L	5	275	335	99	326	223
Chloride	250 (AO)	mg/L	1	36	5	25	364	24
Colour	5 (AO)	TCU	2	6	8	2	2	8
Conductivity	NV	uS/cm	5	677	681	325	1830	510
Dissolved Organic Carbon	5 (AO)	mg/L	0.5	2.5	4.2	2.3	2.3	2.4
N-NH3 (Ammonia)	NV	mg/L	0.02	<0.02	0.04	<0.02	<0.02	0.02
N-NO2 (Nitrite)	1 (MAC)	mg/L	0.1	<0.10	<0.10	<0.10	<0.10	<0.10
N-NO3 (Nitrate)	10 (MAC)	mg/L	0.1	1.45	0.31	0.27	0.40	<0.10
pH	6.5 - 8.5 (OG)	NV	NV	8.00	7.96	8.11	7.98	8.30
Sulphate	500 (AO)	mg/L	3	30	37	21	29	10
Total Dissolved Solids (COND - CALC)	500 (AO)	mg/L	1	440	443	211	1190	332
Turbidity	5 (AO)	NTU	0.1	0.2	0.4	0.5	0.2	0.3
Hardness as CaCO3	80-100 (OG)	mg/L	1	320	325	111	356	<1
Calcium	NV	mg/L	1	100	97	33	121	<1
Magnesium	NV	mg/L	1	17	20	7	13	<1
Potassium	NV	mg/L	1	1	7	1	1	<1
Sodium	200 (AO)	mg/L	2	9	15	13	219	120
Iron	0.3 (AO)	mg/L	0.03	<0.03	<0.03	0.11	<0.03	<0.03
Manganese	0.05 (AO)	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Notes

- \* Analyzed by Health Unit; \*\* - duplicate.
- ODWS Ontario Drinking Water Standards, June 2003 (revised 2006):  
Operational Guidelines (OG); Aesthetic Objective (AO)  
Maximum Allowable Concentration (MAC)
- 0.09** Value exceeds ODWS
- n/a not available; \*\*\* - detection limit exceeds ODWS
- NV no value



---

**APPENDIX A**

**BACKGROUND INFORMATION AND REGULATORY  
CORRESPONDENCE**

---



# Cataraqui Source Protection Area

## Highly Vulnerable Aquifers

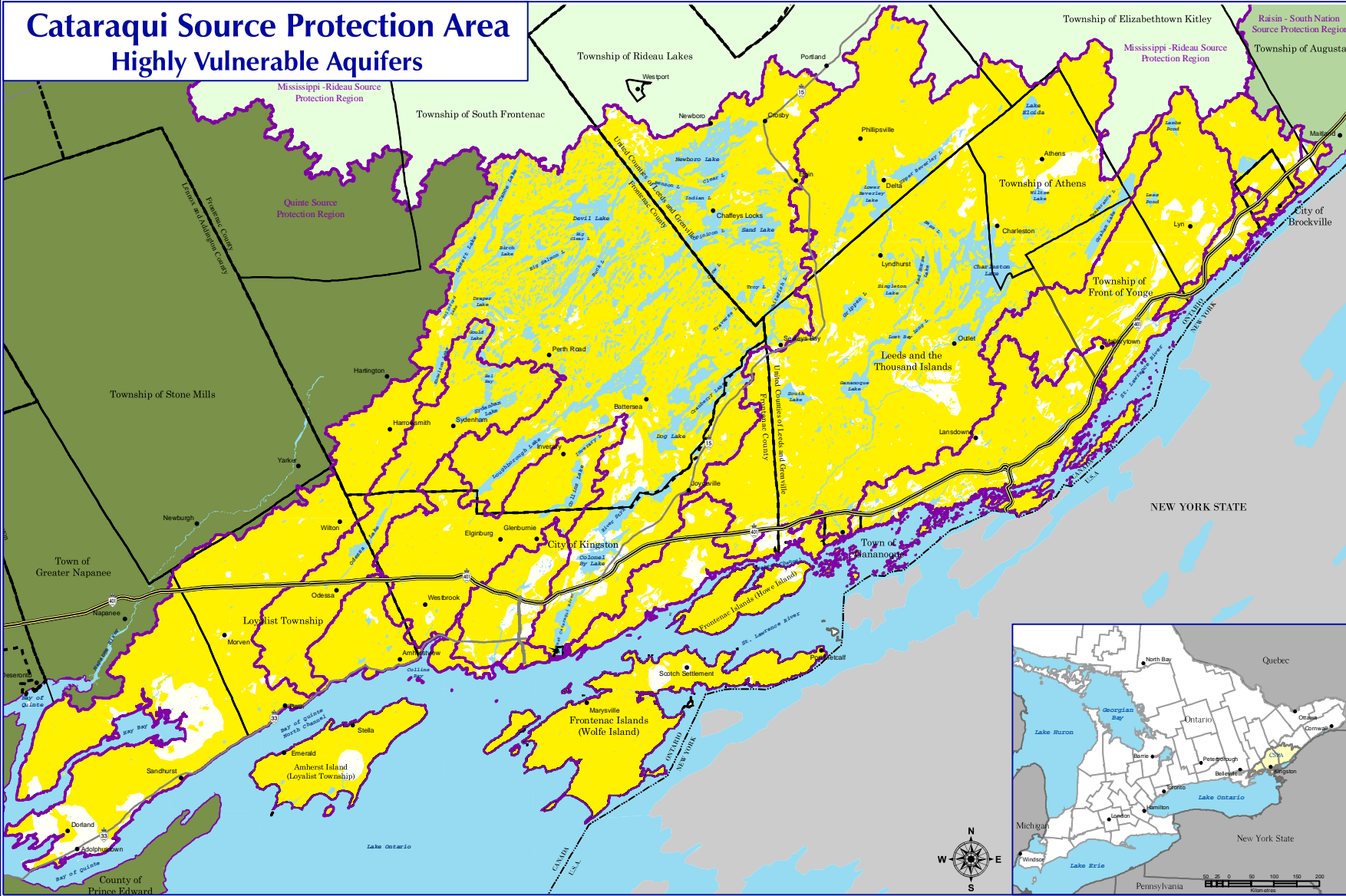
Map 5-1e



- Legend**
- International Boundary
  - Upper Tier Municipalities
  - Lower Tier Municipalities
  - Communities
  - Watersheds Boundary
  - Waterbodies

**Highly Vulnerable Aquifer - Vulnerability Scoring**

6



**Notes:**

(1) The assessment of groundwater vulnerability that supports this map was undertaken on a Cataraqui-wide basis. Site-specific investigation is recommended to confirm the vulnerability of any given location.

(2) Local assessments of groundwater vulnerability were completed for each of the wellhead protection areas (WHPAs) in the Cataraqui area. The WHPAs are located around the Cana Well Supply (in Kingston), the Lansdowne Well Supply, and the Miller Manor Apartments Well Supply (in Malton/Town). In addition, part of the WHPAs for the Westport Well Supply falls within the Cataraqui area. The local assessments for these WHPAs refine the Cataraqui-wide assessment that is shown on this map.

Created: August 20, 2009  
 Printed: February 23, 2011

Scale 1:330,000

Universal Transverse Mercator Projection  
 North American Datum 83

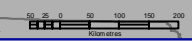
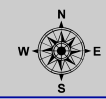
August 2008

**CATARAQUI**  
 Source Protection Area

This map was funded by the Ontario Government, and the Ministry of Environment.  
 Produced by the Cataraqui Region Conservation Authority under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2005.  
 Aerial Photography © Group Alta, 2005.

The CRCA makes every effort to insure that the information presented is accurate for the intended purposes of the map. There is an inherent error in all mapping products, and accuracy of the mapping cannot be guaranteed for all possible uses. An environmental monitor is recommended for themselves if the information is suitable for their purposes.

YBase Data/Source Water/MapAssessment Report/Chapter 5-1e  
 Highly Vulnerable Aquifer











---

**APPENDIX B**  
**COMMUNICATIONS RECORD**

---





Burr, Darin &lt;dburr@dillon.ca&gt;

---

**RE: Kingston Solar Farm project**

1 message

**Crossley, Frank (ENE)** <Frank.Crossley@ontario.ca>

Wed, May 2, 2012 at 6:05 PM

To: "Burr, Darin" &lt;dburr@dillon.ca&gt;

Cc: "Taylor, Peter (ENE)" &lt;Peter.G.Taylor@ontario.ca&gt;, "Dobiech, Craig (ENE)" &lt;Craig.Dobiech@ontario.ca&gt;, "Arnott, David (ENE)" &lt;David.Arnott@ontario.ca&gt;, "Kaye, Brian (ENE)" &lt;Brian.Kaye@ontario.ca&gt;

Hello Darin

Thank you for your e-mail dated May 01, 2012 requesting a groundwater monitoring program at an upcoming proposed solar farm construction site by Samsung in the Kingston area (Unity Road & Mud Lake Road). If the proposed site is classified as an 'environmentally sensitive' site by a qualified person (P.Eng. or P.Geo.), then the Eastern Region Groundwater Unit recommends that a groundwater monitoring program be implemented prior to the commencement of the construction phase.

To this end, the Eastern Region Groundwater Unit recommends the following groundwater monitoring program:

- Contact all well owners within 500 metres of the site boundaries prior to the commencement of construction activities and seek permission to undertake a groundwater survey (if the number of well owners exceeds five then a representative number of well owners should be contacted). If permission is granted then:
  - interview the residents regarding well construction, groundwater quality, groundwater quantity and well locations to establish a history of the water well.
  - collect a water well sample from the well after allowing the distribution system to flow for approximately 5 minutes. The sample should be collected prior to any treatment systems ("raw").
  - submit the water sample for analysis to a qualified laboratory. The analysis should be the "subdivision suite" (alkalinity, ammonia, bacteria, calcium, chloride, colour, conductivity, DOC, hardness, iron, magnesium, manganese, nitrite, nitrate, pH, potassium, sodium, sulphate, TDS and turbidity).
- establish a contingency plan by a qualified person.

Conversely, a monitoring well network can be constructed. The monitoring wells must be representative of the nearby water wells (similar depths). Appropriate water samples shall be collected from the monitoring wells and submitted to a qualified laboratory for the above listed parameters ('subdivision suite'). A contingency plan shall be established by a qualified person.

The groundwater monitoring program should be conducted under the supervision of a qualified person (P.Eng. or P.Geo.). The survey information should be summarized in a report by a qualified person and a copy forwarded to this Ministry.

In the event that a complaint arises against the construction activities, the proponent should sample the complainant's well and appropriate monitoring well, if present. The water samples should be submitted as "high priority" to a qualified laboratory. If a problem is confirmed related to the construction activities at the site, then the proponent should immediately provide bottled water to the impacted party and implement their contingency plan. This Ministry should be notified of any complaints and the company's actions to address the complaints.

F. Crossley, P.Geo.

Hydrogeologist

Technical Support

Eastern Region

1259 Gardiners Road, Unit 3

Kingston, Ontario K7P 3J6

[\(613\)549-4000x2631](tel:(613)549-4000x2631)

---

**From:** Burr, Darin [mailto:[dburr@dillon.ca](mailto:dburr@dillon.ca)]

**Sent:** May 01, 2012 7:24 AM  
**To:** Crossley, Frank (ENE)  
**Cc:** Enright, Michael  
**Subject:** Kingston Solar Farm project

Frank, further to our phone discussion yesterday afternoon, I am sending you this email to request information on your groundwater monitoring requirements/advice for this project. Our client (Samsung) is proposing to construct a solar farm project on Mud Lake Road/Unity Road, north east of Kingston. A preliminary map of the proposed solar farm panel locations is attached. The specific questions that I have for the MOE are as follows

- 1) What size of buffer area should be used when identifying potential private wells to sample?
- 2) What is the recommended timing of the monitoring program relative to the construction date, and are there any ongoing monitoring requirements during operation?
- 3) What type of information is required to be collected in the monitoring program, and what is the recommended chemical suite for analysis?
- 4) What are the reporting requirements?
- 5) Are there any other hydrogeology related investigations/assessments that are required/recommended.

Thank you for your assistance in this matter.

Regards, Darin



**Darin Burr, M.Sc., P.Geo**  
*Associate*  
**Dillon Consulting Limited**  
130 Dufferin Avenue Suite 1400  
London, Ontario, N6A 5R2  
T - 519.438.1288 ext. 1236  
F - 519.672.8209  
M - 519.520.4773  
dburr@dillon.ca  
www.dillon.ca

 Please consider the environment before printing this email



## **KINGSTON SOLAR LP**

9<sup>th</sup> Fl. 55 Standish Court, Mississauga, ON, L5R 4B2 TEL: 905-501-5658 FAX: 905-285-1852

### **Invitation to Participate in a Water Well Survey**

Dear Resident:

As you may know, Kingston Solar LP is planning to develop a 100MW solar installation. The project to be known as the Sol-Luce Kingston Solar PV Energy Project will be located in both Loyalist Township and the City of Kingston. The project will require approval under Ontario Regulation 359/09 – Renewable Energy Approval (REA), which is being coordinated by the Ontario Ministry of Environment (MOE).

Under the guidance of the MOE, Kingston Solar LP has taken the initiative to conduct a background study of well water quality at a representative sample of properties within 500 m of the proposed solar farm. The purpose of the program is to gain a better understanding of the groundwater quality in your area. Your property has been selected as a potential site for the sampling program. Please note that this program is completely funded by Kingston Solar LP, and there is no cost to the homeowner.

In the next few weeks, a representative from our consulting firm, Dillon Consulting Limited (Dillon), will contact you regarding your interest in participating in the well water sampling program. The well water sampling program will involve taking a water sample from your water supply system at a point prior to treatment (i.e. prior to water passing through softeners, filters or disinfection equipment). The water sampling program will use existing taps and will not require alteration of the household plumbing. The water sample will be tested by a local laboratory for bacteriological parameters, metals and general chemistry. At the time of the visit, the Dillon representative will also ask you some questions about your well and your water quality. You will be provided with the laboratory results for your water sample once it has been received.

We would like to arrange for a brief meeting at your home to complete a questionnaire (approximate time is 30 minutes) and obtain a water sample for analysis, if permitted. Please contact Darin Burr at (888) 345-5668, ext. 1236 or email at [dburr@dillon.ca](mailto:dburr@dillon.ca) to schedule an appointment at your earliest convenience.

Sincerely,

A. José De Armas  
Manager, Project Development





FINAL

**Sol-Luce Kingston Solar PV Energy Project  
MINUTES OF MEETING**

DATE: June 1, 2012

TIME: 9 am EST

LOCATION: Cataraqui Region Conservation Authority Offices

PRESENT: A. Jose De Armas ) Kingston Solar LP (Samsung)  
Rob McRae ) Project Manager, Source Water Protection, CRCA  
John Williamson ) Chair, Cataraqui Source Protection Committee  
Darin Burr ) Dillon Consulting Limited (Dillon)

FILE: 12-6428

<u>Action By</u>	<u>Item</u>
<u>None</u>	CRCA noted that the meeting would focus on the hydrogeologic aspects of the project, and that the Conservation Authority had interests in other environmental aspects of the project, to be addressed separately.
None	Dillon provided general information on the area hydrogeology, location of vulnerable aquifers, anticipated groundwater flow conditions, and locations of private water wells within 500 m of the proposed solar installations. Dillon also provided photographs and conceptual drawings of typical solar installation projects. Conceptual plans for the Kingston PV Energy Project solar panel footings were shown.
None	Dillon provided an outline of the survey work program, including the identified private well sampling locations and analytical testing suite, with all sampling to be completed prior to construction. Dillon stated that the testing program was based on direction from the Ontario Ministry of the Environment (MOE) Regional office in Kingston. Well water sampling parameters included microbiology, general inorganics, select metals and nutrients. Program would also include completing a questionnaire for each homeowner. Dillon stated that not all homes that have wells within 500 m of the installations will be sampled, and that as per MOE instructions, sampling will be from a representative number of wells that are located downgradient of the proposed solar installations
None	CRCA stated that some members of the public had expressed concerns with solar projects to the Cataraqui Source Protection Committee, with respect to potential risk to the environment as a result of the prevalence of high vulnerability aquifers. Of special concern was the need to construct a large number of drill holes to support the solar panel foundations, and whether these holes would increase the vulnerability of the aquifer. Dillon and Samsung stated that the risk to the aquifers is very low as there is no bulk use of chemicals at the site, and environmental management plans will be followed during construction and operation of the facility. In addition, the depth of the foundation drill holes is shallow (~ 2 m), and that the area around the foundations is already highly fractured, therefore the boreholes will not act as a preferential pathway for groundwater movement. Boreholes used to install foundation piles will be sealed with concrete.

FINAL

<u>Action By</u>	<u>Item</u>
	Furthermore, MOE requires the development and implementation of a contingency plan should there be complaints from local residences. The contingency plans will be identified in the survey report.
None	CRCA asked if the monitoring program will include the monitoring of private wells and/or the drilling of monitoring wells to allow monitoring of water levels and water quality during construction and site operations. CRCA suggests that data from this project could be used to address public concerns and for research purposes to examine if impacts from solar projects to groundwater are a concern. Samsung stated that at this time, the scope of the project will be based on the requirements of the MOE only.
Samsung	CRCA asked if the results of the study will be made available to the CRCA. Samsung stated that some of the data is confidential to the homeowners; however, Samsung will look into what information can be shared.
None	<p>CRCA stated that the proposed Catarauqui Source Protection Plan does not address solar installations. CRCA is not aware of any documented concerns with solar farms as it relates to groundwater impacts. Nevertheless, CRCA does have the following main questions/concerns:</p> <ol style="list-style-type: none"><li>1) What are the potential impacts during construction from erosion and sediment control? CRCA stated that this has been a concern with previous installation projects and recommended that the Samsung project include and implement a “top-notch” sediment control plan.</li><li>2) What are the longer term water quantity impacts, and will the installation will change the water budget?</li><li>3) Are there any long-term water quality issues from the breakdown of chemicals from the solar panels and mounting apparatus, and site maintenance?</li></ol> <p>Samsung/Dillon stated that erosion and sediment control plans will be part of the REA submission. No long term quantity impacts are expected, as precipitation will drip off the sides of the panels near to where it would recharge during pre-construction conditions. Also, groundwater is not used at the site. No large quantities of chemicals will be present that would pose an environmental risk. Environmental management programs will be in place during construction to mitigate risks from construction vehicles (e.g., risks from fuel spills, leaks etc.). Panels are made primarily of silicon, and there is no identified or previously documented risk from breakdown of the panels. Trace metals are contained in the panels; however, the risk of impacts to groundwater is very low as metal containing components are covered with silicon, and metals, if exposed to the elements, are not readily soluble or mobile in groundwater.</p>

#### ERRORS AND/OR OMISSIONS

These minutes were prepared by Darin Burr who should be notified immediately of any errors and/or omissions.

*FINAL*

DILLON CONSULTING LIMITED  
LONDON, ONTARIO

Other Distribution  
DTB/File



## EXAMPLE REPORT

July 24, 2012

Project # 12-6428-2000

**Re: Private Well Water Quality Sample Results**

Dear Mr. Norman

This letter presents the results of the laboratory analysis performed on an untreated water sample from your well that was collected at the above-mentioned location. Sampling was performed as part of a well water survey being conducted by Kingston Solar LP under the guidance of the Ontario Ministry of the Environment. Information obtained during the survey will be used to assess background water quality conditions in your area

The groundwater was analyzed for several parameters including bacteria, metals and general chemistry. The results of the analysis were compared to the *Ministry of the Environment's Ontario Drinking Water Standards* (ODWS) and are presented in the attached table and laboratory report. An information bulletin that describes the water quality standards for the tested parameters and an information bulletin from the local health department on how to interpret the bacteriological (*E Coli* and Total Coliform) results are also attached.

The results of the analysis indicate that the well water sample meets the ODWS for the measured parameters with the following exceptions:

- **Health Related** - Total Coliforms
- **Non-Health Related** – Total Dissolved Solids, Hardness

Thank you for participating in the well sampling program. If you have any questions, please do not hesitate to contact the undersigned.

Yours sincerely,

**DILLON CONSULTING LIMITED**

Darin Burr, M.Sc., P.Geo.  
Hydrogeologist


Encls.

# Well Water Quality Results

## Kingston Solar LP, Kingston, Ontario

Address  Lab ID Sample Date	Ontario Drinking Water Standard	Units	Method Detection Limit	964811
				16-Jun-12
<b>Microbiological</b>				
Sample ID:				964670
Sample Date:				16-Jun-12
E. Coli	0 (MAC)	cts/100ml	0	0
Total Coliforms	0 (MAC)	cts/100ml	0	<b>50</b>
<b>General Chemistry &amp; Inorganics</b>				
Alkalinity as CaCO3	30-500 (OG)	mg/L	5	361
Chloride	250 (AO)	mg/L	1	16
Colour	5 (AO)	TCU	2	<b>6</b>
Conductivity	NV	uS/cm	5	792
Dissolved Organic Carbon	5 (AO)	mg/L	0.5	3.0
N-NH3 (Ammonia)	NV	mg/L	0.02	0.03
N-NO2 (Nitrite)	1 (MAC)	mg/L	0.1	<0.10
N-NO3 (Nitrate)	10 (MAC)	mg/L	0.1	<0.10
pH	6.5 - 8.5 (OG)	NV	NV	7.92
Sulphate	500 (AO)	mg/L	3	51
Total Dissolved Solids (COND - CALC)	500 (AO)	mg/L	1	<b>515</b>
Turbidity	5 (AO)	NTU	0.1	0.5
Hardness as CaCO3	80-100 (OG)	mg/L	1	<b>370</b>
Calcium	NV	mg/L	1	117
Magnesium	NV	mg/L	1	19
Potassium	NV	mg/L	1	3
Sodium	200 (AO)	mg/L	2	15
Iron	0.3 (AO)	mg/L	0.03	0.08
Manganese	0.05 (AO)	mg/L	0.01	0.02

### Notes

- \* Analyzed by Health Unit; \*\* - duplicate.
- ODWS Ontario Drinking Water Standards, June 2003 (revised 2006):  
Operational Guidelines (OG); Aesthetic Objective (AO)  
Maximum Allowable Concentration (MAC)
-  Value exceeds ODWS
- n/a not available; \*\*\* - detection limit exceeds ODWS
- NV no value





**EXOVA OTTAWA**

**Certificate of Analysis**



Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Report Number: 1212164  
 Date Submitted: 2012-06-18  
 Date Reported: 2012-06-19  
 Project: Kingston Solar  
 COC #: 149773

Group	Analyte	MRL	Units	Guideline
Microbiology	Escherichia Coli	0	cf/100mL	MAC-0
	Total Coliforms	0	cf/100mL	MAC-0

Lab ID:  
 Sample Matrix  
 Sample Type  
 Sampling Date  
 Sample ID.

964670 Water
0
50*

Guideline = 00WS00  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional CA/CC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, CG = Operational  
 Guideline, IMAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guidelines, IPWQO = Interim Provincial Water Quality Objective.



**Certificate of Analysis**

**EXOVA OTTAWA**

Client:	Dillon Consulting Limited (London) 130 Dufferin Ave., Suite 1400 London, ON N6A 5R2	Report Number:	1212221
Attention:	Mr. Darin Burr	Date Submitted:	2012-06-18
PO#:		Date Reported:	2012-06-26
Invoice to:	Dillon Consulting Limited (London)	Project:	Kingston Solar
		COC #:	149773

**Dear Darin Burr:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

Lorna Wilson  
2012.06.26  
10:20:44 -04'00'

APPROVAL:

Lorna Wilson  
Inorganic Laboratory Supervisor

Exova (Ottawa) is certified and accredited for specific parameters by:  
 CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAAF, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.  
 Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

**EXOVA OTTAWA**

**Certificate of Analysis**



Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Report Number: 1212221  
 Date Submitted: 2012-06-18  
 Date Reported: 2012-06-26  
 Project: Kingston Solar  
 COC #: 149773

Group	Analyte	MRL	Units	Lab ID, Sample Matrix Sample Type Sampling Date Sample ID, Guideline
Calculations	Hardness as CaCO3	1	mg/L	964811 Water
	TDS (COND - CALC)	1	mg/L	
General Chemistry	Alkalinity as CaCO3	5	mg/L	
	Cl	1	mg/L	
	Colour	2	TCU	
	Conductivity	5	uS/cm	
	DOC	0.5	mg/L	
	N-NO2	0.10	mg/L	
	N-NO3	0.10	mg/L	
	pH	1.00		
	SO4	3	mg/L	
	Turbidity	0.1	NTU	
Metals	Ca	1	mg/L	
	Fe	0.03	mg/L	
	K	1	mg/L	
	Mg	1	mg/L	
	Mn	0.01	mg/L	
Nutrients	Na	2	mg/L	
	N-NH3	0.02	mg/L	

**Guideline =** \* = Guideline Exceedence  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.

## Water Quality Interpretation Information Sheet

### **Alkalinity as CaCO<sub>3</sub> (inorganic)**

Alkalinity is a measure of the resistance of water to the effects of acids added to water. The recommended range for alkalinity is 30 to 500 mg/L expressed as calcium carbonate. Water with low alkalinity may tend to accelerate natural corrosion leading to "red water" problems whereas high alkalinity waters may produce scale incrustations on utensils, service pipes and water heaters.

### **Ammonia (N-NH<sub>3</sub>)**

This parameter is a nutrient related compound in water formed from the decay of organic material. It is not included in the Ontario Drinking Water Standards.

### **Calcium (Ca)**

This parameter is natural in groundwater and is not included in the Ontario Drinking Water Standards.

### **Chloride (Cl)**

Chloride is a common non-toxic material present in small amounts in drinking water and produces a detectable salty taste at the aesthetic objective level of 250 mg/L. Chloride is widely distributed in nature, generally as the sodium (NaCl), potassium (KCl) and calcium (CaCl<sub>2</sub>) salts.

### **Colour (physical)**

The aesthetic objective for colour in drinking water is 5 TCU (True Colour Units). Water can have a faint yellow/brown colour which is often caused by organic materials created by the decay of vegetation. Sometimes colour may be contributed to by iron and manganese compounds produced by processes occurring in natural sediments or in aquifers.

### **Conductivity**

This parameter is not included in the Ontario Drinking Water Standards.

### **Dissolved Organic Carbon (DOC) (Organic)**

The aesthetic objective for dissolved organic carbon (DOC) in drinking water is 5 mg/L. High DOC is an indicator of possible water quality deterioration during storage and

distribution due to the carbon being a growth nutrient for bacteria. High DOC is also an indicator of potential chlorination by-product problems.

### ***Escherichia Coli (E. coli)***

*Escherichia Coli* should not be detected/present in any drinking water sample. *Escherichia Coli* is a fecal coliform and is present in fecal matter and prevalent in sewage, but is rapidly destroyed by chlorine. It is a strong indicator of recent fecal pollution. Contamination with sewage as shown by positive E-coli tests would strongly suggest presence of pathogenic bacteria and viruses, as well as more chlorine resistant pathogens such as *Giardia* and *Cryptosporidium*, which are much more difficult to detect. Please refer to Public Health Unit Information Sheet on "Disinfection of Wells" for further information on how to interpret your water quality results for *E. Coli*.

### **Hardness as CaCO<sub>3</sub>**

Hardness is caused by dissolved calcium and magnesium, and is expressed as the equivalent quantity of calcium carbonate. On heating, hard water has a tendency to form scale deposits and can form excessive scum with regular soaps. However, certain detergents are largely unaffected by hardness. Conversely, soft water may result in accelerated corrosion of water pipes. Hardness levels between 80 and 100 mg/L as calcium carbonate (CaCO<sub>3</sub>) are considered to provide an acceptable balance between corrosion and incrustation. Water supplies with hardness greater than 200 mg/L are considered poor but tolerable. Hardness in excess of 500 mg/L in drinking water is unacceptable for most domestic purposes.

### **Iron (Fe)**

Iron may be present in ground water as a result of mineral deposits and chemically reducing underground conditions. It may also be present in surface waters as a result of anaerobic decay in sediments and complex formation. The aesthetic objective for iron, set by appearance effects, in drinking water is 0.3 mg/L. Excessive levels of iron in drinking water supplies may impart a brownish colour to laundered goods, plumbing fixtures and the water itself; it may produce a bitter, astringent taste in water and beverages; and the precipitation of iron can also promote the growth of iron bacteria in plumbing.

### **Magnesium (Mg)**

This parameter is naturally occurring in groundwater as a result of dissolution of minerals in the rock and is not included in the Ontario Drinking Water Standards.

### **Manganese (Mn)**

The colour related aesthetic objective for manganese in drinking water is 0.05 mg/L. Like iron, manganese is objectionable in water supplies because it stains laundry and fixtures black, and at excessive concentrations causes undesirable tastes in beverages. Manganese

is present in some groundwaters because of chemically reducing underground conditions coupled with presence of manganese mineral deposits. Manganese is also occasionally present, seasonally, in surface waters when anaerobic decay processes in sediments is occurring.

#### **N-NO<sub>3</sub> (Nitrate)**

The maximum acceptable concentration of nitrates in drinking water is 10 mg/L nitrogen. Nitrates are present in water (particular groundwater) as a result of decay of plant or animal material, the use of agricultural fertilizers, domestic sewage or treated wastewater contamination, or geological formations containing soluble nitrogen compounds. There is a risk that babies and small children may suffer blood related problems (methaemoglobinaemia) with excess nitrate intake.

#### **N-NO<sub>2</sub> (Nitrite)**

The maximum acceptable concentration of nitrite in drinking water is 1.0 mg/L as nitrogen. Nitrate may occur in groundwater, however, if chlorination is practiced, the nitrate will usually be oxidized to nitrate

#### **pH ( physical-chemical)**

pH is a parameter that indicates the acidity of a water sample. The operational guideline recommended in drinking water is to maintain a pH between 6.5 and 8.5. The principal objective in controlling pH is to produce a water that is neither corrosive nor produces incrustation. At pH levels above 8.5, mineral incrustations and bitter tastes can occur. Corrosion is commonly associated with pH levels below 6.5 and elevated levels of certain undesirable chemical parameters may result from corrosion of specific types of pipe.

#### **Potassium (K)**

This parameter is naturally occurring in groundwater as a result of dissolution of minerals in the rock, and is not included in the Ontario Drinking Water Standards.

#### **Sodium (inorganic)**

The aesthetic objective for sodium in drinking water is 200 mg/L at which it can be detected by a salty taste. Sodium is not toxic. Consumption of sodium in excess of 10 grams per day by normal adults does not result in any apparent adverse health effects. In addition, the average intake of sodium from water is only a small fraction of that consumed in a normal diet. A maximum acceptable concentration for sodium in drinking water has, therefore, not been specified. Persons suffering from hypertension or congestive heart disease may require a sodium-restricted diet, in which case, the intake of sodium from drinking water could become significant. It is therefore recommended that the measurement of sodium levels be included in routine monitoring programs of water supplies. The local Medical Officer of Health should be notified when the sodium

concentration exceeds 20 mg/L, so that this information may be passed on to local physicians.

Softening using a domestic water softener increases the sodium level in drinking water and may contribute a significant percentage to the daily sodium intake for a consumer on a sodium restricted diet. It is recommended that a separate unsoftened supply be retained for cooking and drinking purposes.

### **Sulfate (SO<sub>4</sub>)**

The aesthetic objective for sulfate in drinking water is 500 mg/L. At levels above this concentration, sulfate can have a laxative effect, however, regular users adapt to high levels of sulfate in drinking water and problems are usually only experienced by visitors and new consumers. The presence of sulfate in drinking water above 150 mg/L may result in noticeable taste. The taste threshold concentration, however, depends on the associated metals present in the water. High levels of sulfate may be associated with calcium, which is a major component of scale in boilers and heat exchangers. In addition, sulfate can be converted into sulfide by some anaerobic bacteria creating odour problems and potentially greatly accelerating corrosion.

### **Total Coliforms**

Total Coliforms include a large number of non-disease-causing bacteria arising from soil and vegetation. The Ontario Drinking Water standard for Total Coliforms is "not detected". The presence of any total coliform bacteria in water leaving a treatment unit or in any treated water immediately following treatment signifies inadequate treatment. *Please refer to Public Health Unit Information Sheet on "Disinfection of Wells" for further information on how to interpret your water quality results for Total Coliform.*

### **Total Dissolved Solids (TDS)**

The aesthetic objective for total dissolved solids in drinking water is 500 mg/L. The term "total dissolved solids" (TDS) refers mainly to the inorganic substances dissolved in water. The principal constituents of TDS are chloride, sulphates, calcium, magnesium and bicarbonates. The effects of TDS on drinking water quality depend on the levels of the individual components. Excessive hardness, taste, mineral deposition or corrosion are common properties of highly mineralized water. The palatability of drinking water with a TDS level less than 500 mg/L is generally considered to be good.

### **Turbidity**

Control of turbidity in drinking-water systems is important for both health and aesthetic reasons. The substances and particles that cause turbidity can be responsible for significant interference with disinfection, can be a source of disease-causing organisms and can shield pathogenic organisms from the disinfection process.

Turbidity in excess of 5.0 NTU becomes visible to the naked eye and as such a majority of consumers may object to its presence. Therefore, an aesthetic objective of 5.0 NTU has been set for all waters at the point of consumption.

*Information Sources*

*Kingston, Frontenac and Lennox & Addington Public Health. Disinfection of Wells bulletin, FS 040 04/04/06.*

*Ministry of the Environment, 2006. Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines. File PIBS 4449e01*



## Disinfection of Wells

Estimate the quantity of water in the well, for each 100 gallons (450 litres) add sixteen ounces (455 mL) of household hypochlorite solution (household bleach).

### Calculate the amount of bleach needed:

Example: 150 ft. well X 1.22 gal. per ft. = 183 gal. of water (1.83 X 16 oz. = 29 oz. approx.). Therefore we would use 29 oz. of bleach to disinfect.

After adding bleach, open all taps to run the water through your pressure system until you can taste and smell the chlorine. Close taps. Let the chlorine stand in the system for 12 hours (overnight). The next day run the water, but not into your septic system, until the taste or odour of chlorine has gone.

**NOTE:** As you are adding the chlorine to the well, use some of the solution to disinfect the top of the well and inside the casing.

After 48 hours, a sample of the water should be submitted to the Provincial Laboratory for examination. If satisfactory, submit a second sample one week after disinfecting the well. Should the report be unsatisfactory, contact a public health inspector at KFL&A Public Health for further information.

(See back of this page for interpretation)

This table will help you estimate the number of gallons per foot of water in the well.

Inside Diameter	Gallons per foot of water in well
2 inches (5.0 cm)	0.14 (0.63 litres)
4 inches (10.0 cm)	0.53 (2.4 litres)
5 inches (12.7 cm)	0.86 (3.9 litres)
6 inches (15.2 cm)*	1.22 (5.5 litres)
7 inches (17.7 cm)	1.67 (7.5 litres)
8 inches (20.0 cm)	2.13 (9.6 litres)
24 inches (60.0 cm)	19.05 (86.6 litres)
30 inches (76.0 cm)	30.05 (136.0 litres)

\*usual size of casing pipe for well

Add about 8 drops of liquid household bleach to 1 gallon (4.5 litres) of water. Stir it and let it sit for at least 15 minutes.

... over

**Kingston**  
221 Portsmouth Avenue  
Kingston, ON K7M 1V5  
Tel: 613-549-1232  
1-800-267-7875  
Fax: 613-549-7896

**Cloyn**  
P.O. Box 59  
14209 Highway 41  
Cloyn, ON K0H 1K0  
Tel: 613-336-8989  
Fax: 613-336-0522

**Napanee**  
41 Dundas Street  
Napanee, ON  
K7R 1Z5  
Tel: 613-354-3357  
Fax: 354-6267

**Sharbot Lake**  
P.O. Box 149  
1130 Elizabeth Street  
Sharbot Lake, ON K0H 2P0  
Tel: 613-279-2151  
Fax: 613-279-3997

## How to interpret your laboratory results

### Total Coliforms:

- This group of bacteria is always present in animal wastes and sewage, but is also found in soil and on vegetation.
- The presence of these bacteria in your well is usually the result of soil run-off or septic tank seepage.

### Escherichia Coli (E. coli):

- This bacteria is found only in the stomachs of people and animals.
- The presence of E. coli bacteria in your well is usually the result of recent sewage contamination from a nearby source.
- These bacteria are the ones that may cause disease.

### Interpretation of laboratory results:

TOTAL COLIFORMS	E. COLI	WHAT IT MEANS
0	0	Safe for drinking. Repeat samples may not show exactly the same results because bacteria are not distributed uniformly in water, contamination tends to enter intermittently and numbers can change during sample transit time.
1 → 5	0	Doubtful for a single sample, but safe for drinking if condition remains stable based on three samples.
6 → >80	0	Unsafe for drinking. Contamination is not likely to be of sewage origin unless far removed from the water source or unless there has been a delay in receipt of sample. Common with new wells before disinfection and shallow dug wells which are not properly sealed.
1 → >80	1 → 60	Unsafe for drinking. Pollution source may be some distance from the water source, or diluted with large volumes of pure water, or the sample may not have been received within 48 hours of being taken. Samples older than 48 hours cannot provide reliable results.
>80	>60	Unsafe for drinking. This water is contaminated and should not be used for drinking under any circumstances. Do not attempt to apply these standards and interpretations to surface waters used for swimming.
EST		Unsafe for drinking. Number has been estimated due to some interference with the test. Exact number is not really critical, especially if in excess of limits shown above, for judging safety.
O/G		Doubtful condition and not recommended for drinking. No coliform bacteria could be detected because of "overgrowth" by other bacteria. This condition frequently occurs with new wells, dug wells receiving soil drainage, or wells which have been idle for some time. Collect another sample and identify clearly "REPEAT SAMPLE".



---

**APPENDIX C**  
**WELL USER SURVEY FORM**

---



# WATER WELL SURVEY FORM

## Kingston Solar LP

### PROPERTY LOCATION & USE

**Address (911 Number):**

**Municipality, Postal Code:**

**Mailing Address (if different from above):**

**Municipality, Postal Code:**

### RESIDENT / OWNER INFORMATION

**Person Interviewed**

Resident

Owner

Other

**Address:**

**Telephone:**

**If Resident is not Owner, indicate Owner's name:**

**Address:**

**Telephone:**

**Were there any previous owners?**

Yes

No

**If yes, please indicate previous owner's name(s):**

### WATER WELL CONSTRUCTION

Photos Taken

**Note: All information below is to be provided by well owner or resident. Do not open the well under any circumstances.**

**Number of wells on property (use one form per well on property):**

**Usage Activity (active, dormant):**

**MOE Well Number:**

#  Not available )

**Well usage (e.g. domestic, irrigation, washing):**

**Well Type:**

Drilled

Dug

N/A-Unknown

Overburden

Bedrock

N/A-Unknown

**Date Installed:**

**Name of Well Driller:**

**Is driller's borehole record available (Yes/No)?**

**Well depth (ft/m):**

**Static water level (ft/m bgs):**

**Casing material (steel, concrete):**

**Diameter of Well Casing (inches or mm):**

<b>Screen presence, depth (open hole in bedrock):</b>	<b>Pump Type (submersible, jet, hand, etc.):</b>
<b>Well Coordinates (GPS)</b> <b>Easting:</b> <b>Northing:</b> <b>Datum:</b>	<b>Screen presence, depth (open hole in bedrock):</b>
<b>WATER QUANTITY</b>	
<b>How many years has the interviewed person used the well?</b>	<b>How often does the well run dry (never, daily, weekly, monthly, annually, once)?</b>
<b>If so, what activity is associated with the well running dry (washing, irrigation, etc.)?</b>	<b>Is the well ever recharged by water truck (Yes/No)?</b>
<b>WATER TREATMENT SYSTEMS</b> <input type="checkbox"/> <b>Photos Taken</b>	
Indicate all applicable components below:	
<input type="checkbox"/> Water Softener	<input type="checkbox"/> Iron Filter
<input type="checkbox"/> Reverse Osmosis	<input type="checkbox"/> Sediment Filter
<input type="checkbox"/> UV	<input type="checkbox"/> Chlorination
<input type="checkbox"/> Other (specify)_____	<input type="checkbox"/> Other (specify)_____
<b>WELL VULNERABILITY</b> <input type="checkbox"/> <b>Photos Taken</b>	
<b>Direction of ground slope:</b>	<b>Well head stick-up above ground (inches/centimetres):</b>
<b>Casing condition (cracks, decayed wood, holes, etc.):</b>	<b>Drainage at wellhead (level, mound, even slope, inward ditch, pit?):</b>
<b>Condition of well lid (material, cracks, holes, rotted wood, insects, etc.):</b>	<b>Do livestock/pets have access to wellhead area?:</b>

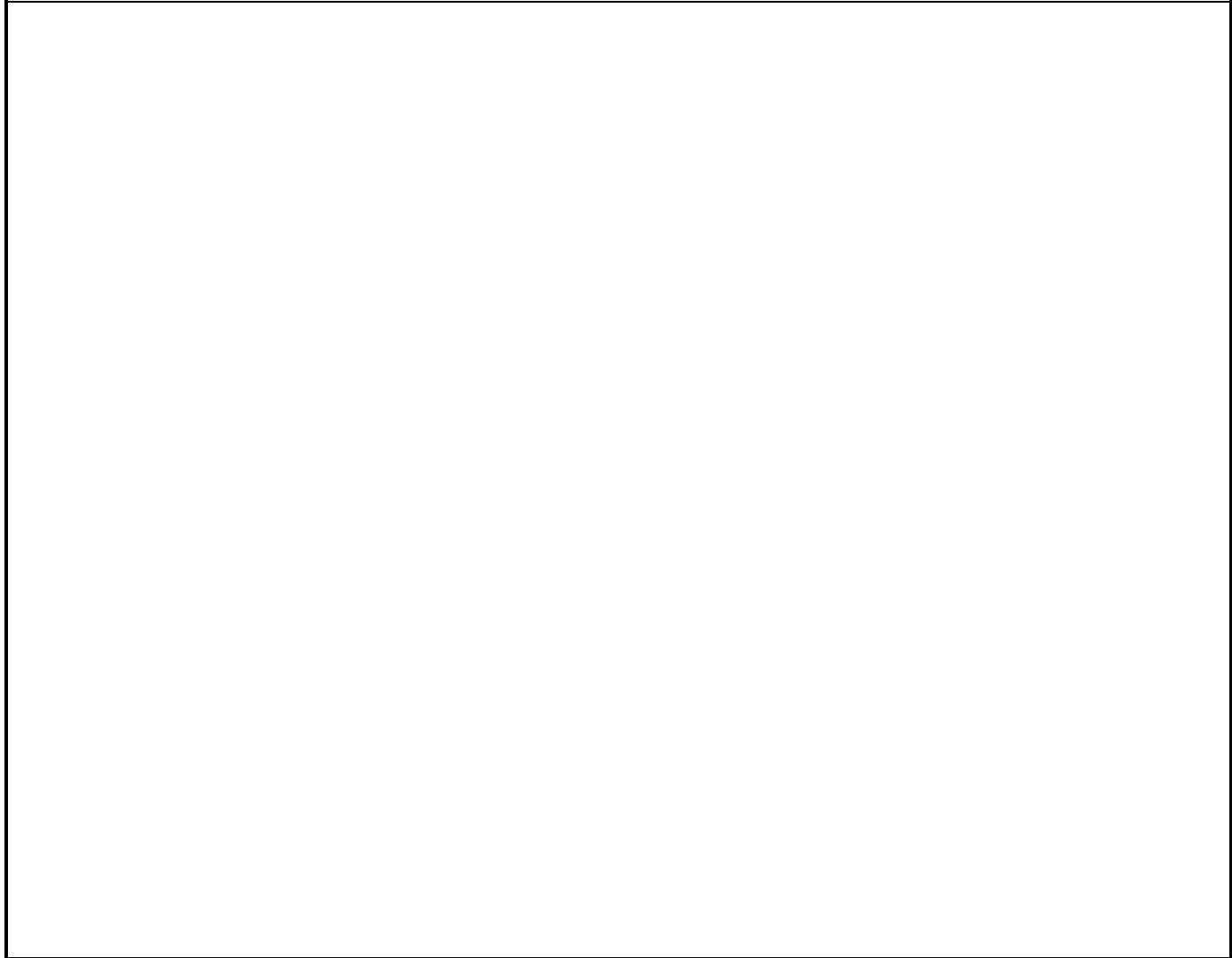
<b>WATER QUALITY HISTORY</b>	
<i>Odour concerns/problems:</i>	<i>Taste concerns/problems:</i>
<i>Colour concerns/problems:</i>	<i>Staining of fixtures or laundry:</i>
<i>Encrustation at fixtures or pipes:</i>	<i>Is the water used for drinking by occupants?</i>
<i>Is there any history with illness associated with the water? Frequency?</i>	<i>Was the water tested for chemistry/microbiology by a laboratory and what were the results?</i>
<i>Has the water quality changed over time?</i>	<i>Additional comments by interviewed well user:</i>
<b>WATER SAMPLING RECORD</b>	
<i>Date and time of sample:</i>	<i>Sampling point:</i>
<i>Confirm sampling point is off-line from treatment systems (Yes/No):</i>	<i>Number of bottles:</i>
<i>Was the water sampled purged before sampling?</i>	<i>If sample water was purged, how much? vol (L) _____ time (min) _____</i>



*DRAFT PROPERTY SKETCH*

**Bring prepared background sketch prior to site visit. In the space provided below, indicate the following features:**

**Property boundary, houses and other buildings, well, septic tank, septic field, road, driveway, north arrow, distances between well and septic field, ground slope direction (downward), ditches, water pipe connections, fuel storage / heating oil tanks, and watercourses, ponds, lakes.**



Completed By: \_\_\_\_\_

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

---

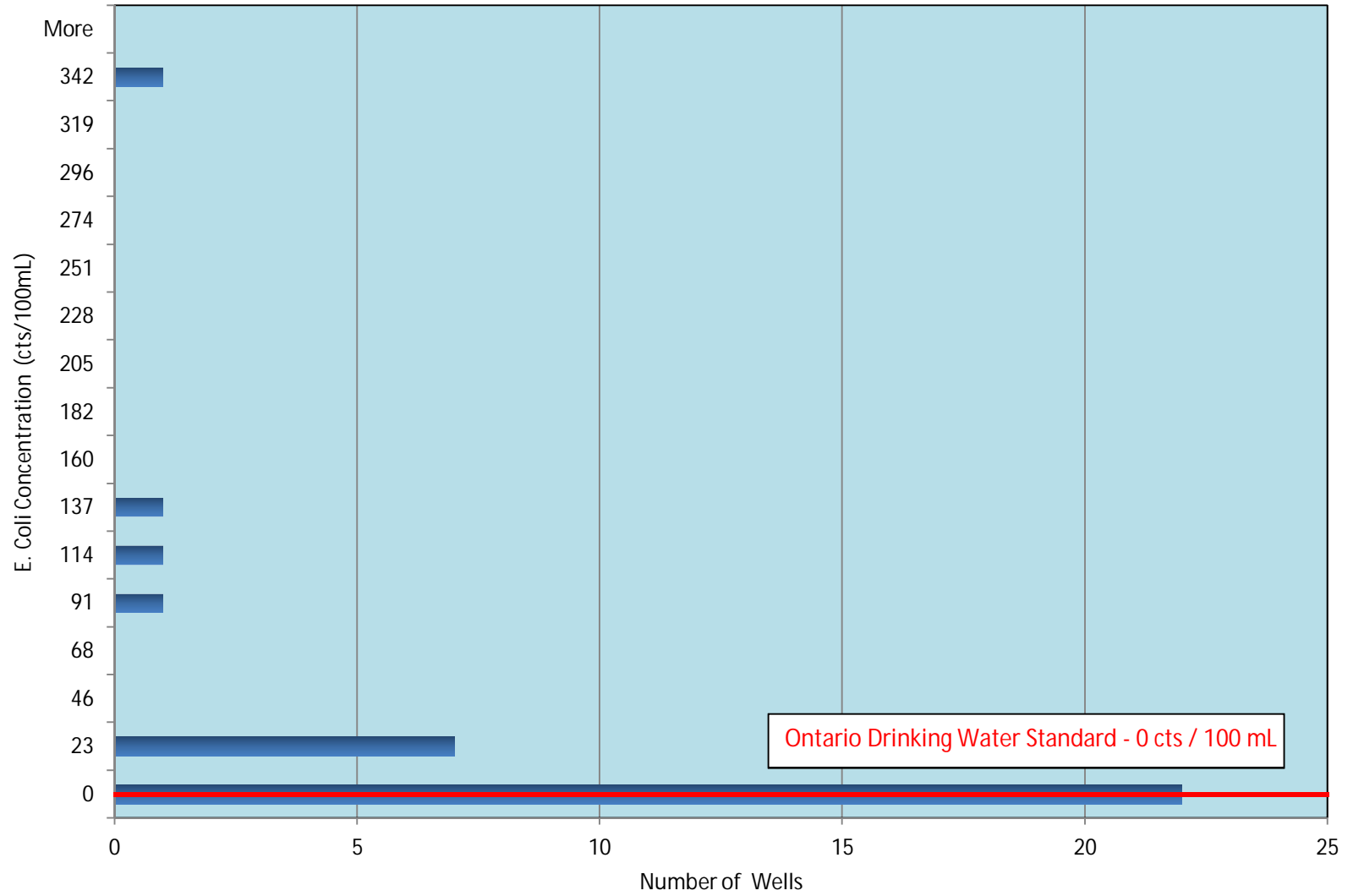
**APPENDIX D**

**WATER QUALITY RESULTS AND ANALYTICAL  
DATA QA/QC EVALUATION**

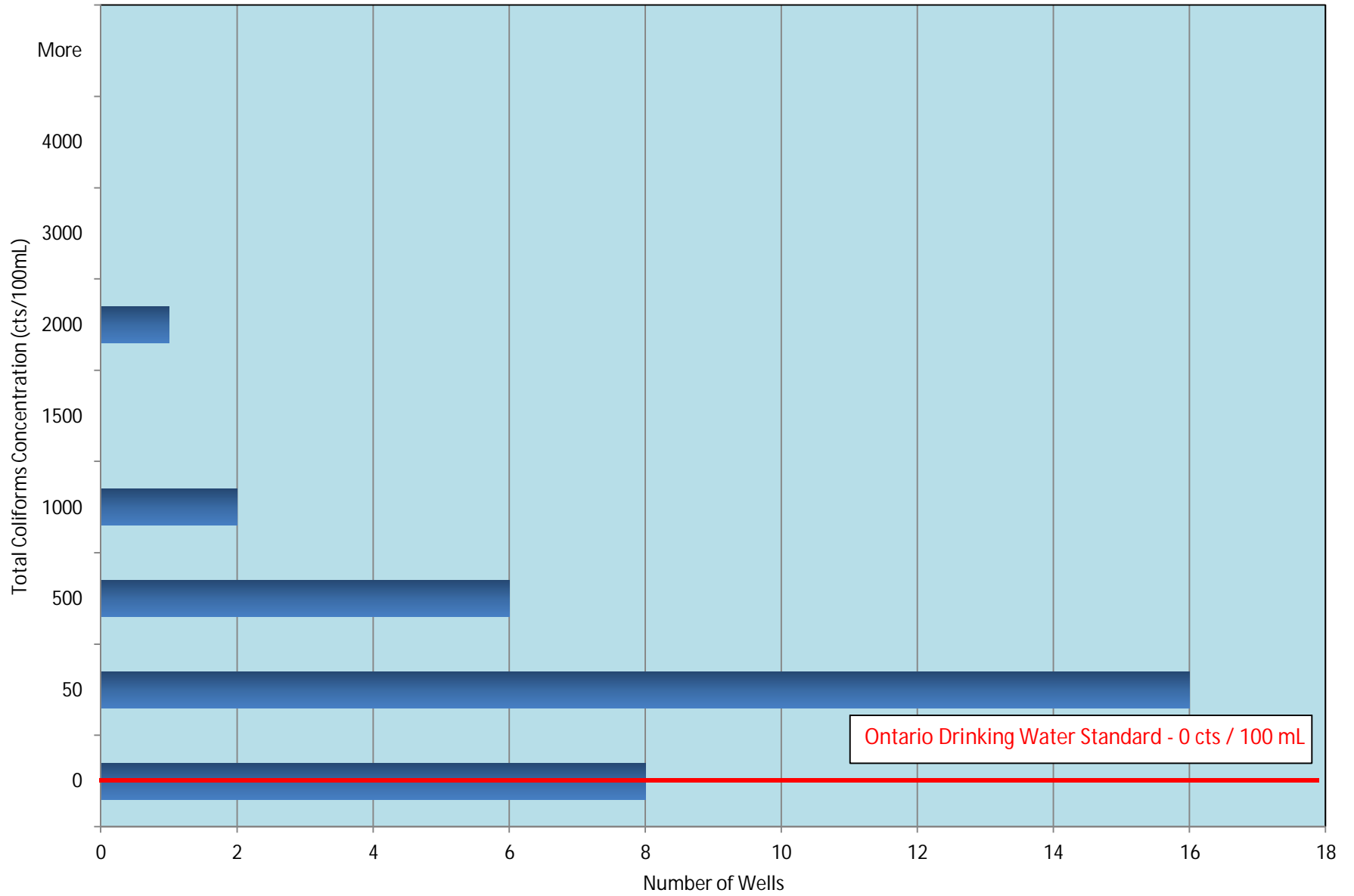
---



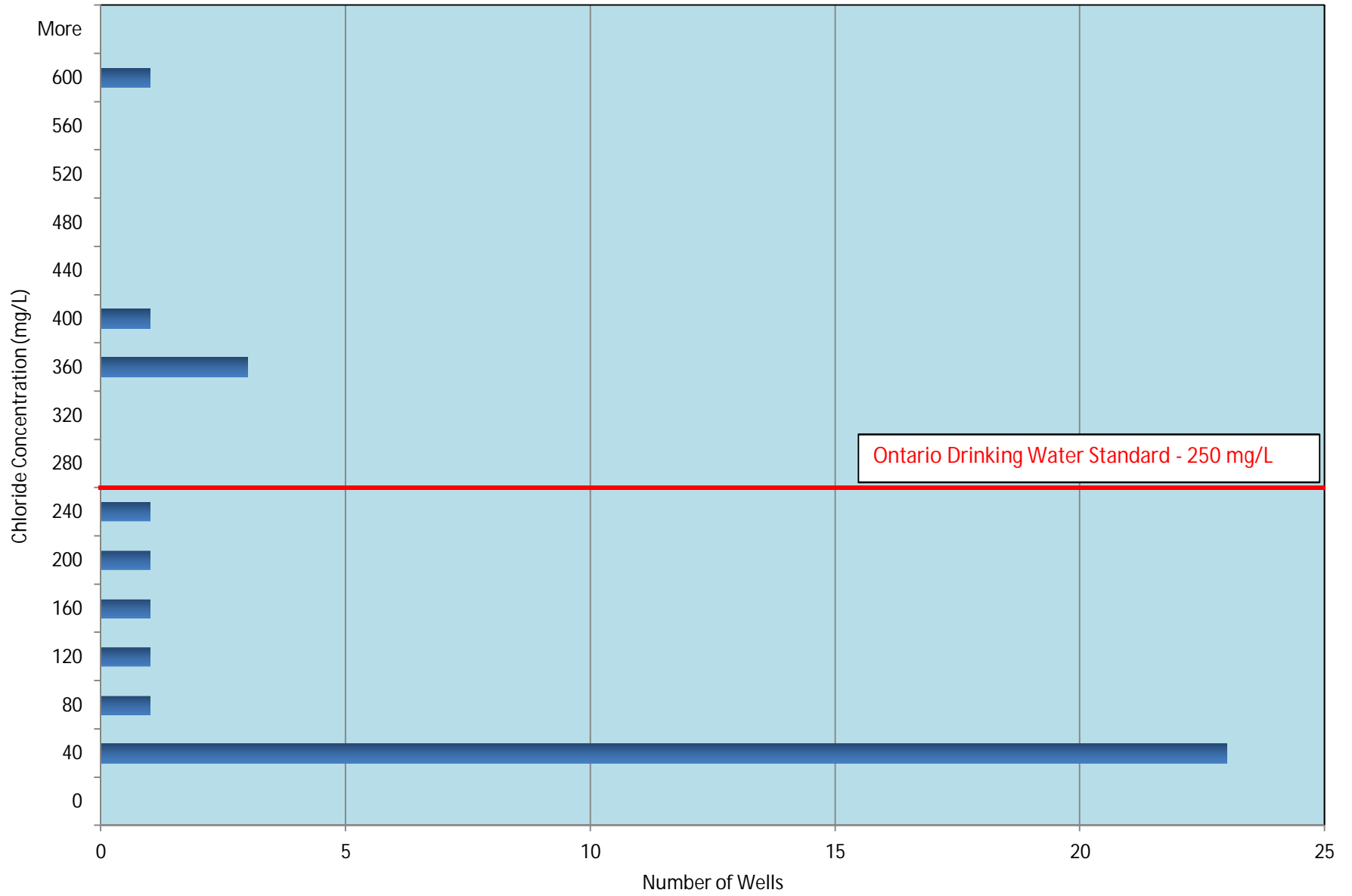
# E.Coli



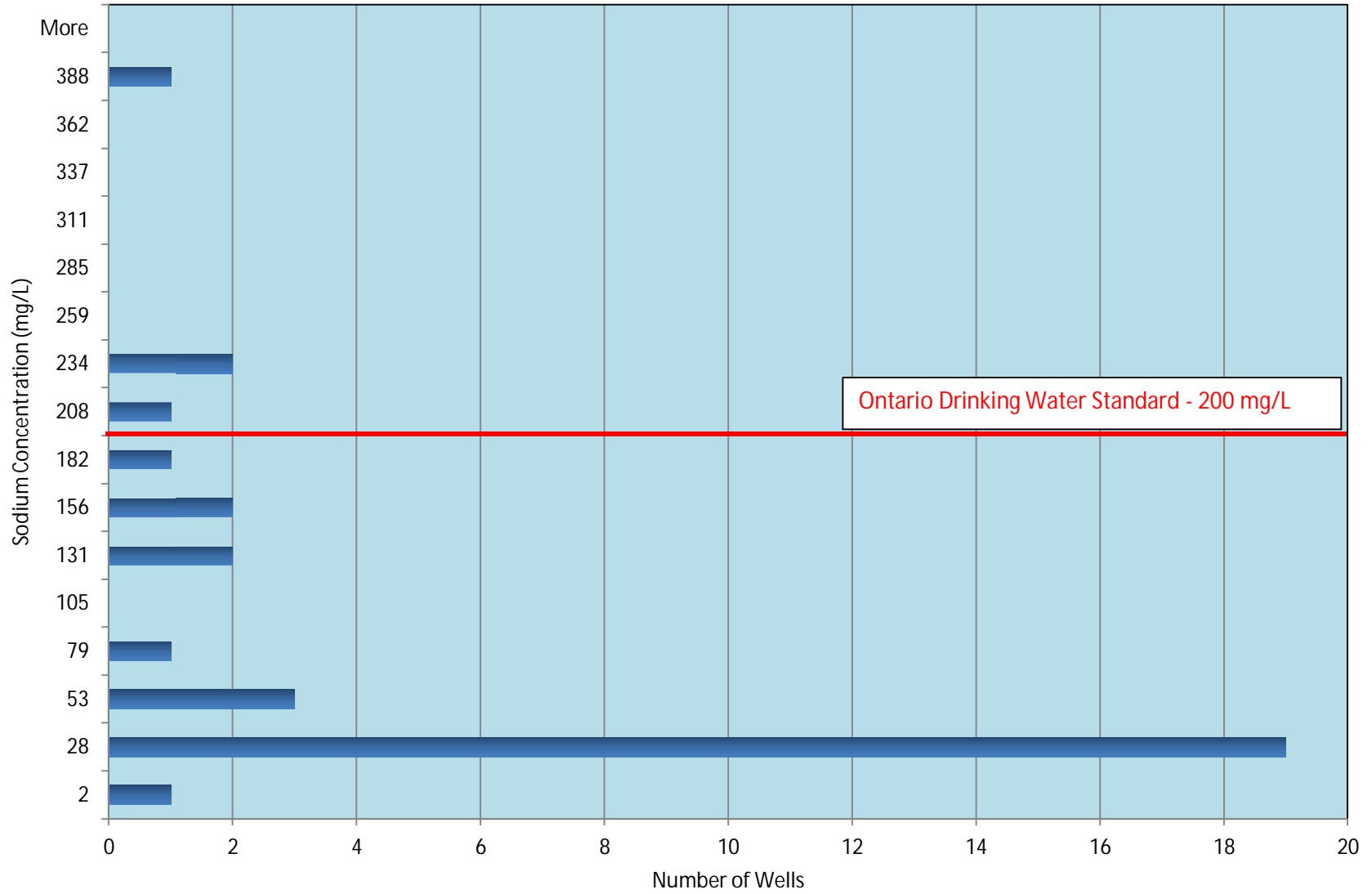
# Total Coliforms



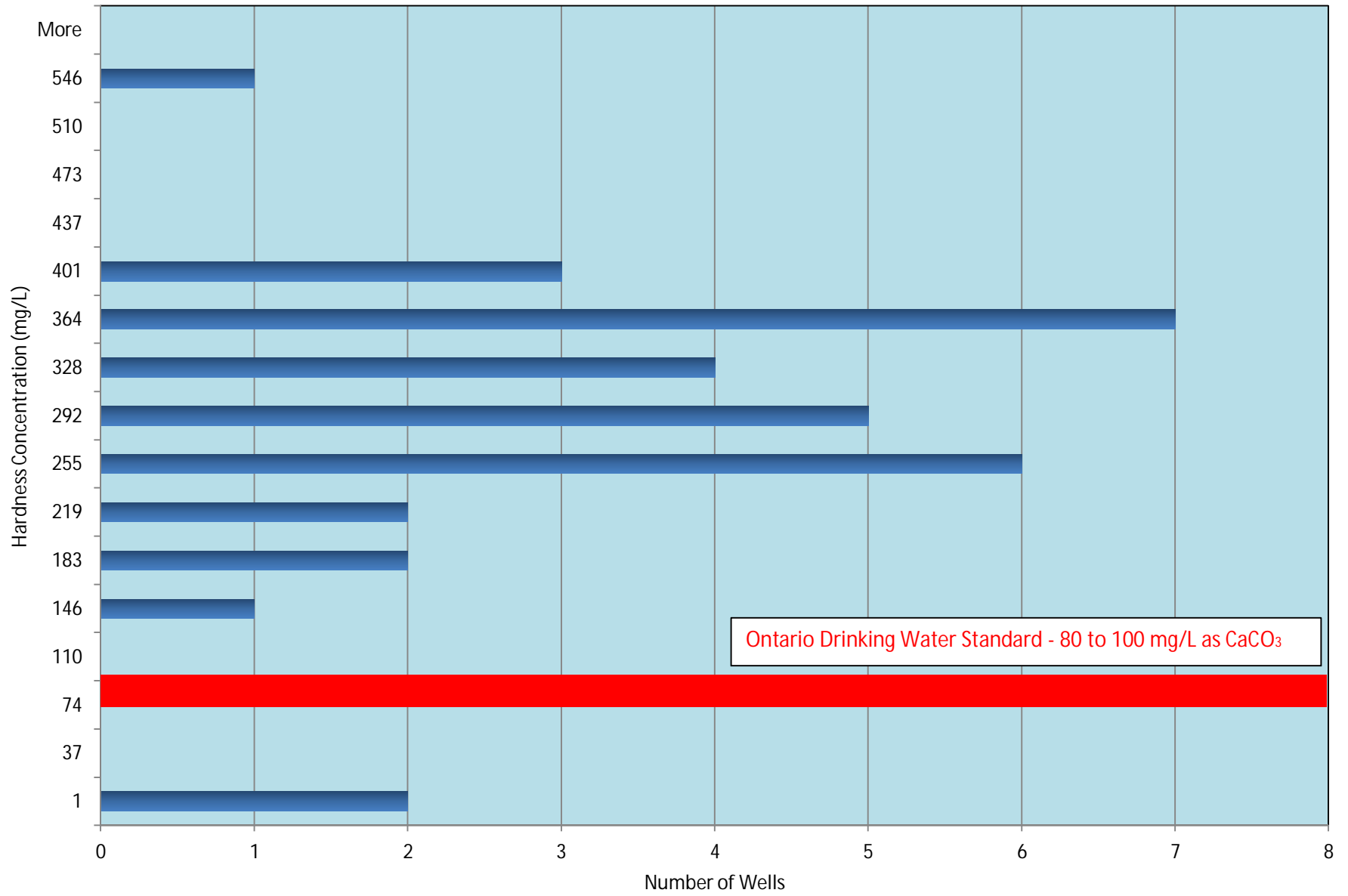
# Chloride



# Sodium

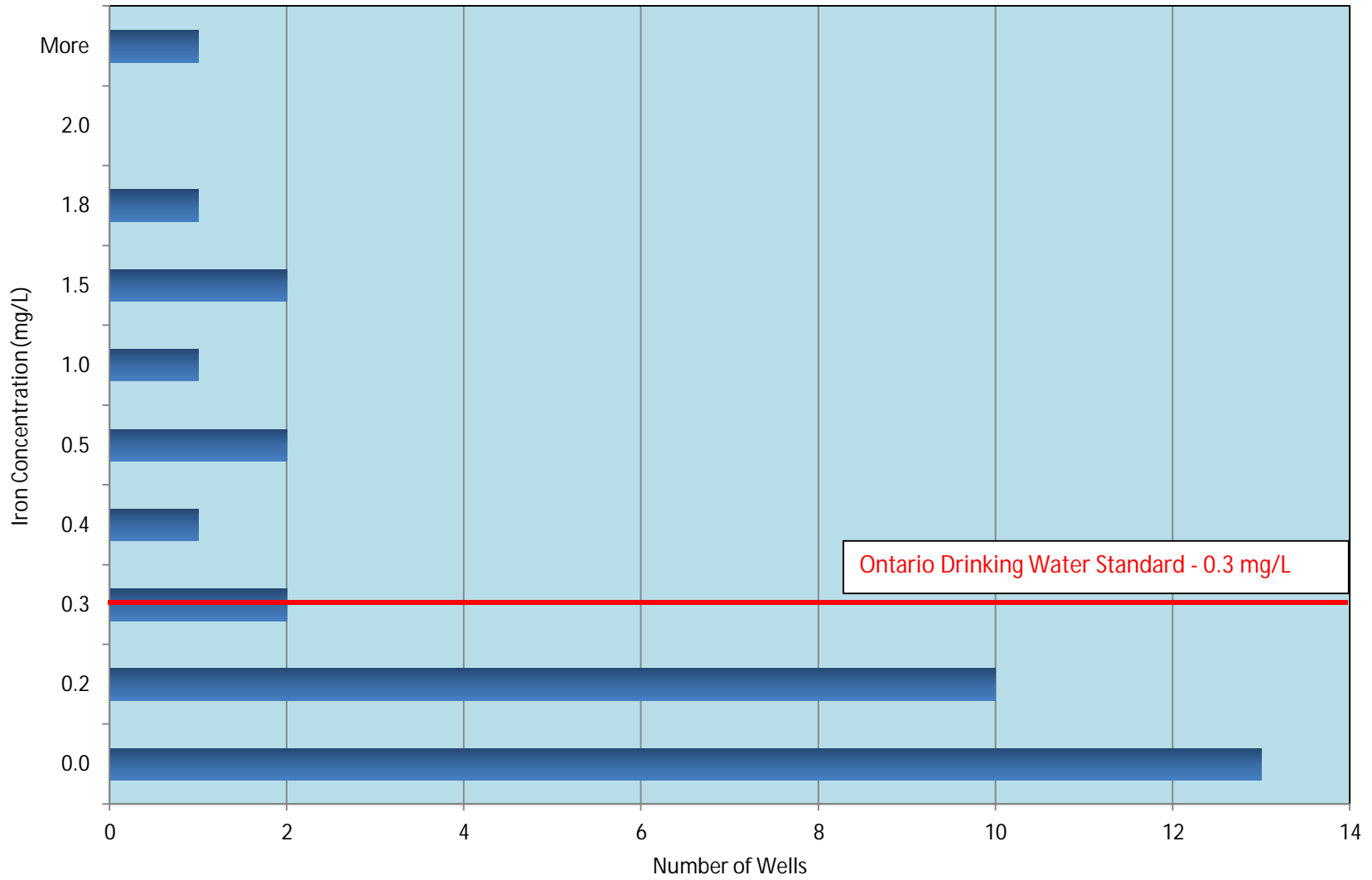


# Hardness

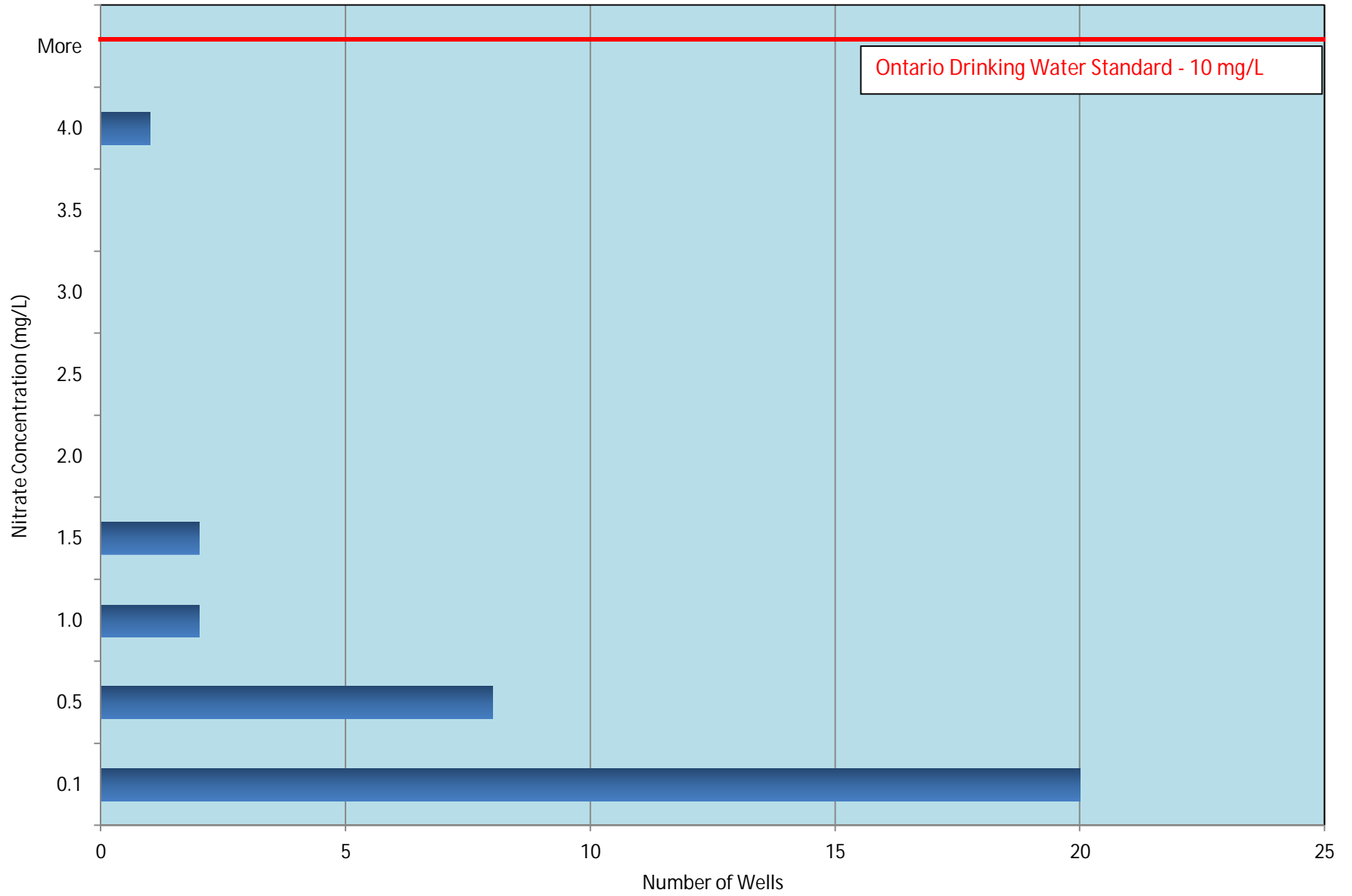




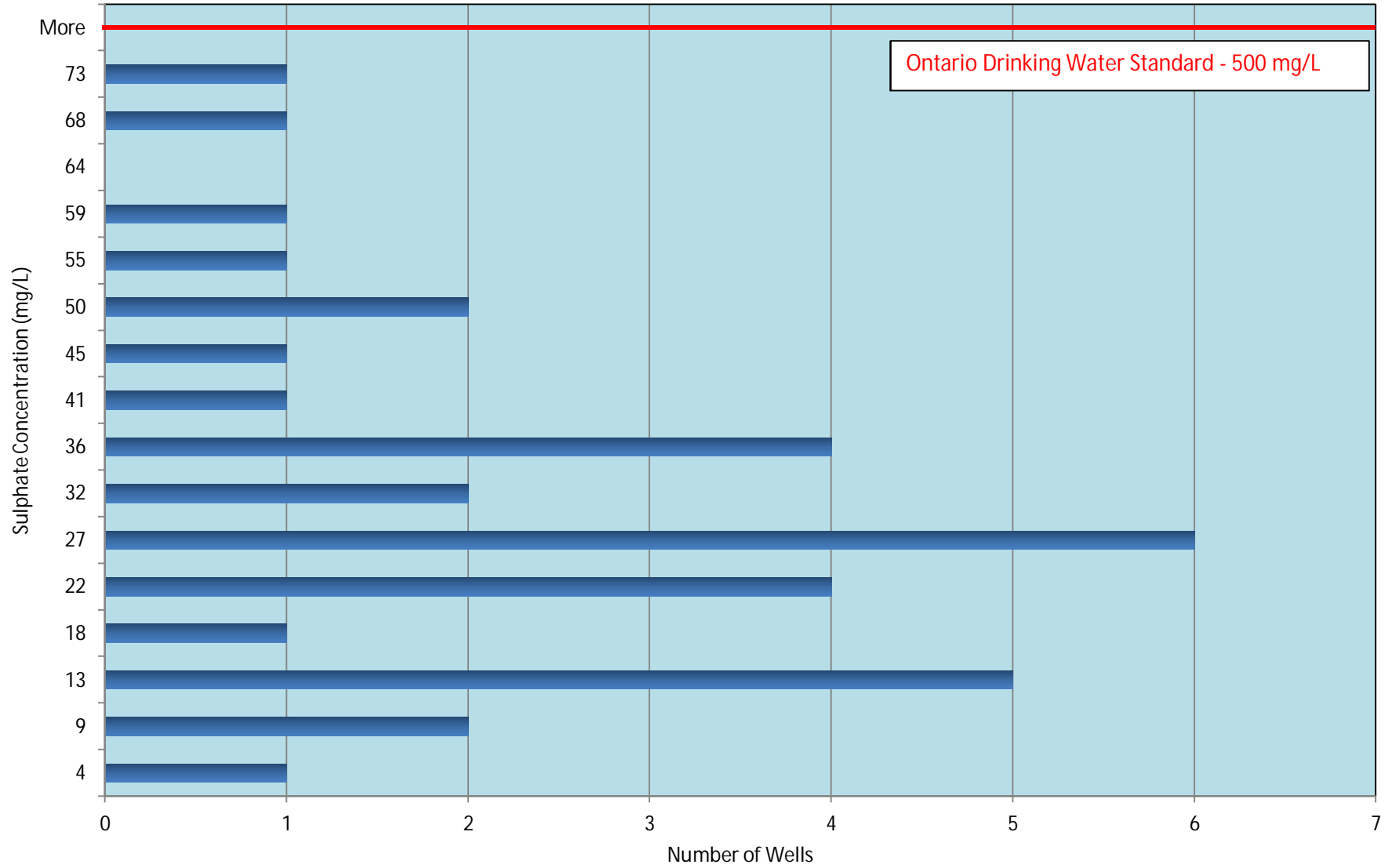
# Iron



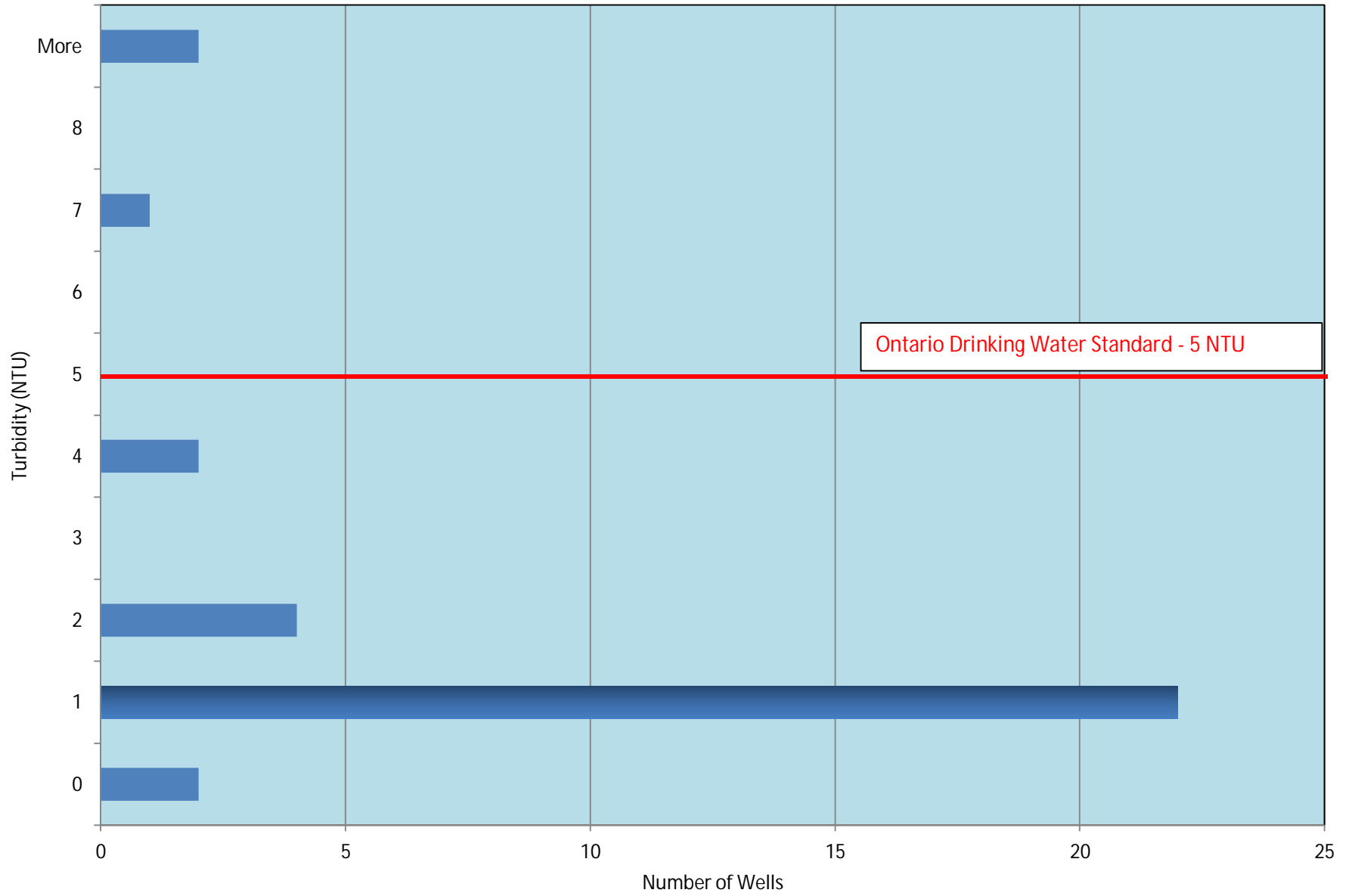
# Nitrates



# Sulphate



# Turbidity





## Groundwater Analytical Results - QA/QC Assessment Kingston Solar LP

Parameter	Units	RDL	ODWS	Site	23	23	RPD
				Laboratory ID	963971	963972	
				Sample Date	6/11/2012	6/11/2012	
<b>Inorganics</b>							
Alkalinity as CaCO3	mg/L	5	30-500 (OG)	373	371	1%	
Chloride	mg/L	1	250 (AO)	6	6	0%	
Colour	TCU	2	5 (AO)	2	3	40%	
Conductivity	uS/cm	5	NV	732	731	0%	
Dissolved Organic Carbon	mg/L	0.5	5 (AO)	3	2.8	7%	
N-NH3 (Ammonia)	mg/L	0.02	NV	0.03	0.03	0%	
N-NO2 (Nitrite)	mg/L	0.1	1 (MAC)	<0.10	<0.10	N/V	
N-NO3 (Nitrate)	mg/L	0.1	10 (MAC)	<0.10	<0.10	N/V	
pH	NV	NV	6.5 - 8.5 (OG)	7.63	7.71	1%	
Sulphate	mg/L	3	500 (AO)	36	36	0%	
Total Dissolved Solids (COND - CALC)	mg/L	1	500 (AO)	476	475	0%	
Turbidity	NTU	0.1	5 (AO)	0.3	0.3	0%	
Hardness as CaCO3	mg/L	1	80-100 (OG)	341	349	2%	
Calcium	mg/L	1	NV	112	115	3%	
Magnesium	mg/L	1	NV	15	15	0%	
Potassium	mg/L	1	NV	2	2	0%	
Sodium	mg/L	2	200 (AO)	16	15	6%	
Iron	mg/L	0.03	0.3 (AO)	0.04	0.05	22%	
Manganese	mg/L	0.01	0.05 (AO)	0.15	0.15	0%	

**RDL** Laboratory Reported Detection Limit

**RPD** Relative Percent Difference

**NV** No Value

**ODWS** Ontario Drinking Water Standards, June, 2003 (Revised, 2006)

MAC (Maximum Acceptable Concentration, AO - Aesthetic Objective; OG - Operational Guidelines

Prepared By: D.Burr



---

**APPENDIX E**  
**LABORATORY CERTIFICATES OF ANALYSIS**

---





Client: Dillon Consulting Limited (London)  
130 Dufferin Ave., Suite 1400  
London, ON  
N6A 5R2  
Attention: Mr. Darin Burr  
PO#:  
Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1478  
Report Number: 1212082  
Date Submitted: 2012-06-15  
Date Reported: 2012-06-20  
Project: Kingston Solar  
COC #: 149766

Dear Darin Burr:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL:

Dragana  
Dzeletovic  
[Redacted Signature]  
2012.06.20  
09:40:53  
-04'00'

Dragana Dzeletovic  
Acting Supervisor, Microbiology

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAF, Ontario Ministry of Agriculture, Food and Rural Affairs(for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.



Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:  
 Invoice to: Dillon Consulting Limited (London)

**Kingston Report:** K12-1478  
**Report Number:** 1212082  
**Date Submitted:** 2012-06-15  
**Date Reported:** 2012-06-20  
**Project:** Kingston Solar  
**COC #:** 149766

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					964461	Water	964462	Water	964463
Microbiology	Escherichia Coli	0	ct/100mL		<20	320	<20	<20	<20
	Total Coliforms	0	ct/100mL		<20	620	<20	20	

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					964465	Water			
Microbiology	Escherichia Coli	0	ct/100mL		<20				
	Total Coliforms	0	ct/100mL		80				

**Guideline =** \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.





Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:  
 Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1478  
 Report Number: 1212156  
 Date Submitted: 2012-06-15  
 Date Reported: 2012-06-22  
 Project: Kingston Solar  
 COC #: 149766

Group	Analyte	MRL	Units	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D. Guideline	964651	964652	964653	964654
					Water	Water	Water	Water
Calculations	Hardness as CaCO3	1	mg/L		383	263	111	356
	TDS (COND - CALC)	1	mg/L		1180	371	211	1190
General Chemistry	Alkalinity as CaCO3	5	mg/L		335	264	99	326
	Cl	1	mg/L		340	7	25	364
	Colour	2	TCU		2	5	2	2
	Conductivity	5	uS/cm		1810	571	325	1830
	DOC	0.5	mg/L		2.2	2.7	2.3	2.3
	N-NO2	0.10	mg/L		<0.10	<0.10	<0.10	<0.10
	N-NO3	0.10	mg/L		<0.10	0.45	0.27	0.40
	pH	1.00			7.97	7.99	8.11	7.98
	SO4	3	mg/L		68	32	21	29
	Turbidity	0.1	NTU		4.0	0.3	0.5	0.2
Metals	Ca	1	mg/L		112	79	33	121
	Fe	0.03	mg/L		0.44	<0.03	0.11	<0.03
	K	1	mg/L		5	<1	1	1
	Mg	1	mg/L		25	16	7	13
	Mn	0.01	mg/L		0.01	<0.01	<0.01	<0.01
	Na	2	mg/L		210	8	13	219
Nutrients	N-NH3	0.02	mg/L		0.12	<0.02	<0.02	<0.02

**Guideline =** \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.



Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1478  
 Report Number: 1212156  
 Date Submitted: 2012-06-15  
 Date Reported: 2012-06-22  
 Project: Kingston Solar  
 COC #: 149766

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Calculations	Hardness as CaCO3	1	mg/L		964655 Water
	TDS (COND - CALC)	1	mg/L		
General Chemistry	Alkalinity as CaCO3	5	mg/L		204
	Cl	1	mg/L		403
	Colour	2	TCU		213
	Conductivity	5	uS/cm		62
	DOC	0.5	mg/L		30
	N-NO2	0.10	mg/L		620
	N-NO3	0.10	mg/L		7.4
	pH	1.00			<0.10
	SO4	3	mg/L		<0.10
	Turbidity	0.1	NTU		8.10
Metals	Ca	1	mg/L		11
	Fe	0.03	mg/L		67
	K	1	mg/L		0.37
	Mg	1	mg/L		2
	Mn	0.01	mg/L		9
	Na	2	mg/L		0.03
Nutrients	N-NH3	0.02	mg/L		37
					0.14

**Guideline =** \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.

Client: Dillon Consulting Limited (London)  
130 Dufferin Ave., Suite 1400  
London, ON  
N6A 5R2  
Attention: Mr. Darin Burr  
PO#:  
Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1668  
Report Number: 1213871  
Date Submitted: 2012-07-05  
Date Reported: 2012-07-06  
Project: Kingston Solar  
COC #: 149944


---

**Dear Darin Burr:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_

 **Krista Quantrill**  
2012.07.06  
13:38:20 -04'00'

Krista Quantrill  
Microbiology Laboratory Supervisor

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAF, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1668  
 Report Number: 1213871  
 Date Submitted: 2012-07-05  
 Date Reported: 2012-07-06  
 Project: Kingston Solar  
 COC #: 149944

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					969339	969340	969341	969342	
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	Water	Water	Water	Water	Water
	Total Coliforms	0	ct/100mL	MAC-0	0	0	0	0	0
					32*	144*	0	0	0

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					969343	969344	969345	969346	
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	Water	Water	Water	Water	Water
	Total Coliforms	0	ct/100mL	MAC-0	0	0	7*	0	0
					60*	1*	18*	6*	6*

Guideline = odWSOG                      \* = Guideline Exceedence  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1668  
 Report Number: 1213871  
 Date Submitted: 2012-07-05  
 Date Reported: 2012-07-06  
 Project: Kingston Solar  
 COC #: 149944

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					969347	969348	969349	969350	
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	Water	Water	Water		Water
	Total Coliforms	0	ct/100mL	MAC-0	0	2*	0		0
					0	14*	2*		2*

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					969351	969352	969353	969354	
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	Water	Water	Water		Water
	Total Coliforms	0	ct/100mL	MAC-0	0	0	0		0
					0	0	2*		14*

**Guideline = odwsog**                      **\* = Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.



Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:  
 Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1668  
 Report Number: 1213871  
 Date Submitted: 2012-07-05  
 Date Reported: 2012-07-06  
 Project: Kingston Solar  
 COC #: 149944

Group	Analyte	MRL	Units	Guideline	969355 Water	969356 Water
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	0	0
	Total Coliforms	0	ct/100mL	MAC-0	1*	1*

Lab I.D.	969355	969356
Sample Matrix	Water	Water
Sample Type		
Sampling Date		
Sample I.D.		

**Guideline = odwsog**                      **\* = Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.



Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1669  
 Report Number: 1213966  
 Date Submitted: 2012-07-05  
 Date Reported: 2012-07-09  
 Project: Kingston Solar  
 COC #: 149946

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	969580 Water	969581 Water
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0		2*	100*
	Total Coliforms	0	ct/100mL	MAC-0		19*	1000*

**Guideline = odWSOG**                      **\* = Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.



Client: Dillon Consulting Limited (London)  
130 Dufferin Ave., Suite 1400  
London, ON  
N6A 5R2  
Attention: Mr. Darin Burr  
PO#:  
Invoice to: Dillon Consulting Limited (London)

Kingston Report: K12-1669  
Report Number: 1213966  
Date Submitted: 2012-07-05  
Date Reported: 2012-07-09  
Project: Kingston Solar  
COC #: 149946

Dear Darin Burr:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL:

 Krista Quantrill  
2012.07.09  
10:05:52 -04'00'

Krista Quantrill  
Microbiology Laboratory Supervisor

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAF, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.



Client: Dillon Consulting Limited (London)  
130 Dufferin Ave., Suite 1400  
London, ON  
N6A 5R2  
Attention: Mr. Darin Burr  
PO#:  
Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1053  
Report Number: 1212002  
Date Submitted: 2012-06-15  
Date Reported: 2012-06-20  
Project: Kingston Solar  
COC #: 753633

**Dear Darin Burr:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

Dragana  
Dzeletovic  
[REDACTED] 2012.06.2  
0 12:02:20  
-04'00'

APPROVAL: \_\_\_\_\_

Dragana Dzeletovic  
Acting Supervisor, Microbiology

Exova (Ottawa) is certified and accredited for specific parameters by:  
CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAF, Ontario Ministry of Agriculture, Food and Rural Affairs(for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1053  
 Report Number: 1212002  
 Date Submitted: 2012-06-15  
 Date Reported: 2012-06-20  
 Project: Kingston Solar  
 COC #: 753633

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.					
					964289	Water				964290	Water			964291
Microbiology	Escherichia Coli	0	ct/100mL		12	2	342	117						
	Total Coliforms	0	ct/100mL		230	81	1900	550						

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					964293	Water			
Microbiology	Escherichia Coli	0	ct/100mL		0				
	Total Coliforms	0	ct/100mL		0				

**Guideline =** \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective.



Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:  
 Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1053  
 Report Number: 1211865  
 Date Submitted: 2012-06-12  
 Date Reported: 2012-06-21  
 Project: Kingston Solar  
 COC #: 149816

Group	Analyte	MRL	Units	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D. Guideline	963966	963967	963968	963969
					Water	Water	Water	Water
Calculations	Hardness as CaCO3	1	mg/L		272	344	232	158
	TDS (COND - CALC)	1	mg/L		368	1050	345	254
General Chemistry	Alkalinity as CaCO3	5	mg/L		292	265	231	176
	Cl	1	mg/L		6	330	19	18
	Colour	2	TCU		2	5	6	40
	Conductivity	5	uS/cm		566	1620	531	390
	DOC	0.5	mg/L		1.7	2.2	1.4	8.3
	N-NO2	0.10	mg/L		<0.10	<0.10	<0.10	<0.10
	N-NO3	0.10	mg/L		<0.10	0.57	0.91	<0.10
	pH	1.00			7.83	7.72	7.83	7.90
	SO4	3	mg/L		18	57	23	5
	Turbidity	0.1	NTU		0.1	0.4	0.2	1.3
Metals	Ca	1	mg/L		86	123	83	50
	Fe	0.03	mg/L		<0.03	<0.03	<0.03	0.45
	K	1	mg/L		<1	1	2	1
	Mg	1	mg/L		14	9	6	8
	Mn	0.01	mg/L		<0.01	<0.01	<0.01	0.09
	Na	2	mg/L		8	190	12	12
Nutrients	N-NH3	0.02	mg/L		<0.02	<0.02	<0.02	0.06

**Guideline =** \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.



Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1053  
 Report Number: 1211865  
 Date Submitted: 2012-06-12  
 Date Reported: 2012-06-21  
 Project: Kingston Solar  
 COC #: 149816

Group	Analyte	MRL	Units	Guideline	Lab I.D.	963970	963971	963972
					Sample Matrix	Water	Water	Water
Calculations	Hardness as CaCO3	1	mg/L			246	341	349
	TDS (COND - CALC)	1	mg/L			318	476	475
General Chemistry	Alkalinity as CaCO3	5	mg/L			239	373	371
	Cl	1	mg/L			3	6	6
	Colour	2	TCU			4	2	3
	Conductivity	5	uS/cm			490	732	731
	DOC	0.5	mg/L			1.6	3.0	2.8
	N-NO2	0.10	mg/L			<0.10	<0.10	<0.10
	N-NO3	0.10	mg/L			<0.10	<0.10	<0.10
	pH	1.00				7.89	7.63	7.71
	SO4	3	mg/L			26	36	36
	Turbidity	0.1	NTU			0.1	0.3	0.3
Metals	Ca	1	mg/L			92	112	115
	Fe	0.03	mg/L			<0.03	0.04	0.05
	K	1	mg/L			<1	2	2
	Mg	1	mg/L			4	15	15
	Mn	0.01	mg/L			<0.01	0.15	0.15
Nutrients	Na	2	mg/L			3	16	15
	N-NH3	0.02	mg/L			<0.02	0.03	0.03

Guideline = \* = Guideline Exceedence  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.





Client: Dillon Consulting Limited (London)  
130 Dufferin Ave., Suite 1400  
London, ON  
N6A 5R2  
Attention: Mr. Darin Burr  
PO#:  
Invoice to: Dillon Consulting Limited (London)

Report Number: 1212164  
Date Submitted: 2012-06-18  
Date Reported: 2012-06-19  
Project: Kingston Solar  
COC #: 149773

Dear Darin Burr:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL:

Dragana  
Dzeletovic  
2012.06.19  
10:55:47  
04'00'

Dragana Dzeletovic  
Acting Supervisor, Microbiology

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAF, Ontario Ministry of Agriculture, Food and Rural Affairs(for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Report Number: 1212164  
 Date Submitted: 2012-06-18  
 Date Reported: 2012-06-19  
 Project: Kingston Solar  
 COC #: 149773

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					964665	964666	964667	964668	
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	0	0	0		78*
	Total Coliforms	0	ct/100mL	MAC-0	0	0	6*		420*

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					964669	964670	964671		
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	1*	0	0		
	Total Coliforms	0	ct/100mL	MAC-0	260*	50*	6*		

**Guideline = odwsog**

**\* = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.

Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective.



Client: Dillon Consulting Limited (London)  
130 Dufferin Ave., Suite 1400  
London, ON  
N6A 5R2  
Attention: Mr. Darin Burr  
PO#:  
Invoice to: Dillon Consulting Limited (London)

Report Number: 1212221  
Date Submitted: 2012-06-18  
Date Reported: 2012-06-26  
Project: Kingston Solar  
COC #: 149773

Dear Darin Burr:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL:

 Lorna Wilson  
2012.06.26  
10:20:44 -04'00'

Lorna Wilson  
Inorganic Laboratory Supervisor

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAF, Ontario Ministry of Agriculture, Food and Rural Affairs(for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Report Number: 1212221  
 Date Submitted: 2012-06-18  
 Date Reported: 2012-06-26  
 Project: Kingston Solar  
 COC #: 149773

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Calculations	Hardness as CaCO3	1	mg/L		964807 Water
	TDS (COND - CALC)	1	mg/L		<1
General Chemistry	Alkalinity as CaCO3	5	mg/L		404
	Cl	1	mg/L		284
	Colour	2	TCU		14
	Conductivity	5	uS/cm		9
	DOC	0.5	mg/L		621
	N-NO2	0.10	mg/L		3.3
	N-NO3	0.10	mg/L		<0.10
	pH	1.00			<0.10
	SO4	3	mg/L		7.88
	Turbidity	0.1	NTU		24
Metals	Ca	1	mg/L		0.3
	Fe	0.03	mg/L		<1
	K	1	mg/L		<0.03
	Mg	1	mg/L		<1
	Mn	0.01	mg/L		<0.01
Nutrients	Na	2	mg/L		146
	N-NH3	0.02	mg/L		<0.02

**Guideline =**                      \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Report Number: 1212221  
 Date Submitted: 2012-06-18  
 Date Reported: 2012-06-26  
 Project: Kingston Solar  
 COC #: 149773

Group	Analyte	MRL	Units	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D. Guideline	964808	964809	964810	964811
					Water	Water	Water	Water
Calculations	Hardness as CaCO3	1	mg/L		276	153	332	370
	TDS (COND - CALC)	1	mg/L		643	251	510	515
General Chemistry	Alkalinity as CaCO3	5	mg/L		266	174	369	361
	Cl	1	mg/L		132	17	22	16
	Colour	2	TCU		8	58	7	6
	Conductivity	5	uS/cm		989	386	784	792
	DOC	0.5	mg/L		3.6	8.4	5.2	3.0
	N-NO2	0.10	mg/L		<0.10	<0.10	<0.10	<0.10
	N-NO3	0.10	mg/L		<0.10	<0.10	0.31	<0.10
	pH	1.00			7.99	8.05	8.00	7.92
	SO4	3	mg/L		34	4	27	51
	Turbidity	0.1	NTU		1.1	1.9	0.3	0.5
Metals	Ca	1	mg/L		79	54	118	117
	Fe	0.03	mg/L		0.21	1.13	<0.03	0.08
	K	1	mg/L		10	2	5	3
	Mg	1	mg/L		19	10	9	19
	Mn	0.01	mg/L		<0.01	0.08	<0.01	0.02
	Na	2	mg/L		66	12	29	15
Nutrients	N-NH3	0.02	mg/L		0.51	0.09	<0.02	0.03

**Guideline =** \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Report Number: 1212221  
 Date Submitted: 2012-06-18  
 Date Reported: 2012-06-26  
 Project: Kingston Solar  
 COC #: 149773

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Calculations	Hardness as CaCO3	1	mg/L		964812 Water
	TDS (COND - CALC)	1	mg/L		<1
General Chemistry	Alkalinity as CaCO3	5	mg/L		332
	Cl	1	mg/L		223
	Colour	2	TCU		24
	Conductivity	5	uS/cm		8
	DOC	0.5	mg/L		510
	N-NO2	0.10	mg/L		2.4
	N-NO3	0.10	mg/L		<0.10
	pH	1.00			<0.10
	SO4	3	mg/L		8.30
	Turbidity	0.1	NTU		10
Metals	Ca	1	mg/L		0.3
	Fe	0.03	mg/L		<1
	K	1	mg/L		<0.03
	Mg	1	mg/L		<1
	Mn	0.01	mg/L		<1
	Na	2	mg/L		<0.01
Nutrients	N-NH3	0.02	mg/L		120
					0.02

**Guideline =**                      \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.



Client: Dillon Consulting Limited (London)  
130 Dufferin Ave., Suite 1400  
London, ON  
N6A 5R2  
Attention: Mr. Darin Burr  
PO#:  
Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1069  
Report Number: 1211831  
Date Submitted: 2012-06-12  
Date Reported: 2012-06-27  
Project: Kingston Solar  
COC #: 149764

Dear Darin Burr:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL:

Dragana  
Dzeletovic  
2012.06.27  
16:17:24 -04'00'

Dragana Dzeletovic  
Acting Supervisor, Microbiology

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAF, Ontario Ministry of Agriculture, Food and Rural Affairs(for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1069  
 Report Number: 1211831  
 Date Submitted: 2012-06-12  
 Date Reported: 2012-06-27  
 Project: Kingston Solar  
 COC #: 149764

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					963883	Water	963884	Water	963885
Microbiology	Escherichia Coli	0	ct/100mL		0	4	OG	OG	
	Total Coliforms	0	ct/100mL		35	15	OG	OG	

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					963887	Water	963888	Water	963889
Microbiology	Escherichia Coli	0	ct/100mL		OG	OG	OG		
	Total Coliforms	0	ct/100mL		OG	OG	OG		

**Guideline =**                      **\* = Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.





Client: Dillon Consulting Limited (London)  
130 Dufferin Ave., Suite 1400  
London, ON  
N6A 5R2  
Attention: Mr. Darin Burr  
PO#:  
Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1069  
Report Number: 1211922  
Date Submitted: 2012-06-13  
Date Reported: 2012-06-21  
Project: Kingston Solar  
COC #: 149764

Dear Darin Burr:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

Lorna Wilson  
2012.06.21  
16:48:18  
-04'00'

APPROVAL: \_\_\_\_\_

Lorna Wilson  
Inorganic Laboratory Supervisor

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAF, Ontario Ministry of Agriculture, Food and Rural Affairs(for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:   
 Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1069  
 Report Number: 1211922  
 Date Submitted: 2012-06-13  
 Date Reported: 2012-06-21  
 Project: Kingston Solar  
 COC #: 149764

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					964120	964121	964122	964123	
Calculations	Hardness as CaCO3	1	mg/L		Water	Water	Water	Water	
	TDS (COND - CALC)	1	mg/L		302	254	257	386	
General Chemistry	Alkalinity as CaCO3	5	mg/L		366	354	382	1880	
	Cl	1	mg/L		287	267	277	431	
	Colour	2	TCU		2	5	17	590	
	Conductivity	5	uS/cm		2	2	6	7	
	DOC	0.5	mg/L		563	544	587	2900	
	N-NO2	0.10	mg/L		1.7	2.5	3.6	4.9	
	N-NO3	0.10	mg/L		<0.10	<0.10	<0.10	<0.10	
	pH	1.00			<0.10	<0.10	0.36	<0.10	
	SO4	3	mg/L		8.10	8.10	8.02	7.98	
	Turbidity	0.1	NTU		22	23	16	73	
Metals	Ca	1	mg/L		0.6	8.4	0.8	8.1	
	Fe	0.03	mg/L		98	77	83	125	
	K	1	mg/L		0.15	0.98	0.15	1.07	
	Mg	1	mg/L		2	4	2	<1	
	Mn	0.01	mg/L		14	15	12	18	
	Na	2	mg/L		0.08	<0.01	0.03	1.41	
Nutrients	N-NH3	0.02	mg/L		4	11	16	388	
					0.03	0.17	0.08	0.05	

**Guideline =** \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.

Client: Dillon Consulting Limited (London)  
 130 Dufferin Ave., Suite 1400  
 London, ON  
 N6A 5R2  
 Attention: Mr. Darin Burr  
 PO#:  
 Invoice to: Dillon Consulting Limited (London)

Niagara Report: N12-1069  
 Report Number: 1211922  
 Date Submitted: 2012-06-13  
 Date Reported: 2012-06-21  
 Project: Kingston Solar  
 COC #: 149764

Group	Analyte	MRL	Units	Guideline	Lab I.D.		
					Sample Matrix	Sample Type	Sampling Date
					964124 Water	964125 Water	964126 Water
Calculations	Hardness as CaCO3	1	mg/L		349	216	321
	TDS (COND - CALC)	1	mg/L		884	318	578
General Chemistry	Alkalinity as CaCO3	5	mg/L		303	216	276
	Cl	1	mg/L		207	20	109
	Colour	2	TCU		10	21	5
	Conductivity	5	uS/cm		1360	489	889
	DOC	0.5	mg/L		3.4	4.2	2.7
	N-NO2	0.10	mg/L		<0.10	<0.10	<0.10
	N-NO3	0.10	mg/L		3.64	<0.10	<0.10
	pH	1.00			8.13	8.09	8.03
	SO4	3	mg/L		47	13	9
	Turbidity	0.1	NTU		1.8	6.8	0.5
Metals	Ca	1	mg/L		120	75	104
	Fe	0.03	mg/L		0.14	2.09	<0.03
	K	1	mg/L		6	1	2
	Mg	1	mg/L		12	7	15
	Mn	0.01	mg/L		0.01	0.54	<0.01
	Na	2	mg/L		131	12	47
Nutrients	N-NH3	0.02	mg/L		<0.02	0.06	<0.02

**Guideline =** \* = **Guideline Exceedence**  
 Results relate only to the parameters tested on the samples submitted.  
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational  
 Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum  
 Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality  
 Guideline, IPWQO = Interim Provincial Water Quality Objective.

**APPENDIX I**  
**COMMUNITY CORRESPONDENCE**

APPENDIX I: PUBLIC COMMENT AND RESPONSE SUMMARY TABLE

Date	Contact Type	Comment	Response	Response Date
28-Jul-11	Phone Call	Stakeholder received the Notice. His land is outside of the boundary but would like to be considered for the Project west of Hwy 38.	AMEC indicated that the Project is currently confined to the boundary defined. Recommended the stakeholder to come to the Open House.	28-Jul-11
28-Jul-11	Phone Call	Stakeholder expressed concerned after receiving the Notice that his land property was shown within the boundary but was not considered part of the Project.	Indicated that the boundary refers to the overall study area.	28-Jul-11
8-Aug-11	E-mail	A landowner inquired who to contact to provide comments on the Project.	Contact information was provided.	8-Aug-11
8-Aug-11	E-mail	Individual inquired who to contact regarding the search of artifacts in the area of interest for the project.	Kingston Solar LP spoke with the individual and provided contact information.	8-Aug-11
9-Aug-11	Phone Call	Individual called with concerns about ploughing as the need for ploughing was not addressed when the lease was signed.	Individual was assured that the project would still allow haying and pasturing.	9-Aug-11
15-Aug-11	E-mail	Individual sent request to correct their mailing address	N/A - Correction made	N/A
22-Sep-11	E-mail	<ol style="list-style-type: none"> <li>1. How does Samsung recycle the used or broken solar panels? Do you have a plan for in 15-20 years when they are worn out? What if a panel is broken in the field? I will be living right across from them. Reading on line there is some harmful green house gasses (Silicon, cadmium, selenium, sulfur hexafluoride and many others) in them. Will you supply local residence with a MSDS sheet? Does the gas become a solid mixed with air? And if so then possible ground pollution.</li> <li>2. I was informed at your open house that fencing would be place around the solar fields. What about animal routes to water and breeding grounds (Snapping turtles)?</li> <li>3. As your Whippoorwill Will study how long should a person sit in the car and listen for a Whippoorwill Will before moving on. I ask this because a car pulled up in front of my house at dusk one night. I observed someone get out of the car. I went to my door and &amp; yelled out can I help you. The person then turned and got back into their car and left. I got in my truck and followed (we were having a problem with break-ins and people throwing garbage into people's fields). The car pulled over around the corner I pulled up and that is when they told me they were doing a study for Samsung. The total time the car was in front of my house was no more than 50 seconds. Just so you are aware I will be contacting my local MNR and CRCA. About how long a study wait should be.</li> <li>4. Is Samsung going to plant any trees as to block the view of the solar panels? You have dug test holes across from my home. I built my home to see trees animals and hay blowing in the wind. Not an ocean of solar panels with high fencing and barb wire on top. If you plant a forty foot deep berm with pine trees down the road side, I think we might both win. And the trees can maybe help off-set the potent green house gases that are in in solar panels as some described in question 1. Also I won't have my home value drop do to the solar panels as not everyone wants to look at them and your solar panels are further of the road as to not be damaged. By passersby trying to throw stones at them. (When I looked @ a micro kit for my property my insurance company wanted the solar panels to be installed 200 + feet away from the road so as someone could not throw stones at them). Ontario has a great 1,000,000 a year reforestation program. They plant and spray the trees very economically. I have planted 6500 trees to date on my land.</li> <li>5. Is Samsung aware that in a lot of the fields are ditches that cannot be relocated as it may flood another farmers field. Same as the ditch in the field across from my home has a ditch in it that is protected by the CRCA I do believe.</li> </ol>	<ol style="list-style-type: none"> <li>1. Used or broken panels will be recycled or disposed of at an approved facility. If a panel is broken in the field it will be removed, disposed of as above, and replaced. If a MSDS sheet is available, it can provided.</li> <li>2. While fencing will surround the individual solar array locations, alternate animal movement routes are available in the area.</li> <li>3. Whip-poor-will point counts typically take under 60 seconds at each survey station.</li> <li>4. Kingston Solar LP has modified the layout to provide a greater distance between the solar arrays and residences in this area of the project. Planting of trees will be assessed during the detailed design phase.</li> <li>5. Ditches and stormwater control will be further defined during the detailed design phase.</li> </ol>	Throughout the Project study and planning stages.
19-Oct-11	Phone Call	Stakeholder wanted to know about the timing for all the required studies. Stakeholder reiterated she has nothing against the project but it will be in her 'front yard' and wondered about screening. She heard about the possibility of berms and trees as solar panels on their own look too industrial.	AMEC provided a general overview of field studies to be conducted	19-Oct-11
21-Oct-11	E-mail	<p>Landowner sent email to confirm receipt of letter from project team requesting access to their property. Landowner provided permission based on a number of conditions:</p> <ol style="list-style-type: none"> <li>1. Please call us in advance and advise when they will be on the property.</li> <li>2. Please ensure they leave nothing behind. We were lucky enough to have an AMEC employee leave her empty box from the original notifications in our recycling box. Unfortunately, it was a windy day and she couldn't be bothered to break down the cardboard box and put it in properly so we got to chase it through the scrub brush.</li> <li>3. Be advised that we will not accept any liability for injury or loss while on the property. All persons enter at their own risk and only for the stated purpose.</li> </ol> <p>As a side note, you may want to reconsider the wording of the letter. It starts out asking for permission to enter but continues on as if the entry will proceed; permission or not. There really isn't any information on how to grant or deny permission which leaves one with the impression that it really isn't a choice.</p>	<ol style="list-style-type: none"> <li>1. Landowners were notified in advance of property surveys.</li> <li>2. All project consultants and contractors were made aware that all wastes generated during the project are to be removed from the project area.</li> <li>3. Comment noted.</li> </ol>	Throughout the field studies phase of the Project.
24-Oct-11	E-mail	Acknowledged receipt of letter from Samsung on Friday. Asking permission to come on land with AMEC to do a plant and wildlife surveys. The answer is no, you and AMEC or any other person working with Samsung in regards to the Kingston Solar LP do not have my permission to come on my land. And I have informed my neighbours that you are not allowed on my land. And Mr. Moore's why is it that I have not heard from Samsung in regards to the email I sent on Sept 22/11?	No response required.	N/A
25-Oct-11	E-mail	Individual emailed to acknowledge receipt of letter requesting access to property for survey by AMEC. Individual responded on behalf of property owner (father) to deny access to property for surveys and request that all inquiries be addressed to the tenant.	No response required.	N/A
26-Oct-11	E-mail	Email from landowner granting permission to access their property. Written in response to a letter requesting permission to access their land.	No response required.	N/A

APPENDIX I: PUBLIC COMMENT AND RESPONSE SUMMARY TABLE

Date	Contact Type	Comment	Response	Response Date
31-Oct-11	E-mail	<p>Follow-up on September 23 unanswered questions and provided additional questions.</p> <ol style="list-style-type: none"> <li>1. How many Solar Panels does this project require? In my math it is about 2,128,000.</li> <li>2. Does Ontario have a recycle program for Solar Panels.(In one article I read they say 8% of Solar Panels are damaged or leaking from transit. If that is the case about 170,240 solar panels will be broken or leaking) That's a lot of panels to recycle.</li> <li>3. And I am really concerned about the gases in solar panels and if they are leaking is my families health @ risk ?</li> </ol>	<p>Kingston Solar LP proposed a meeting with local neighbours. (Individual responded that the preference would be to receive answers in writing).</p>	31-Oct-11
2-Nov-11	E-mail	<p>Email from concerned landowner on Quabbin Road in Kingston. After reviewing the Project Description, the individual has questions they would like to pose to a project team member.</p>	<p>The Project Team has been available to address questions and concerns.</p>	Throughout the Project study and planning stages.
4-Nov-11	E-mail	<p>Individual thanking a member of the project team for a past phone meeting. Individual providing a record of concerns and requesting a response to their email.</p> <ol style="list-style-type: none"> <li>1) What are you proposing as a buffer so that I am not looking out at 50 acres of solar panels and your fencing - I would suggest a treeline with trees that are green from top/bottom (pine/spruce) that are purchased and planted almost full grown so that I see trees along your fence line and nothing beyond. I also wonder if it is necessary that you bring the project right to the road but rather start 100 feet back so that the project does not begin "right in my face".</li> <li>2) In the City of Kingston our properties are pretty much the very end of the woodlands. There are not many trees left AND within the boundaries of your proposal there are a few areas with a number of trees. One of these fields is across from my home. Are you planning on coming in and taking down the rows of trees? Two sides of the 20 acres directly across from my front door without looking to the left or to the right are rows of these trees. Will these trees be destroyed to accommodate your project?</li> <li>3) Is there a "reflection study and report" being done. This is an issue that I am just beginning to look at and so don't know today exactly what my concerns are but I will certainly be back to you on the issue. The Town of Greater Napanee has hired a consultant to provide a report on the possible effects (proposed project in their town). I understand that these are to absorb not reflect so I am not sure why Napanee feels this study is absolutely essential.</li> <li>4) My neighbours and I have hired an Appraiser to prepare a report for us on the effect this will have on the value of our property. This became necessary when a deal on a 2 acre property fell through and the potential buyer stated that he was not building where he would be looking at solar panels all around him.</li> </ol>	<ol style="list-style-type: none"> <li>1. During the detailed design phase of the project, Kingston Solar LP will review setbacks and landscaping on a case-by-case basis.</li> <li>2. The Project layout is in the process of being finalized and specific locations within the Study Area have not been confirmed pending completion of natural heritage and archaeological studies.</li> <li>3. A reflection study and report is not being considered at this time.</li> <li>4. Comment noted.</li> </ol>	Throughout the Project study and planning stages.
10-Nov-11	E-mail	<p>Son provided consent for the studies to take place.</p>	<p>No response required.</p>	N/A
21-Nov-11	E-mail	<p>If the natural drainage of the surrounding lands are changed what is the impact to my well? My business relies on the well to water the horses (also serves the house) which I use approx 800-900 gallons per day. Are you going to use pesticides to keep the vegetation down? Property values are my concern also. I recently had my house appraised. Is the project going to lower my property value? Are you going to tree the property line? Will the solar panels that are going directly south of me going to be set back from the road?</p>	<ul style="list-style-type: none"> <li>• Natural drainage patterns will be maintained. No herbicides will be used to control vegetation.</li> <li>• There is currently no information available on the effect of solar projects on property values.</li> <li>• During the detailed design phase of the project, Kingston Solar LP will review landscaping on a case-by-case basis.</li> </ul>	Throughout the Project study and planning stages.
22-Nov-11	Meeting	<ol style="list-style-type: none"> <li>1. What happens if drinking water is affected from panel installations and/or blasting? Natural water drainage?</li> <li>2. Herbicides/pesticides – will Samsung use these? Will there be a horticulturist and/or Arborist used to determine what growth (if any) will be used?</li> <li>3. Will solar panels be harmful to me and my family (concerns about his young daughter).</li> <li>4. Is Samsung willing to draft a letter stating that we are committed to working with everyone?</li> <li>5. What is the definition of "Adjacent Landowner"?</li> <li>6. Is Samsung willing to do "personalized reports" for each landowner in the project area?</li> <li>7. Is Samsung willing to have a group breakfast/lunch meeting with all adjacent landowners?</li> <li>8. What are the limits of the panels (i.e. setback from roads?) Can you release a preliminary layout/design of the panels?</li> <li>9. Can we provide newsletters to the community in layman's terms on a monthly basis?</li> <li>10. Are we willing to do a reforestation program? (this was highly recommended).</li> <li>11. Estimates that we are dealing with 9-12 people in the community, who have concerns.</li> <li>12. How will property values be effected?</li> <li>13. Visual impacts</li> </ol>	<ol style="list-style-type: none"> <li>1. Kingston Solar LP will work with the landowner to determine the cause and if the well has been damaged by construction activities it will be replaced.</li> <li>2. No spraying will be used to control vegetation.</li> <li>3. Solar panels are inert and not harmful.</li> <li>4. Kingston Solar LP will continue to work with all stakeholders as part of its public consultation process.</li> <li>5. An 'adjacent landowner' is a landowner located beside a landowner that has agreed to lease lands to Kingston Solar LP for the project.</li> <li>6. All Draft REA reports will be made available to the public 60 days in advance of the final Open House.</li> <li>7. Kingston Solar LP has made a continuous efforts to held various types of individual meeting such as a kitchen table meeting with each of adjacent landowners who have voiced their opinion on the Sol-luce Project throughout the course of the Project.</li> <li>8. The Project layout is in the process of being finalized and specific locations within the Study Area have not been confirmed pending completion of natural heritage and archaeological studies.</li> <li>9. Kingston Solar LP will issue the Project Newsletter on a regular basis to update the progress of the Project to the community and all relevant stakeholders.</li> <li>10. Kingston Solar LP will work with the City of Kingston, Loyalist</li> </ol>	Throughout the Project study and planning stages.

Date	Contact Type	Comment	Response	Response Date
			Township and Cataraqui Region Conservation Authority to identify appropriate mitigation plantings to meet the requirements of municipal tree bylaws. 11. No response required. 12. There is currently no information available on the effect of solar projects on property value. 13. During the detailed design phase of the project, Kingston Solar LP will review setbacks and landscaping on a case-by-case basis.	
22-Nov-11	Meeting	1. Prefer face-to-face group meetings 2. Don't agree with newsletter format 3. Concerned about the loss of power in the community (i.e. a neighbour can ruin my property value by signing up for solar). If my home value decreases because of solar, there should be compensation for this? Can there be a "window of protection for property value"? 4. Water issues. 5. Pesticides and/or herbicides 6. Can we provide a preliminary layout? 7. How is Samsung dealing with environment, natural heritage, cultural heritage etc?	1. Comment noted. 2. Comment noted. 3. There is currently no information available on the effect of solar projects on property value. 4. Water issues will be addressed in the Water Assessment and Water Body Report that will be prepared for the REA application. 5. No spraying will be used to control vegetation. 6. The Project layout is in the process of being finalized and specific locations within the Study Area have not been confirmed pending completion of natural heritage and archaeological studies. 7. Kingston Solar LP completed environmental, natural heritage, cultural heritage, and archaeological field investigations and the reports are currently being prepared.	22-Nov-11
23-Nov-11	E-mail	Missing the September 1 email (Andrew Moores)	Email sent to individual apologizing for delayed response to their September 1 email and reaching out to arrange a landowners meeting to discuss issues.	23-Nov-11
23-Nov-11	Meeting	Face-to-face meeting to address landowner concerns. Major Concerns include: Health concerns, Visual impact, setbacks, water, property value	No response required.	N/A
23-Nov-11	Meeting	Are Samsung willing to commit to the follow items in writing: 1. Setbacks from adjacent landowners, setbacks from public roadways, berms and other plantings (size, height, vegetation) 2. Herbicides and Pesticide use 3. Impact on land values, groundwater preservation, fencing types and if it will be behind berm, verbal statement to work with adjacent landowners 4. If Samsung representatives turn-over, need follow through on commitments 5. Can Samsung comment on if there is a "Solar Ombudsman" to protect landowners?	1. During the detailed design phase of the project, Kingston Solar LP will review setbacks and landscaping on a case-by-case basis. 2. No spraying will be used in vegetation control. 3. There is currently no information available on the effect of solar projects on property value. 4. Kingston Solar LP has been working with adjacent landowners throughout the Project study and planning stages. This will continue regardless of staff turn-over. 5. Kingston Solar LP is not aware of a "Solar Ombudsman"	23-Nov-11 and throughout the Project study and planning stages.
24-Nov-11	E-mail	My only concerns are: The project south of my property will it be set back from the road? Will you tree this project 1. The project east of me are you going to strip the land of its soil? a) Are you going to blast or drill ?( I have a limestone estate, could also change paths of water) b) Are you going to tree the property line? c) What happens if my well goes dry? d) Are you going to spray to keep the weeds away? e) f) Are property values going to drop?	During the detailed design phase of the project, Kingston Solar LP will review setbacks and landscaping on a case-by-case basis. 1. a) The need for drilling or blasting will be determined during the detailed design phase. b) See 1) above. c) Kingston Solar LP will work with the landowner to determine the cause and if the well has been damaged by construction activities it will be replaced. d) No spraying will be used in vegetation control. e) There is currently no information available on the effect of solar projects on property values.	Throughout the Project study and planning stages.
24-Nov-11	E-mail	As a follow-up to the November 23 meeting, individual seeks Samsung's commitment in writing to the following: • Setbacks from adjacent landowners • Setbacks from public roadways • Berms and other plantings (size, height, vegetation) • Herbicides and Pesticide use • Impact on land values • Groundwater preservation • Fencing types and if it will be behind berm	• During the detailed design phase of the project, Kingston Solar LP will review setbacks and landscaping on a case-by-case basis. • No spraying will be used in vegetation control. • There is currently no information available on the effect of solar projects on property value. • Kingston Solar LP has been working with adjacent landowners throughout the Project study and planning stages.	Throughout the Project study and planning stages.

Date	Contact Type	Comment	Response	Response Date
		<ul style="list-style-type: none"> <li>• Verbal statement to work with adjacent landowners</li> <li>• If Samsung representatives turn-over, need follow through on commitments</li> <li>• Can Samsung comment on if there is a "Solar Ombudsman" to protect landowners?</li> </ul>	<p>This will continue regardless of staff turn-over.</p> <ul style="list-style-type: none"> <li>• Kingston Solar LP is not aware of a "Solar Ombudsman"</li> </ul>	
25-Nov-11	E-mail	<ol style="list-style-type: none"> <li>1. With the amount of construction that will be going on and the number of large trucks that will be travelling on our roads (to clear vegetation and bring in gravel/panels and installation - I am assuming) - who is responsible to ensure that the roads will be restored to good order. Hundreds of trucks travelling for a period of up to one year is going to contribute greatly to the breakdown of our roads.</li> <li>2. Will you be clearing all vegetation and bringing in gravel to cover our fields or will there be a certain amount of vegetation left. If it is left, will you be spraying to keep it under control? How are you going to be able to ensure that these chemicals do not get into our water table?</li> <li>3. During construction how are you going to manage the incredible amounts of dust that will be in the air - settling on my property/vehicles/pool/windows/brick etc?</li> <li>4. One of my daughters is a triathlete and is training for the Ontario Summer Games. Your project area is her training ground. How are you going to be able to assure me of her safety as she and her coach train, with all the added traffic and construction vehicles?</li> <li>5. What if, in 5 years, the Ontario Government decides that this type of energy is too expensive (as has happened in many parts of Europe) - who is responsible to remove all the panels ,their bases/fencing etc? I understand you have a 20 year contract but what if? I worked as Director of Business Operations (Finance and HR)for a company that bid on Airports and Military Bases as the Federal Government made decisions to privatize many of their operations. There is always the chance that as the economy changes or the face of government changes that the mandate also changes. In my experience, there is always a way to buy out a contract. What if your company decides it is not cost effective to continue operations? What do you have in place, contractually, to ensure your responsibility to return our fields to the fields they are today?</li> <li>6. Again, I have to ask you if it is necessary to use the acreage directly across from my home. With all that has been offered up to Samsung to lease/purchase-do the few hectares in my front yard have to be used? And again, if they are used, how do you plan to conceal from me the field of your solar panels?</li> </ol>	<ol style="list-style-type: none"> <li>1. The construction contractor will be responsible to repair damage to roads caused by trucks associated with the construction of the project.</li> <li>2. There will be gravel access roads, however, the remainder of the site will be seeded. No spraying will be used for vegetation control.</li> <li>3. Measures will be put in place by the construction contractor to minimize dust.</li> <li>4. The construction contractor will implement a traffic management plan for the project and will ensure safe driving practices by its employees.</li> <li>5. Kingston Solar LP prepared a Decommissioning Plan Report as part of the REA application process. This plan will provides details on the measures that will be taken to decommission the project. This Plan is available on the Project website (<a href="http://www.samsungrenewableenergy.ca/kingston">www.samsungrenewableenergy.ca/kingston</a>)</li> <li>6. During the detailed design phase of the project, Kingston Solar LP will review landscaping on a case-by-case basis.</li> </ol>	Throughout the Project study and planning stages.
27-Nov-11	E-mail	<p>Do to the resignation of the project team contact, a request was made to the team members for the name and contact information for the replacement team member.</p> <p>Follow-up email thanked them for meeting with a number of individuals. In addition, a recap of the discussion and additional concerns were provided by the individual.</p> <ol style="list-style-type: none"> <li>1. Regular public meetings to be held by Samsung at 3-4 week intervals, along with public newsletter - we as stakeholders (residents effected) of your project need as much detailed information about the project as a whole, ongoing updates on the status of the project and next steps at each stage. We would expect that all formal documents would be provided in a timely fashion and an opportunity given in a face to face public session to address questions/concerns.</li> <li>2. Assurance that wells will not be effected (study and action plan to assure this, to be implemented) - you advised that a "water assessment study" was performed, which is a general report, not covering the impact of water quality or quantity on the specific residents properties which are in the project area. As we mentioned, due to limestone in this area, numerous residents have shallow dug wells. While others have drilled wells, our water in this area is not supplied, treated or monitored by the City of Kingston. We are dependent on water from veins below and rain above to provide this life necessity. This being said, with the project changing the topography of the lands, removal of trees, earth scrapped to bear rock, drilling/blasting and the use of herbicides on these adjacent lands, it is critical that specific studies be undertaken to ensure that wells remain unaffected by your project. Well testing should be done prior to, during and continued after the project completion.</li> <li>3. Written assurances on house values - with the newness of solar farms to Canada and the true long term effects on house values within the immediate area of these farms unknown, written guarantees of the saleability of our homes and a continued fair market price for residents, is necessary to ensure the financial security of our homes remains intact, prior, during and after your project is implemented. This may require external studies.</li> <li>4. Full disclosure of lands procured for the project - as residents within your project area, we are stakeholders by default, as our consent to the project has not been sought. Your project will have a significant bearing on our lifestyle, financial and physical well being, during all phases. Under these circumstances, we believe that Samsung has a responsibility to us, as stakeholders, to disclose all information on your project which includes the exact location of the lands procured/proposed."</li> </ol>	<p>Kingston Solar LP provided name and contact information.</p> <ol style="list-style-type: none"> <li>1. Newsletters were distributed in December, 2011 and June, 2012. An Interim Community Session was held in April, 2012 and Final Open Houses August 15 and 16, 2012. Kingston Solar LP was in regular contact with several individuals throughout the Project study and planning stages. Opportunities to address questions/concerns were provided at public meetings as well as face-to-face meetings, emails, or phone calls.</li> <li>2. During the months of June and July (2012) Kingston Solar LP conducted Well Water Surveys throughout the project area. Water samples were obtained from over thirty (30) properties that were adjacent to the proposed development. Well water samples were collected following standard industry protocols and submitted to Exova laboratory (Kingston). Analyses were conducted for bacteria, alkalinity, ammonia, nitrate, nitrite, calcium, chloride, colour, conductivity, DOC, hardness, iron, magnesium, manganese, pH, potassium, sodium, sulphate, TDS and turbidity. A final report (contingency program included) was made available to the public.</li> <li>3. There is currently no information available on the effect of solar projects on property value.</li> <li>4. Project layout is still under development. Once the layout has been finalized, it will be available for public review.</li> </ol>	Throughout the Project study and planning stages.
6-Dec-11	Phone Call	Individual had questions about the tree clearing that was to take place on his property.	AMEC provided information to Kingston Solar LP for follow-up. Kingston Solar LP identified to the individual that this is not a developable area.	December 2011
10-Dec-11	E-mail	Request for information about project start dates and contractor	Response sent to the individual outlining the current project status, providing future dates and contractor information, and referring them to the project website for future information.	19-Dec-11
15-Dec-11	E-mail	Request for information regarding electricity discounts for residents of Quabbin Road and Unity.	Kingston Solar LP does not set the rates as they are set by the local utility company.	Throughout the Project



APPENDIX I: PUBLIC COMMENT AND RESPONSE SUMMARY TABLE

Date	Contact Type	Comment	Response	Response Date
28-Dec-11	E-mail	Individual emailed to follow-up on unanswered early request for information.	Email response was sent to stakeholder regarding this issue. An apology for not meeting and assurance that on the next visit, the team would make all reasonable efforts to personally visit and try to address the concerns.	28-Dec-11
28-Dec-11	E-mail	<ol style="list-style-type: none"> <li>1. What are the short term effects of construction on our shallow / dug wells, ground cover, wildlife, roadways, transmission lines, and real estate values?</li> <li>2. What are the long term effects of the overall project on our shallow / dug wells, ground cover, wildlife, roadways, transmission lines, real estate values and tax assessments?</li> <li>3. Will there be Ministry of Environment confirmation of the long term effects of the project on water and natural habitat beyond your studies?</li> <li>4. What setback distances from the house and property lines are you proposing?</li> <li>5. What type of "buffering" will you propose? Natural or Chain link?</li> <li>6. Will residents have input?</li> <li>7. Where will the secondary construction roads be located, how will they be maintained?</li> <li>8. What will the hours of construction be? Will residents have assurances of the hours?</li> <li>9. Will there be a speed limit during construction, posted and enforced?</li> <li>10. Will a dispute resolution mechanism be created to hear resident concerns?</li> <li>11. What type of panels will be installed, low rise, tall, tracker, fixed pole etc?</li> <li>12. Will this be strictly a grid tie in system, a grid tie in with battery or a grid tie in with inverter or a combination?</li> <li>13. Where will the collector lines run, above ground, in concrete or below ground?</li> <li>14. Will blasting be involved, how deep will each post be drilled?</li> <li>15. Where will the soil needed for berms come from?</li> <li>16. What is the plan for reforestation?</li> <li>17. What about battery backups will there be lead acid storage required?</li> <li>18. What is the plan for the additional transmission, underground or above?</li> <li>19. Who is paying for the new infrastructure?</li> <li>20. What is the plan for decommissioning of the fields, the panels and the posts?</li> <li>21. How were the leasees selected?</li> <li>22. Can you share the cost benefit analysis you have taken with us?</li> <li>23. Have you considered a cost benefit analysis of areas located farther north and can they be shared with us?</li> <li>24. What compensation plans do you have for landowners when or if well water goes bad?</li> <li>25. Will affected landowners be offered price protection for their pre construction real estate values?</li> <li>26. Will residents see the "community feedback" shared with the Ministry of the Environment?</li> <li>27. Will pesticides be used to control weeds and foliage?</li> </ol>	<ol style="list-style-type: none"> <li>1. Independent consulting engineering contractors will be conducting studies over the next few months to explore whether there will be any impact to well water during construction (if any). If there is any impact to be found we will mitigate it accordingly.</li> <li>2. Please see answer to question one (1) Above.</li> <li>3. As I mentioned above The Ministry of Environment (MOE) is thoroughly involved our project through the REA process.</li> <li>4. At this point our layouts are very preliminary; a finalized layout will be generated once all the approval from government entities is attained.</li> <li>5. We will build either berms or plant trees (i.e. pine, cedar or other) on strategic areas to mitigate visual impact. Additionally a fence will be installed throughout the perimeter of the installation for safety and to avoid vandalism</li> <li>6. Yes, that is the reason I am writing this e-mail to you (a resident in the area) to hear your concerns and try to address them. It is in our best interest to build a relationship with our neighbours. Moreover community members will be able to bid for work, local business will flourish throughout the construction and operations period as this project will generate demand for their services.</li> <li>7. Again everything is very preliminary at this point a finalized construction plan will be generated once all the approval from government entities is attained.</li> <li>8. Our plan is to work during normal working hours (Day time). Again everything is very preliminary at this point a finalized construction plan will be generated once all the approval from government entities is attained.</li> <li>9. Most of the construction will take place inside of private properties, but we will require the use of existing roads for equipment transportation, in this case there might be signs posted. is very preliminary at this point a finalized construction plan will be generated once all the approval from government entities is attained.</li> <li>10. Yes, our plan is to organize an open house consultation process. The next open house should take place the first quarter of 2012. Additionally Kingston Solar LP will address your concerns through our team members throughout the lifetime of the project (eg. prior to REA, after REA, prior to construction, after construction, during operation, and finally through decommissioning).</li> <li>11. We have not decided as of yet what panel manufacturer we will be using. We are certain it will be poly-si crystalline panels and will be manufactured in London, Ontario, and we are currently deciding which manufacturer meets our criteria.</li> <li>12. Yes, it is a grid tie in system, inverters will be required to convert the direct current (DC) to alternating current (AC).</li> <li>13. A finalized construction plan will be generated once all the approval from government entities is attained.</li> <li>14. Again everything is very preliminary at this point a finalized construction plan will be generated once all the approval from government entities is attained. Most likely we will have to drill approximately 6 feet underground.</li> </ol>	29-Dec-11

Date	Contact Type	Comment	Response	Response Date
			<p>15. Again everything is very preliminary at this point a finalized construction plan will be generated once all the approval from government entities is attained.</p> <p>16. The Ontario's Ministry of Natural Resources is thoroughly involved our project through the REA process, and we are abiding by their guidelines.</p> <p>17. Again everything is very preliminary at this point a finalized construction plan will be generated once all the approval from government entities is attained.</p> <p>18. The existing distribution line in the area will be used. If required we will upgrade the existing infrastructure.</p> <p>19. Project Owner (Kingston Solar LP) will bear the cost for it if required.</p> <p>20. We will fully decommission the solar installation remove the posts and restore the grounds to its original condition. Moreover a decommissioning plan will also be prepared by our consultants.</p> <p>21. Our Land acquisition agent was responsible for getting land owners interested. There were many factors considered when the leases were selected amongst them was land area, interest shown by the land owner, non-densely forested properties, non-prime agricultural soils, proximity to an existing Transmission line, existent capacity on the closest transmission station.</p> <p>22. All the financial information regarding our projects is highly confidential.</p> <p>23. All the financial information regarding our projects is highly confidential.</p> <p>24. As I mentioned before, independent consulting engineering contractors will be conducting studies over the next few months to explore whether there will be any impact to well water during construction (if any). If there is any impact to be found we will mitigate it accordingly.</p> <p>25. There is no price protection offered for real estate values.</p> <p>26. Once we attained the REA from Ontario's Ministry of Environment (MOE) this information will be made public.</p> <p>27. We do not intent to use pesticides. There will be an Operations and maintenance (O&amp;M) on site team during the operational period.</p>	
12-Jan-12	E-mail	<p>Questions and concerns in regards to the Samsung Sol-Luce Kingston Solar PV Project</p> <p>Concerns:</p> <ol style="list-style-type: none"> <li>1. Property Value Dropping.</li> <li>2. Well Water</li> <li>3. Noise from invertors and substations</li> </ol> <p>Questions:</p> <ol style="list-style-type: none"> <li>1. How many homes will a 100 MW Solar Array produce power for in optimal conditions and do have documentation to prove these numbers?</li> <li>2. How will The Samsung Sol-Luce Kingston Solar PV Project benefit the city of Kingston?</li> <li>3. What will Samsung do to assure no property value loss due to the Solar Arrays?</li> <li>4. What will Samsung do to assure no water loss or water contaminations for during the project and up to one year after the project is completed.</li> <li>5. What will Samsung do to assure there will be no noise heard from invertors or substations what so ever? The country is very quiet. We like it that way</li> <li>6. How deep are the holes for the post for mounting the solar panels?</li> <li>7. Will there be berms if yes How far back from roads and property lines How high will the berms be? Will security fencing be inside or outside of the berm?</li> </ol>	<ol style="list-style-type: none"> <li>1) Approximately 12,000 to 14,000 homes could be powered with a 100 MW solar facility.</li> <li>2) Our Sol-Luce Kingston Solar PV project will: <ol style="list-style-type: none"> <li>a) create approximately 500 jobs at construction peak,</li> <li>b) Additionally it will benefit dozens of businesses in the Kingston area, including but not limited to, engineering and design firms, construction subcontractors, suppliers and multiple service providers (e.g. Hotels, restaurants, et. al).</li> <li>c) our project will increase the local tax revenues as jobs are generated and sales from local businesses increase.</li> <li>d) Moreover there is the evident environmental benefits which is the reduction of green house emissions.</li> </ol> </li> <li>3. We are unable reassure unforeseen speculative events. Historically real estate values have a tendency to fluctuate due to multiple factors.</li> <li>4. Independent consulting engineering contractors will be conducting studies over the next few months to explore whether there will be any impact to well water during construction (if any). If there is any impact to be found we will mitigate it accordingly.</li> </ol>	19-Jan-12

Date	Contact Type	Comment	Response	Response Date
		<p>Will there be buffering ie Evergreens between the road/property berm? Where will the soil come from to create the berm?</p> <p>8. In your draft report Page 8 Solar Farm Sites/Landscaping (Topsoil replacement) Please explain in detail</p> <p>9. In your draft Page 9 Solar Panels/Grounds Keeping. What does grounds keeping entail. (Spraying Cutting Grass) Please Explain.</p> <p>10. Will there be grass under and between the rows of Solar Panels?</p> <p>11. In your draft Page 9 Decommissioning/Solar Panels/Gathering Lines/Switchyard and Interconnection It states "as necessary in accordance with the land lease agreement" Please explain in more details.</p> <p>12. In your draft Page 9 Decommissioning "Site Restoration" Please explain in more detail?</p> <p>13. Why could this Solar Array not be put under the hydro line?</p> <p>14. In your draft Page 13 Environmental Components/Potential Effects "Aquifers can be susceptible to land use impacts depending on the type and thickness of the overburden and/or shallow depth to groundwater. Dewatering of aquifers is not anticipated as part of the project". If dewatering does happen what is Samsung's plan</p> <p>15. Is Samsung still planning a small get together for concerned citizens all who have contacted you currently or Mr. Moore in the past?</p>	<p>5. An noise assessment report is ongoing and is being generated by our consultant AMEC, it will be published later this year once all project documentation is finalized and approved by all the ministries involved.</p> <p>6. Everything is very preliminary at this point a finalized construction plan will be generated once all the approvals from government entities are attained. Most likely we will have to drill approximately 6 feet underground.</p> <p>7. Yes, there might be berms located at strategic locations to mitigate visual impact.</p> <p>a) How far back from roads and property lines Everything is very preliminary at this point a finalized construction plan will be generated</p> <p>b) How high will the berms be? Everything is very preliminary at this point a finalized construction plan will be generated</p> <p>c) Will security fencing be inside or outside of the berm? The security fence will be inside of the berm (e.g. Road, berm, fence, solar installation).</p> <p>d) Will there be buffering ie Evergreens between the road/property berm? Yes, there will be buffering located at strategic locations to mitigate visual impact.</p> <p>e) Where will the soil come from to create the berm? Again everything is very preliminary at this point a finalized construction plan will be generated once all the approval from government entities is attained.</p> <p>8. During construction some of the existing soil might be displaced, our EPC contractor will have to replace (back to it's original location) the displaced soil.</p> <p>9. During the operation of the facility there will be an Operations and Maintenance team that will keep the solar installation running efficiently. This might include keeping the vegetation at bay by mitigating unwanted vegetation growth. We do not intent to use pesticides.</p> <p>10. We might consider grass, clover or other low lying vegetation to provide an aesthetically pleasing view from the air.</p> <p>11. We will fully decommission the solar installation remove the posts and restore the grounds to its original condition. Moreover a decommissioning plan will also be prepared by our consultants.</p> <p>12. We will fully decommission the solar installation remove the posts and restore the grounds to its original condition. Moreover a decommissioning plan will also be prepared by our consultants</p> <p>12. This Solar facility will be connected to the Hydro lines. It cannot be built right under the Hydro lines from multiple reasons.</p> <ul style="list-style-type: none"> <li>• The areas where the Hydro lines are located is constrained and does not provide for an efficient layout, additionally the Transmission towers along with the cables cast a shadow on the panels which hampers solar productivity.</li> <li>• In most instances the areas where the Hydro lines are located are not owned by private land owners; instead it is owned by government entities.</li> </ul> <p>13. We might not use well water during the construction of this project, in fact our preliminary plan is to use water trucks, this may mitigate any dewatering concerns. Additionally as I mentioned above, an independent consulting engineering contractors will be conducting studies over the next few months to explore whether there will be any impact to well water during construction (if any).</p>	

APPENDIX I: PUBLIC COMMENT AND RESPONSE SUMMARY TABLE

Date	Contact Type	Comment	Response	Response Date
			If there is any impact to be found we will mitigate it accordingly. 14. Yes, I will be travelling to Kingston constantly, we could set up a meeting with you and your wife. In fact I should be in Kingston the week of January 30th.	
20-Jan-12	E-mail	Follow-up Additional Questions to January 19th response: Question #1 A little more detail please. Approximately 12,000 to 14,000 homes could be powered with a 100 MW solar facility. Is that powered per day per year???? And do you have documentation to prove it ???? Question #2 A little more detail please How much green house gas was created in making the solar panels and how much green house gas will be produced on installing the solar panels? Question #5. I think the people living beside the solar arrays should have the final impute on the noise before it is approved by the ministries. You are letting the people who aren't living beside them make the decisions. The country is quite. That is why we moved out here.	Met with stake holder to discuss some of these questions and inquiries Specific answers were not provided.	31-Jan-12
24-Jan-12	E-mail	Individual thanked Samsung for response to questions and posed additional questions. Q1A: Correct me if I am wrong but the public gets to see all applications and final construction plans before they are sent in for assessment and approval. Right???? B: If no why not. Q2A: Power for 12-14000 homes is that per day, per week, per month or per year? B: And do you have documentation to prove it? C: And if you have documentation, my I have a copy? Q3A: Why were the plants to produce the solar panels not put in Kingston? B: How much green house emissions are created in making solar panels? C: How much green house emissions are created in creating and installing a solar array? Q4A: Who is the independent consulting engineering contractors doing the water study? B: Will their information be made public? Q5A: What ministries are involved in a noise assessment report for final approval? B: When the report is finalized my I have a copy? Or should I contact AMEC? Q6A: Who or what is a EPC Contractor? B: When will the EPC contractor replace the displaced soil back to its original location? Q7: Why are you concerned about a aesthetically pleasing view from the air??(I am personally more concerned about the view from the ground) Q8: What will Samsung do to assure there will be no noise heard from invertors and substations what so ever? Q9: Where will the soil come from to create the berms?	Kingston Solar LP representative provided responses to some of the questions; identifying that others would be answered and that an FAQ was being developed. Q3A: We explored the possibilities of setting up manufacturing facilities in different municipalities throughout Ontario, there was an intensive analysis behind our decision to set up our solar manufacturing facility in London, Ontario. Amongst the factors that were considered were: • Qualified human resources • Existent Manufacturing Infrastructure • Proximate accessibility to other (US) markets, • Employment rates, • Proximity to potential research institutions, • Incentives from the municipalities. Q4A: Most likely AMEC will be performing the water Studies B: Yes, the water studies will be made public Q5A: The Ministry of Environment B: Yes, the noise assessment report will be made available to the public. We should have this report published around August 2012 Q6: Engineering Procurement and Construction (EPC). We have not chosen a final EPC company. Q7A: As mentioned we will consider using berms in strategic locations to mitigate any visual impact. Q8: Our consultants will perform all the necessary noise studies, this will allow us to place invertors and substations at strategic locations. [Q9 Response Kingston Solar LP to provide]	7-Feb-12
26-Jan-12	E-mail	Individual concerned about the consultation process and potential health impacts of the project.	Arranged for a meeting on February 3, 2012.	30-Jan-12
30-Jan-12	E-mail	Individual had questions regarding the production of the solar panels, the amount of homes that would receive energy, water and noise surveys and visual mitigation.	Since then some of these questions have been addressed in our website. We are no longer building on property 11B, and there will be visual mitigation measures taken on the western border of property 11A	N/A
1-Feb-12	E-mail	Individual thanked Samsung for the meeting. Concerned about visual impacts.	Comment noted.	N/A
3-Feb-12	E-mail	Individual forwarded contact information regarding the Cataraqui Regional Conservation Authority to Samsung Representatives.	Kingston Solar LP representative acknowledged receipt of information.	3-Feb-12
3-Feb-12	E-mail	Individual expressed dismay about the project and voltage/setbacks.	Kingston Solar LP representative acknowledged receipt of email from the individual.	3-Feb-12
6-Feb-12	E-mail	Individual expressed concern about previous discussions and requested response to some earlier questions posed to Samsung.	Reply to some of these questions via e-mail on Tuesday Feb 7 2012	7-Feb-12

APPENDIX I: PUBLIC COMMENT AND RESPONSE SUMMARY TABLE

Date	Contact Type	Comment	Response	Response Date
8-Feb-12	E-mail	Email from individual inquiring about a status of the land deal with Samsung for their mother's property. They had entered into an agreement with Samsung through genGROWTH in September 2011 and have yet to hear back from the company about the status. They would like a response as soon as possible as they would like to move forward with the sale of the property with a private realtor if Samsung is no longer interested.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.KingstonSolarLPrenewableenergy.ca/kingston</a> )	N/A
8-Feb-12	E-mail	Individual expressed concern to Samsung representatives about the project and requested further clarification.	Kingston Solar LP representative corrected erroneous statements and provided clarification.	14-Feb-12
22-Feb-12	E-mail	Email from individual expressing frustration about the Project. Requesting an updated map of the Project, setbacks to be established, plans should water become undrinkable and increased consultation.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.KingstonSolarLPrenewableenergy.ca/kingston</a> )	N/A
22-Feb-12	E-mail	Individual requested for confirmation and information from Samsung Representatives.	Had a phone conversation on Friday February 24 2012 to discuss visual impact assessment, an update on the FAQ section of our website and keep him informed about the potential timeline for the Interim Community Session	DATE
24-Feb-12	E-mail	Link provided to Kingston EMC article entitled "proposed solar project has Loyalist residents fighting to be heard"	No response required.	N/A
24-Feb-12	E-mail	Correspondence attempting to setup a phone call	A phone conversation was held in the afternoon hours of Friday February 24 <sup>th</sup> .	24-Feb-12
27-Feb-12	E-mail	<p>Email from individual outlining a number of concerns and recommendations.</p> <p>Concerns:</p> <ol style="list-style-type: none"> <li>1. Property Values</li> <li>2. Well Water (As a majority of our wells are blasted or dug in the area)</li> <li>3. Use of Prime Agricultural Farm Land</li> <li>4. Noise from Invertors and Substations</li> </ol> <p>Recommendations:</p> <ol style="list-style-type: none"> <li>1. Property value guarantee. Any property within 1000 feet of solar array project gets assessed for property value. If home is listed and sold within 3 months of Solar Array Completion and sells below assessed value the Solar Company compensates the rest.(Read more below)</li> <li>2. A aquifer study done by Solar Company in the projected area. Then submitted to the City of Kingston and the CRCA for review for project to proceed any further or not.</li> <li>3. Well testing (GPM and Bacteria) done on any wells within 1000 feet of a proposed solar sight to be paid for by Solar Project Company. Any loss of water or new well replacement within one year of completed solar project is to be paid for by adjacent Solar Project Company.</li> <li>4. All topsoil to be left under solar arrays and to be cut and maintained by Solar project. Or cut by the city of Kingston and reimbursed for cost by Solar Project.</li> <li>5. All solar arrays 300 foot setback of roads and property lines with trees (evergreens) planted within the 300 foot setbacks. Recommend Ontario's 50 million reforest program working with the Cataraqui Regional Conservation Authority. Property line Setbacks not required if adjacent to another property of solar arrays by same company. If not same company decision is left to land owners.(Read more below)</li> <li>6. Any fencing required for around a solar array must be installed on the inside of the berms.</li> <li>7. All solar arrays have a berm high enough to hide the fencing @ the 300 foot property and road set back mark made from soil, and hay. Recommend using expired round hay bales end to end then cover with dirt. It helps farmers get rid of old hay and helps reduce the amount of soil displaced to make the berm. Which helps keep our natural water filter in place (Soil). (Read more below)</li> <li>8. All invertors and substations must not exceed 12 decibels.(Decibel number info taken from Temple University Department of Civil/Environmental Engineering)</li> <li>9. All substations must be 1500 feet away from any home with a fake building surrounding it to look like other local homes/barns in the area. Fake building only required if substation is visible from another home or the road.</li> <li>10. City asks all Solar Projects for bond in trust for cost of decommissioning, and any and all interest on said bond to be put into Kingston's reforest and Parks programs at the time of decommissioning.(Read more below)</li> <li>11. City asks for 1% annually of energy profits for schools to help fund education projects in relationship to solar, wind, emissions and reforestation. (Read more below)</li> <li>12. Construction Period during school time be 6:00 am to 6:00 pm. May be lengthened when school is closed for summer to 6:00 am -8:00 pm.</li> <li>13. No construction at ALL on Sundays.</li> </ol>	<ol style="list-style-type: none"> <li>1. There is currently no information available on the effect of solar projects on property value.</li> <li>2. During the months of June and July (2012) Kingston Solar LP conducted Well Water Surveys (WWS) throughout the project area. A final report (contingency program included) will be available to the public.</li> <li>3. The Project is utilizing lands that have been classified CLI land class 4 – 7. Solar projects are not permitted under the Feed-In-Tariff rules on CLI land classes 1 – 3 (suitable for agriculture).</li> <li>4. This will be addressed in the Noise Study Report being completed for the project.</li> </ol>	Throughout the Project study and planning stages.

Date	Contact Type	Comment	Response	Response Date
		<p>14. All construction roads taken down to 50 KMH for duration of project.</p> <p>15. Solar Arrays only to be installed on Land Class 5-7 as stated by the Ontario Farmers Association in a article in The Review March 5/ 2010 "Debate over agricultural land solar heats up, cools down".</p> <p>16. Any and all Herbicides must be stored in a appropriate building no closer than 1500 feet of any home, creek or drainage ditch.</p> <p>17. City of Kingston must have 2-4 staff members to take calls from concerned citizens and deal with situations immediately. (IE Speeding construction vehicles, exceeding work times. The city staff would come out and review the situation and call the proper people (IE Police). Not concerned residents job to figure out who to call. MNR, MOE, Police, City Bylaw</p> <p>18. City of Kingston staff members for concerned citizens are on call and or working during all solar project construction times.</p> <p>19. City of Kingston wages for 2-4 staff members for concerned citizens paid for by solar projects</p> <p>Continued Recommendations:</p> <p>1. People tell me there will be no home value loss due to living so close to the solar fields well it isn't there home or part of their retirement plans is it. Mine is and I want to protect it. So if the Solar Companies and politicians want to say there will be no loss of value due to forcefully living next to a solar array then put their money on the line and give me a home price guarantee. And if I decide to live there past 3 months after solar job completion then my loss.</p> <p>5. The 300 foot setback. I got that distance from when I was looking at putting in a Solar Micro Kit on my property and my insurance company asked me to keep the solar panels 300 feet from the road so no one could damage them by throwing stones or other items at them.</p> <p>7. My concern is soil displacement to create the berms I realize that the hay will break down over time and the berm will decrease in height. My thoughts on that are by the time the berm starts to decrease in height the trees between the road and property berm have grown. The evergreens planted by the CRCA on my property 2 years ago this spring are over 2 feet tall. Some I planted 3 years ago are pushing 3 1/2 feet.</p> <p>10. In regards to a bond in trust for decommissioning. It was a suggestion from Lauren Ornelas at the Silicone Valley Toxics Coalition (<a href="http://www.svtc.org">www.svtc.org</a>). With all the stuff going on around the world about solar and wind, Auditor Generals Review and articles saying PC will stop GEA if elected in. Why take a chance with lands in our municipality ending up with a mess to clean up after Solar Companies go bankrupt or just walk away. How binding are these contracts of decommissioning if the company no longer exists. Then where does the money come from or does it fall on the land owner.</p> <p>11. I think Kingston should get more out of these solar projects then the title most Sub Stainable City. Make it work to help our children learn about why we need alternative energy and how it works. Right from Kindergarten up.</p>		
27-Feb-12	E-mail	Individual providing Samsung with the link to a newspaper article in which they are featured.	Thank you email sent by Kingston Solar LP.	27-Feb-12
28-Feb-12	E-mail	Individual requested that Samsung find another location for its solar installation.	Comment noted.	N/A
29-Feb-12	E-mail	Email from stakeholder thanking the Samsung team for their visit and requesting a response to the concerns and recommendations provided earlier. Email from the stakeholder requesting comments related to their concerns and recommendations, and providing a time that they are available.	Email from project team member to stakeholder and providing information about an upcoming interim meeting that will be held.	1-Mar-12
1-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.KingstonSolarLPrenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.KingstonSolarLPrenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.KingstonSolarLPrenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	<p>Email from individual regarding a number of outstanding questions related to the project.</p> <p>1. Have any endangered species been located around our property? We are aware of a number of endangered species here, such as the blue spotted salamander found across the street from our home where your panels/service roads are proposed to be located.</p> <p>2. What types of trucks will be used on the service road by our home during construction?</p> <p>3. What types of ongoing traffic will there be once the project is complete?</p>	<p>Email response that comments/questions have been received and that Kingston Solar LP is currently reviewing them and will have answers to some of them next week.</p> <p>A number of these questions were addressed under the Frequently Asked Questions (FAQ) the Project website.</p>	<p>9-Mar-12</p> <p>April 2012</p>

Date	Contact Type	Comment	Response	Response Date
		<p>4. Our family requires Samsung to have a minimum setback from our home of 550 meters. We feel solar should, at least, be on parity with wind. This is the minimum setback to ensure our children's health. How far back then will substations and inverters be from homes? We require at least 700 meters.</p> <p>5. As my wife mentioned at the meeting, we require that all new hydro lines be installed along the 401 and not along Mud Lake Road/Unity Road to ensure safety for our children from EMF. We assume then that there will be no changes whatsoever to our current small scale power lines along our road...is this correct??</p> <p>6. Does Samsung have the ability, through leased land with locals, for the company to have most of the traffic for construction occur along the 401 on service roads made on the site and NOT along Mud Lake Road/Unity Road?</p> <p>7. When will residents hear about when the proposed meeting in March/April will occur?</p> <p>8. What information will be presented at this proposed meeting?</p> <p>9. Will Samsung enter into MEANINGFUL negotiations with locals at that time regarding setbacks, landscaping, hydro lines, and construction? If not, why not?</p> <p>10. Specifically, what local companies/experts has Samsung consulted with in their studies regarding local wildlife, wells in the area, our vulnerable aquifer? If you have not consulted with local companies/experts, why not?</p> <p>11. What date did Samsung complete their ecological study?</p>		
2-Mar-12	E-mail	<p>In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.</p>	<p>Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website (<a href="http://www.KingstonSolarLP.com">www.Kingston Solar LPrenuableenergy.ca/kingston</a>)</p>	N/A
2-Mar-12	E-mail	<p>In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.</p>	<p>Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website (<a href="http://www.KingstonSolarLP.com">www.Kingston Solar LPrenuableenergy.ca/kingston</a>)</p>	N/A
2-Mar-12	E-mail	<p>In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.</p>	<p>Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website (<a href="http://www.KingstonSolarLP.com">www.Kingston Solar LPrenuableenergy.ca/kingston</a>)</p>	N/A
2-Mar-12	E-mail	<p>In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.</p>	<p>Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website (<a href="http://www.KingstonSolarLP.com">www.Kingston Solar LPrenuableenergy.ca/kingston</a>)</p>	N/A
2-Mar-12	E-mail	<p>In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.</p>	<p>Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website (<a href="http://www.KingstonSolarLP.com">www.Kingston Solar LPrenuableenergy.ca/kingston</a>)</p>	N/A
2-Mar-12	E-mail	<p>In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.</p>	<p>Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website (<a href="http://www.KingstonSolarLP.com">www.Kingston Solar LPrenuableenergy.ca/kingston</a>)</p>	N/A
2-Mar-12	E-mail	<p>In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.</p>	<p>Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website (<a href="http://www.KingstonSolarLP.com">www.Kingston Solar LPrenuableenergy.ca/kingston</a>)</p>	N/A

APPENDIX I: PUBLIC COMMENT AND RESPONSE SUMMARY TABLE

Date	Contact Type	Comment	Response	Response Date
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPRenewableenergy.ca/kingston">www.Kingston Solar LPRenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPRenewableenergy.ca/kingston">www.Kingston Solar LPRenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPRenewableenergy.ca/kingston">www.Kingston Solar LPRenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPRenewableenergy.ca/kingston">www.Kingston Solar LPRenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPRenewableenergy.ca/kingston">www.Kingston Solar LPRenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPRenewableenergy.ca/kingston">www.Kingston Solar LPRenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPRenewableenergy.ca/kingston">www.Kingston Solar LPRenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPRenewableenergy.ca/kingston">www.Kingston Solar LPRenewableenergy.ca/kingston</a> )	N/A
2-Mar-12	E-mail	Email from stakeholder providing a list of issues/questions in follow-up to the Rural Affairs meeting that was held and requesting that a generic answer not be provided. Issues are as follows: 1. A March or April meeting was mentioned by Samsung. Will Samsung be open to discussing and negotiating setbacks with local residents at that time? 2. At this proposed meeting, will Samsung have a definitive plan to present to residents should wells be affected by construction/implementation? We are hoping for specific initiatives, not that the issue will be mitigated if and when it occurs. 3. Will your people be in our area over the next two weeks? We would like to know so that we are aware that they are your people and not simply people snooping around our properties. If so, where and when. We will not be a disturbance to their work. 4. Will Samsung be responding to the recommendations made at the Rural Affairs meeting? If so, in what format will this occur? When will this occur? Will local residents receive receipt of this? If not, why not?	Email response that comments/questions have been received and that Kingston Solar LP is currently reviewing them and will have answers to some of them next week.  A number of these questions were addressed under the Frequently Asked Questions (FAQ) the Project website.	9-Mar-12  April 2012



Date	Contact Type	Comment	Response	Response Date
		5. Has Samsung made any plans for hours of operation during construction? What is Samsung's CURRENT feeling on hours of operation? Is it possible that construction could extend 24 hours a day, 7 days a week? 6. Where will the access roads be to the project? How many of these will there be? 7. Due to the number of people at the Rural Affairs meeting who require a significant setback to Samsung's project, what is Samsung's current position about your previous position of not feeling setbacks were required? 8. Is Samsung planning on providing a decommissioning bond to Kingston and Loyalist Townships? If not, why? 9. Will Samsung guarantee home owners value on their properties? If not, why not considering Samsung has previously stated that property values will not decline...if Samsung is so confident of this statement, why not guarantee our property values?"		
3-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.Kingston Solar LPrenewableenergy.ca/kingston</a> )	N/A
4-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.Kingston Solar LPrenewableenergy.ca/kingston</a> )	N/A
4-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.Kingston Solar LPrenewableenergy.ca/kingston</a> )	N/A
5-Mar-12	E-mail	Email from individual requesting the name of the person completing the bird studies for the project.	A response was sent with the name of the biologist	5-Mar-12
5-Mar-12	E-mail	In light of the proposed Samsung Sol-Luce project for our area, I would like to bring to your attention that the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer." Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.Kingston Solar LPrenewableenergy.ca/kingston</a> )	N/A
5-Mar-12	E-mail	Individual requested from Samsung the name of the person completing the bird studies.	Kingston Solar LP representatives provided the name of the individual and pointed out that the study was still in progress.	5-Mar-12
7-Mar-12	Phone Call	Discussion regarding development of property bordering Quabbin Road (Property 11B)	Kingston Solar LP representative assured the individual that there was a 90% chance that property 11B will not be developed	7-Mar-12
9-Mar-12	E-mail	Email from stakeholder providing an additional list of issues/questions in follow-up to the Rural Affairs meeting. We would also add the following questions to our list below: 1. Has Samsung investigated the importance of riparian buffers in your proposed area? 2. If you have begun to study riparian buffers, who have you consulted? Have you consulted local experts? If so, who specifically? If not, why not? 3. As Samsung is proposing to remove all trees within their paneled areas which, evidently, will have great effects on riparian buffers, what specific considerations is Samsung giving to mitigate the effects it will have on ground water? 4. If, due to the loss of riparian buffers in the area, Mud Lake and surrounding water channels develop algae blooms and become contaminated (a possible effect of the installation of your project) how will Samsung rectify this problem?	Verbally indicated to stakeholder that these questions will be answered as part of our Frequently Asked Questions section on the Website.	26-Mar-12
9-Mar-12	E-mail	Individual alerted Samsung representative to the classification of the local aquifers the Cataraqui Region Conservation Authority.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.Kingston Solar LPrenewableenergy.ca/kingston</a> )	N/A
12-Mar-12	E-mail	In view of the proposed Samsung Sol-Luce project in my area, I would like to bring to your attention, a study by the Ministry of the Environment, which according to the Intrinsic Susceptibility Index protocol, classified the area I live in as having a "highly vulnerable aquifer". My sole source of drinking water on my acreage is from my well. What guarantee will Samsung give me as a home owner to ensure the safety and integrity of my well-water? Will you provide me, in advance of your development, with a written guarantee that protects me from any and all negative outcomes that may put my drinking water at risk in the future because of your project?	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLPrenewableenergy.ca/kingston">www.Kingston Solar LPrenewableenergy.ca/kingston</a> ) Comment noted.	N/A

Date	Contact Type	Comment	Response	Response Date
		<p>-----                      Highly Vulnerable Aquifers                      A vulnerability assessment was completed using a 2002 amendment to the Ministry of Environment Intrinsic Susceptibility Index protocol. This method was also used by the adjacent source protection regions, which have similar geology and groundwater characteristics. The findings are described in detail in Chapter 5.                      Given the geological complexity of the Cataraqui Source Protection Area, with vulnerable bedrock aquifers very close to the surface, a majority of the Cataraqui Source Protection Area should be considered a highly vulnerable aquifer for the purpose of source protection planning. The highly vulnerable aquifer area is assigned a vulnerability score of six.                      Chloride, sodium, nitrate, and microbiological contaminants (total coliform, fecal coliform and Escherichia coli) are considered to be drinking water issues in the highly vulnerable aquifer. The vulnerability scoring of the aquifer means that moderate and low-ranked threats may exist in that area. In accordance with provincial rules, these threats have not been counted for this report.  <a href="http://www.cleanwatercataraqui.ca/assessmentReportSummary.html">http://www.cleanwatercataraqui.ca/assessmentReportSummary.html</a></p>		
12-Mar-12	E-mail	Individual asked whether Samsung would guarantee the safety and integrity of wells within the project area.	During the months of June and July (2012) Kingston Solar LP conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.samsungrenewableenergy.ca/kingston">www.samsungrenewableenergy.ca/kingston</a> )	
12-Mar-12	E-mail	In light of the proposed Samsung Sol-Luc e project for our area, I would like to bring to your attention the Cataraqui Region Conservation Authority has classified our entire area as having a "highly vulnerable aquifer". Please refer to the Cataraqui Source Protection Area map on their website. What guarantee will Samsung give home owners to ensure the safety and integrity of wells within your project area? Please answer as soon as possible.	Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.KingstonSolarLP.renewableenergy.ca/kingston">www.KingstonSolarLP.renewableenergy.ca/kingston</a> )	N/A
13-Mar-12	E-mail	Individual requested a meeting with a Samsung representative.	Meeting held with individual on Wednesday March 14. Discuss an article that came out public and also de probabilities of not developing property 11 b.	14-Mar-12
14-Mar-12	E-mail	Follow-up email from individual requesting a response to earlier questions submitted to Samsung (following to Samsung's March 9, 2012 response that responses will follow).	Verbally indicated to stakeholder that these questions will be answered as part of our Frequently Asked Questions section on the Website.	26-Mar-12
14-Mar-12	E-mail	Individual expressed concern regarding the project and sent Samsung representatives a report of a groundwater study completed on a solar farm in Welland, Ontario.	Meeting held with individual on Wednesday March 14. Discuss an article that came out public and also de probabilities of not developing property 11 b. Based on concerns identified by the community, Kingston Solar LP during the months of June and July (2012) conducted Water Well Surveys throughout the project area. A final report (contingency program included) is available for public viewing on the Project website ( <a href="http://www.samsungrenewableenergy.ca/kingston">www.samsungrenewableenergy.ca/kingston</a> )	14-Mar-12
14-Mar-12	Meeting	Individual concerned about visual effects, particularly property 11B.	Kingston Solar LP indicated there was a 90% chance that property 11B would not be used.	14-Mar-12
19-Mar-12	E-mail	Individual followed up on outstanding questions and requested faster response times to questions.	Kingston Solar LP identified that some of the answers to the questions provided by ██████████ have been answered internally over a week ago. There is an internal vetting process in conjunction with our consultant before I am able to release the answers to you. Rest assure that as soon as I receive feedback from our consultant I will be forwarding them to you.	19-Mar-12
27-Mar-12	E-mail	Individual requested a meeting with Samsung representatives.	Kingston Solar LP representatives invited the individuals to an Interim Community Session at the Invista Center on Tuesday April 17th.	27-Mar-12
28-Mar-12	Meeting	Discussion regarding setbacks from their house and the access roads, pending house sale and electromagnetic fields from the collector lines on March 28 2012	Kingston Solar LP representative indicated that there was a setback already established by the two property owners under the lease agreement, consequently solar panels will not be installed north of the pipeline and this would provide a setback of over 200 meters away from their house.	28-Feb-12
29-Mar-12	E-mail	Letter to local and provincial members of parliament outlining perceived health effects of project with request to halt the REA application.	No response required.	N/A

Date	Contact Type	Comment	Response	Response Date
29-Mar-12	E-mail	Individual concerned about cumulative human health effects of solar projects in the area. Specific concerns include: * Construction and operational effects on the air quality in the affected construction radius; * Construction drilling, blasting that produces noise, in the affected construction radius; * Operational noise in the affected radius from inverters, substations and transmission lines; * The effects of herbicides or panel detergents leaching into the fragile limestone below; * Unknown risks for residents living within close proximity to the transmission of high voltage; * Unknown risks for unborn children and infants in proximity to the transmission of high voltage	Air quality effects of the Project were addressed in the Construction Plan Report and Design and Operations Report. Noise effects of the Project were addressed in the Noise Assessment Report. All Technical Reports are available on Project website via <a href="http://www.samsungrenewableenergy.ca/kingston">http://www.samsungrenewableenergy.ca/kingston</a>	Throughout the Project study and planning stages
29-Mar-12	E-mail	Individual thanked AMEC for the meeting and listed their concerns about the project and forward email from February 27, 2012 with concerns and recommendations.	No response required.	N/A
29-Mar-12	Meeting	The URRPA is opposed to industrialisation of a rural area. URRPA would like to see proper archaeology, hydrology, studies, and well monitoring program. URRPA is asking that Samsung provide a \$5M community bond, offset property value loss, decommissioning bond (20%), and to respond to letters from concerned citizens. Field staff should be clearly identified when working in the area. URRPA concerned that the bird studies were not conducted properly, about noise and traffic during construction, about ground water resources, that setback concerns have not been addressed, visual impacts. There are a number of projects going on in the area and the cumulative effects are concerning.	Concerns were addressed with URRPA membership at the Interim Community Session and second Open Houses.	17-Apr-12 15-Aug-12 16-Aug-12
5-Apr-12	E-mail	Individual requested letter outlining location of the panels and the set back distance for sale of property.	Had a meeting in their residence in the afternoon hours of Wednesday March 28 and indicated to them that panels will be installed south of the pipeline, well over 100 meters away from her residential property, They kindly requested written commitment outlining this setback and I mentioned to them that this might not be possible.	28-Mar-12
5-Apr-12	E-mail	Individual requested a meeting with a Samsung representative.	Meeting held with the individual. Amongst the items discussed where, well water quality, whether or not property 11 B will be developed, visual screenings et.al.	5-Apr-12
10-Apr-12	E-mail	Individual sent comments about solar arrays and landscaping, including setbacks, that will help appease concerns.	Regarding the question about lighting, Kingston Solar LP responded that preliminary designs have no lighting on the open fields where the project will be located.	11-Apr-12
11-Apr-12	E-mail	Individual enquired whether the installation would include lighting and provided general comments regarding setbacks, landscaping and visual barriers.	Kingston Solar LP representative indicated that current plans do not include lighting. The Kingston Solar LP representative brought the project FAQ section to the attention of the individual ( <a href="http://www.samsungrenewableenergy.ca/sites/default/files/Website%20FAQ%20April%205%202012_Final.pdf">http://www.samsungrenewableenergy.ca/sites/default/files/Website%20FAQ%20April%205%202012_Final.pdf</a> ) and highlighted the Interim Community Session that was to take place at the Invista Centre on Tuesday April 17th in Kingston.	11-May-12
18-Apr-12	E-mail	What guarantee is Samsung going to give residents to assure the safety and integrity of wells in the project area? We have asked this question many times and it is a very valid concern. Again, when we asked one of your "experts" from AMEC at the Loyalist Township council meeting, he replied and I quote, "The water issue is a red herring.....what's your next question?" This response was flip, arrogant and completely unsatisfactory. Recently The Whig Standard of Kingston ran an article on the front page titled, "Ontario in way too deep", March 15, 2012, where residents of Rideau Lakes Township experienced well problems ranging from sediment, E. coli and chloroform seeping into their wells due to 14,000 holes drilled to support solar panels. This particular solar project was 10MW, one-tenth the size of Samsung's proposed project. The MOE was consulted and they determined the well contamination was a result of the 14,000 holes drilled. The proponent was required to install a water filtration system for the affected wells and they also paid the residents an undisclosed amount of money for their inconvenience. So, now that there is evidence of issues arising due to drilling thousands of holes into bedrock, what guarantee is Samsung going to give the residents affected by this mammoth, industrial project? What is Samsung's fire safety plan for the fields upon fields of panels and are you working with the Kingston and Loyalist Fire Departments to develop this safety plan? Bush and grass fires spread very quickly and it is not inconceivable they would sweep into a field of solar panels. Can the flames around a panel be extinguished with water or would you have to use a fire retardant chemical? Would an overheated or melting panel emit toxic fumes and if so, what is the plan to have residents and livestock evacuated? #3 - I am sure you and your company are starting to realize the level of frustration and disapproval coming not only from Unity Road, but the many, many negatively affected rural residents of Ontario. FYI.....Television Ontario (TVO) is airing tonight (April 18, 8pm and again at 11pm) with Steve Paikin, an episode titled, "Ontario's Wilted Green Energy Act??" It is clear we are not the only adversely affected neighbourhood and people want their lives back. So my question to Samsung is, what financial compensation will you provide for the unwilling stakeholders who through no fault of their own, find their lives irrevocably damaged? You have provided compensation for the people leasing their land, you are paying consultants, you are providing studies for birds, fish, soil, EMF's, you are supposedly building factories to provide jobs.....what are you going to do for the people who stand to lose the most?	Although well water quality assessment is not part of the renewable energy approval (REA) process, Kingston Solar LP will take the initiative to conduct a well water quality assessment pre and post construction, this scope of work will be completed under the guidance of the Ministry of Environment.  Kingston Solar LP and/or the relevant Contractor would finalize a detailed Emergency Response Plan for the project in collaboration with Loyalist Township and the City of Kingston's Emergency Services Departments.  Kingston Solar LP representative directed the attention of the individual to a website regarding property values ( <a href="http://www.thestar.com/business/article/1158851--wind-turbines-don-t-affect-property-assessment-ontario-review-board-rules">http://www.thestar.com/business/article/1158851--wind-turbines-don-t-affect-property-assessment-ontario-review-board-rules</a> ) and attached an official document from the Ontario Assessment review board.  Sol-Luce Kingston's 100 MW will be built at once (not through phases). Currently our tentative plan is to start construction on the second quarter of 2013. The construction period will last between one and half to two years	23-Apr-12

APPENDIX I: PUBLIC COMMENT AND RESPONSE SUMMARY TABLE

Date	Contact Type	Comment	Response	Response Date
		#4 - Lastly, I read the maximum size for a renewable energy project is 10MW, so anything larger would have to be done in "phases". Is this to say your project would have to be constructed in 10 phases??? How long will our residential community be a construction zone? If one phase takes approximately one year to construct, can we expect 10 years of construction?!! I do truly hope I am wrong with this information, so please clarify. I have written the MOE with this question and am awaiting their reply.		
23-Apr-12	E-mail	Will there be use of herbicide and if so, what information is there on its implementation? Requested information about property fencing, location of installations and barriers.	No herbicides will be used.  During the detailed design phase of the project, Kingston Solar LP will review setbacks and landscaping on a case-by-case basis.	Throughout the Project study and planning stages
23-Apr-12	E-mail	<p>1) What is Samsung's fire safety plan for the fields upon fields of panels and are you working with the Kingston and Loyalist Fire Departments to develop this safety plan? Bush and grass fires spread very quickly and it is not inconceivable they would sweep into a field of solar panels. Can the flames around a panel be extinguished with water or would one have to use a fire retardant chemical? Would an overheated or melting panel emit toxic fumes and if so, what is the plan to have residents and livestock evacuated? 2) Kingston Solar LP and/or the relevant Contractor would finalize a detailed Emergency Response Plan for the project in collaboration with Loyalist Township and the City of Kingston's Emergency Services Departments.</p> <p>The Emergency Response Plan would include a plan for the proper handling of materials and associated procedures to be undertaken during an emergency. The plan would also specify containment and clean-up materials and their storage locations as well as general procedures for personnel training. Developing this plan with local emergency services personnel would allow Kingston Solar LP and/or the Contractor to determine the extent of emergency response resources and response actions of those involved.</p> <p>The plan would include key contact information for emergency service providers, a description of the chain of communications and how information would be disseminated between Kingston Solar LP and/or the Contractor and the relevant responders. The plan would also indicate how the Proponent and/or the Contractor would contact (via phone or in-person) Project stakeholders who may be directly impacted by an emergency so that the appropriate actions can be taken to protect stakeholders health and safety.</p> <p>The communication plan for emergencies would be developed in collaboration with local emergency responders, and would be prepared following consultations with the Municipalities' Emergency Services Departments, including the local fire department.</p>	<p>The construction contractor and operations contractor will develop emergency response plans in collaboration with each municipality's emergency services departments.</p> <p>Comment noted.</p> <p>Comment noted.</p> <p>Comment noted.</p>	Throughout the Project study and planning stages
27-Apr-12	Phone Call	Individual sought reassurance that property 11B would not be developed	No solar panels will be installed on property 11B	27-Apr-12
1-May-12	E-mail	URRPA expressed concerns about changing maps and disappointment in the consultation process.	AMEC responded and indicated they would review the concerns expressed with Kingston Solar LP.	1-May-12
2-May-12	E-mail	<p>Individual stakeholder requests a meeting with Samsung representatives.</p> <p>Individual requested Samsung representative bring the site map that was presented at the open house to the meeting. Individual stakeholder cancelled the meeting due to illness</p>	Kingston Solar LP and individual stakeholder arranged a date and time to meet.	2-May-12
4-May-12	E-mail	Individual stakeholder thanked Samsung representatives for coming to visit.	Kingston Solar LP representatives indicated that it was a pleasure to talk to the individual stakeholders.	4-May-12
10-May-12	E-mail	Mr. ██████ contacted Mr. De Armas to enquire about the status of the projects final plan and to express his concerned for the project to date.	Mr. De Armas indicated that he would be in the Kingston area in the coming weeks and would meet with Mr. ██████. Mr. De Armas also indicated that he was available to address any questions.	10-May-12
11-May-12	E-mail	<p>Individual stakeholder emailed Samsung representatives to confirm that the 90 day notice period had begun and to request a copy of the layout plan.</p> <p>Individual stakeholder further enquired whether the layout was 100% or could still change and whether there would be berming and fencing.</p>	<p>Kingston Solar LP representatives confirmed the 90 day notice period had begun and provided a portion of the full layout.</p> <p>Kingston Solar LP representatives confirmed that the layout confirmed and indicated that there would be visual impact assessment with appropriate mitigation measures. He also indicated that the fencing could be either inside the berm, a low tree line or other alternatives.</p>	11-May-12
30-May-12	Phone Call	Individual inquired about job opportunities.	Individual was thanked for their interest and told that there were no opportunities at this time.	30-May-12
4-Jun-12	E-mail	Individual asked if there had been any changes since meeting with URRPA and asked Samsung to propose three dates to meet with URRPA.	Kingston Solar LP indicated they were discussing the issues brought up during the meeting and have a full understanding of the URRPA's concerns.	4-Jun-12

Date	Contact Type	Comment	Response	Response Date
4-Jun-12	E-mail	Indicated that he had been in contact with consultant responsible for well water testing. Individual inquired about visual impacts and plans for berms in the area.	Had a phone conversation on Friday June 8 <sup>th</sup> . During our conversation I addressed some of his concerns regarding property 11B not being developed, vegetative screening, water well studies, et.al.	8-Jun-12
5-Jun-12	E-mail	Concerned citizens indicate they are very dissatisfied with the consultation process. Noted that Samsung's treatment of the community has been devoid of meaningful consultation to date. Requested immediate response from Samsung.	Concerns noted. Kingston Solar LP replied to the individual previously on June 4, 2012 (above).	N/A
8-Jun-12	Phone Call	Discussion regarding and vegetative screening on the west border of Property 11B and well water studies	Phone Conversation with individual to indicate to him that Kingston solar LP will take the necessary measures to mitigate any visual impact by planting vegetative screening.	8-Jun-12
13-Jun-12	E-mail	<p>Could you help clarify when Dillon Consulting states a one sampling event, I take from that they are taking this one and only water sample?</p> <p>Will there be other post construction samples? If yes how many samples?</p> <p>Will there be samples taken during construction? If yes how many samples? Will there be samples taken after construction? If yes how many samples? Will there be the same water testing at time of decommissioning?</p>	<p>We have taken the initiative to conduct a water well study based on the guidance provided by the Ministry of Environment's (MOE) Eastern Region Groundwater Unit. They have recommended that a groundwater monitoring program be implemented prior to the commencement of the construction phase. Yes, this will be the one and only sample.</p> <p>As required by MOE's Eastern Region Groundwater Unit, Kingston Solar LP will develop a contingency plan that addresses complaints from neighbouring properties that relate to water quality / quantity issues.</p> <p>In the event that a complaint arises against the construction activities, Kingston Solar LP should sample the complainant's well and appropriate monitoring well, if present. The water samples should be submitted as "high priority" to a qualified laboratory. If a problem is confirmed related to the construction activities at the site, then Kingston Solar LP should immediately provide bottled water to the impacted party and implement our contingency plan.</p>	13-Jun-12
13-Jun-12	Phone Call	Discussion regarding water well related Items. Individual proposed the idea of conducting a 3 well water studies for each, prior to construction, during construction and after construction, consequently a total of 9 studies.	Indicated to stakeholder that the water well study was being conducted under the guidance of the MOE. Additional possible measures could take place at a later stage.	13-Jun-12
18-Jun-12	E-mail	Individual indicated they had received the Samsung newsletter and that Dillon consulting had been in contact regarding the well water survey. Arranged for a meeting with Samsung.	<p>Met two stakeholders at once the items discussed were.</p> <ol style="list-style-type: none"> <li>1. The run-off that runs through property 11B onto the stakeholder's land this stream of water runs from late Sept-May. The stakeholder hopes that this water course is not changed or redirected in anyway.</li> <li>2. Trees between property 11A and property 10.</li> <li>3. Visual impact assessment</li> <li>4. Water Testing with stakeholder suggesting that Kingston Solar LP possibly should conduct 3 pre-construction, 3 construction, 3 post construction.</li> </ol>	20-Jun-12
20-Jun-12	E-mail	<p>Now that the studies and applications for the Sol-luce PV Energy Project have been completed by Samsung, I would like to know if a decision has been made regarding the setbacks of solar panel installations from neighbouring property lines. As you are well aware, our riding facility sits very close to the property line adjacent to ██████████ farm, where one of the largest of your installations is slated to be installed. Both myself and another neighbour, ██████████ have petitioned you on a number of occasions to refrain from installing solar panels in the front field (next to the gas pipeline right-of-way) on ██████████ land. According to ██████████, this field was never supposed to be included in the Samsung lease until he finally caved in to badgering and pressure from your company. This particular field is very closely surrounded by our homes and should be excluded from the project. To date, Samsung has provided me no information regarding exclusions, screenings or setbacks in this very sensitive area. I would appreciate some information in this regard as I am sure it is readily available to you. I might add that at your Interim Community meeting that was held at the Kingston Invista Centre, both ██████████ and especially ██████████ (adjacent landowner) both indicated to me that they regretted signing a contract with Samsung and would gladly remove their land from the project if that were possible. The elderly ██████████ went so far as to say he had been contacted multiple times and pressured to finally sign the agreement, which he did not at that time and still does not, fully understand.</p> <p>I received a glossy mail-out piece from Samsung yesterday by mail. In the second paragraph, Mr. Simon Kim proudly states that, "Kingston Solar LP has proactively addressed reasonable and tangible inquiries raised by members of the community, as a result,</p>	<p>Thank you for your email, I hope this email finds you well. I have had the pleasure to speak with you a few times:</p> <ol style="list-style-type: none"> <li>1) One morning on the week of December 19th 2011. I (with Simon Kim) asked you about ██████████ property and you were kind enough to guide us. I gave you my business card and clearly said that if you had any questions please feel free to contact me. I did not hear from you again until I contacted you again.</li> <li>2) Wednesday January 4th at 6:03 pm. During our phone call which lasted approximately 30 minutes, it was evident that you were against the project.</li> <li>3) Tuesday February 28th during the Rural advisory committee: After the meeting, I approached you and talked about the project, I believe ██████████ was part of the conversation. We talked about water drainage, endangered species, wildlife habitat and the possibility of setbacks.</li> </ol>	28-Jun-12

Date	Contact Type	Comment	Response	Response Date
		<p>we have modified our preliminary project layout. These layout changes took place well in advance of the municipal and public consultation activities." I ask you, how could you make changes based on consultation with the municipalities and members of the community when the consultation had not yet been conducted? So far as I know, any input from me or my neighbours has been completely ignored by Samsung.</p> <p>As I am sure you are aware, most people in this community are extremely unhappy about sharing our beautiful homes with an industrial style energy installation of this size. Anything that might be done to reduce it or make it recede into the distance from our homes would be greatly appreciated. I await your reply.</p>	<p>4) Tuesday April 17th during the Interim Community Session: In the feedback form you clearly wrote that you will like setbacks of 30 meters from properties. As you will be able to notice on our preliminary layout we are well over 30 meters away from your residential property.</p> <p>Additionally you wrote (in the feedback form) that water well should be tested, since then we have taken the initiative to test your well water multiple others. The water well study is being conducted under the guidance provided by the Ministry of Environment's (MOE) Eastern Region Groundwater Unit. They have recommended that a groundwater monitoring program be implemented prior to the commencement of the construction phase. As required by MOE's Eastern Region Groundwater Unit, Kingston Solar LP will develop a contingency plan that addresses complaints from neighbouring properties that relate to water quality / quantity issues. In the event that a complaint arises against the construction activities, Kingston Solar LP would sample the complainant's well and appropriate monitoring well, if present.</p> <p>Thus I kindly differ from you statement, as there have not been petitions in "numerous" occasions from you or ██████████ to refrain from solar installation in any specific property. Please understand that we have secured land to develop this project and it is our intent to maximize the use of available "developable" land while still taking into consideration some of the issues raised by stakeholders. You have written some your concerns in the feedback form and we have addressed most of them.</p> <p>Under the REA guidelines there is a consultation process to review the Draft REA reports for the municipalities and stakeholders to comment.</p> <ul style="list-style-type: none"> <li>• The municipal consultation is 90 days prior to the second open house.</li> <li>• The public consultation is 60 days prior to the second open house.</li> </ul> <p>Kingston Solar LP's public and municipal consultation has been ongoing for more than a year. Since then we have held meetings with municipalities, stakeholders and multiple ministries, based on the feedback provided, we have made modifications to our preliminary layout. Therefore the layout that is publicly available is the result of an extensive consultation process. To further clarify your inquiry regarding the second paragraph in the newsletter where it states "These layout changes took place well in advance of the municipal and public consultation activities", this statement refers to the consultation (90 days for municipal and 60 days for public) process required under the REA guidelines to review the Draft and REA reports.</p> <p>Kingston Solar LP has addressed your inquires as I stated above, and thus we most definitely have not ignored inputs from yourself or your neighbours.</p>	

Date	Contact Type	Comment	Response	Response Date
21-Jun-12	Meeting	Discussed items related to his mother's lease agreement and setbacks, access roads on Rock Road.	Discussed mother's lease agreement, setbacks and access roads. Clearly stated to the land owner that it is our intent to maximize the developable area and that setbacks will be considered during the detailed engineering stages.	21-Jun-12
25-Jun-12	E-mail	<p>Concerns expressed from individual.</p> <p>1. Most significant are the claims that your company "understand(s) what is important to local community members and to incorporate their priorities into the project design". As quoted from the laminated document, "Kingston Solar LP has proactively addressed reasonable and tangible inquiries raised by members of the community, and as a result, we have modified our preliminary project layout". How have you accomplished this? It is URRPA's understanding that we have been the most vocal members of the community regarding concerns about your project. What consultation have you engaged in with stakeholders that has modified your layout? I certainly do not feel as though Samsung has engaged our concerns with any seriousness. If I am mistaken, please correct me by outlining specifically how my/URRPA's concerns have altered your original plans. I am disgusted by Samsung's claim that the company understands what is important to community members. We, as a community, have been bulldozed by Samsung and it is my expressed opinion that there has been no meaningful consultation to date with any members of Kingston or Loyalist Township. I feel it is completely and utterly dishonest for Samsung to claim that the company has shown compassion or understanding to local residents. The bullying nature that has been undertaken by at least a few of Samsung's employees to convince local landowners to sign on the dotted line is beyond shameful. My previous next door neighbour, who is a senior citizen, is one and I have often found him in tears over the situation. How has understanding and compassion been shown to him?</p> <p>2. I feel it is extremely misleading to inform people that "Samsung has taken the initiative to conduct a Well Water Survey Program". It is my current understanding that there is no "program" in place. A program is defined as an ordered list of events to take place or various procedures to be followed; a schedule. Correct me if I am wrong, but there is no on-going testing of well water. Samsung has hired a company to take well samples from a number of properties ONCE. This, therefore, simply gives a baseline for what well water quality currently is. Testing of this nature would only be helpful if the testing was to continue through the stages of the proposed project. It is my understanding that neither Samsung nor the company it has hired will be engaging in any well water samples in the future. This leaves the obligation on locals to test their own water for contaminants. I feel this is unreasonable as this project and all negative implications have been forced upon them. It is, once again, completely dishonest of Samsung to claim that there is any program in place to test well water. A program, by definition, would be an on-going testing of local water by a strict schedule before, during, and after the installation of the project...this would properly define a "program" and would at least fulfill what should be an obligation by Samsung to ensure local residents have the same clean drinking water they currently enjoy.</p> <p>3. To say, as quoted from your document, that "our actions to date demonstrate a sincere commitment to maintain a constructive dialogue with members of the community" is not only laughable but truly insulting to those who have attempted time and time again to engage Samsung in meaningful consultation. It is no coincidence that there are "for sale" signs popping up in the area. This, I assure you, is a direct result not only of the project itself but Samsung's lack of empathy and their utter failure at "commitment to maintain a constructive dialogue with members of the community". My husband and I have just moved our young family into a subdivision from our beautiful country home to escape these projects and it is absolutely maddening to me that Samsung preaches to the public about how wonderful they have been to our community. Nothing could be farther from the truth. Although the lies outlined above are outrageous, this statement, more than any of them bring, on my anger.</p>	<p>Regarding the section on the newsletter which reads "Kingston Solar LP has proactively addressed reasonable and tangible inquiries raised by members of the community, and as a result, we have modified our preliminary project layout." Kingston Solar LP's public and municipal consultation has been ongoing for more than a year. Since then Kingston Solar LP has held meetings with municipalities, stakeholders and multiple ministries, based on the feedback provided, we have made modifications to our preliminary layout. Therefore the layout that is publicly available is the result of an extensive consultation process. The following items are the result of our consultation process to date:</p> <p>a. <b>Hydro Poles:</b> We will not build additional Hydro poles throughout our project, instead, Kingston Solar LP will route the collector lines through a joint use agreement with Hydro One and possibly Bell Canada.</p> <p>b. <b>Setbacks:</b> We are no longer building on the property just to the East of Quabbin Road. The installation will be over 200 meters away from your residential property.</p> <p>c. <b>Roads:</b> We will not be using Hegadorn Road to access our installation. Regarding the location of our access roads we consulted with Loyalist Township, County of Lennox and Addington and the City of Kingston prior to the crystallization of our layout.</p> <p>d. <b>Visual Impact:</b> We will be placing vegetative screens, berms or other alternatives in strategic locations to mitigate any potential visual impacts.</p> <p>e. <b>Endangered Species:</b> Our consultations with MNR have prevented us from using certain (sizable) properties where Endangered Species currently have their breeding habitat.</p> <p>The water well study is being conducted under the guidance provided by the Ministry of Environment's (MOE) Eastern Region Groundwater Unit. They have recommended that a groundwater monitoring program be implemented prior to the commencement of the construction phase. As required by MOE's Eastern Region Groundwater Unit, Kingston Solar LP will develop a contingency plan that addresses complaints from neighbouring properties that relate to water quality / quantity issues. In the event that a complaint arises against the construction activities, Kingston Solar LP would sample the complainant's well and appropriate monitoring well, if present.</p> <p>Kingston Solar LP has gone above and beyond what is required under the Renewable Energy Approval (REA) regulations to address your concerns and those of other stakeholders. Therefore Kingston Solar LP has had a significant and sincere commitment to maintain a constructive dialogue with the community.</p>	3-Jul-12
3-Jul-12	E-mail	<p>Follow-up response from individual regarding Samsung's comments (July 3, 2012).</p> <p>1. I must agree that Samsung has met with local residents and municipalities over the proposal of your solar project. One must not, however, confuse meetings with consultation and implementation. The simple fact that Samsung has met with stakeholders does not mean that the feedback they have received has been taken into consideration and applied to the planning. My email to you asked for specific instances where consultation has modified the layout of your project. I will break down your response in more detail:</p>	<p>1. Kindly understand that meetings must occur before any implementation is considered this is just part of any consultation process.</p> <p>a. <b>Hydro Poles:</b> Our intention has always been to have a joint use agreement with Hydro One and Bell, thereby avoiding the construction of additional infrastructure in the municipal/county</p>	31-Jul-12

Date	Contact Type	Comment	Response	Response Date
		<p>a. Hydro Poles: For months, the response of Samsung to stakeholders with respects to hydro generation, hydro poles etc. was "we are in the preliminary stages of development". It should be noted that it is my distinct impression that this response by Samsung was directly related to questions being asked, not to requests from residents on how hydro should be addressed. The first time Samsung was willing to address the topic of hydro was after the Rural Affairs meeting at the beginning of the year. At this time Samsung's position, in response to my strong feeling that all hydro generated should be funnelled toward the 401 and away from the homes along Mud Lake Road and Unity Road, was that they would be using existing hydro poles because any other method would be significantly more expensive. Therefore, the lack of installation of new hydro poles was strictly to save Samsung money, not to adapt their project based on feedback from the community. I will also remind you and Mr. Kim that the strong feelings from the community to move electricity generated from the project along the 401 was ignored.</p> <p>b. Setbacks: As you do not state the reason, I am not sure why you are no longer building on the site east of Quabbin Road. I am confident, however, that this is not because Samsung has decided to listen to the heartache of local residents. My suspicion is that this part of your project has been altered due to the designation of the agricultural land your panels would have been installed on, not in any way due to setbacks. Correct me if I am wrong.</p> <p>***Jose, you certainly have personally indicated to both [redacted] and myself that the installation across the road from [redacted] will have a setback of 200 meters. We were glad to hear this news from you. That said, please do NOT claim that this setback has anything to do with either [redacted] or my requests to have setbacks from our home. You know, as well as I, that this 200 meter setback has nothing to do with stakeholder input and concern. Samsung must set their installation back 200 meters from our previous property because they are mandated to do so by the lease agreement signed with that particular land owner. It was the landowner's request that there be a 200 meter setback. Neither my concerns, nor Samsung's "sincere commitment to maintain constructive dialogue" had anything to do with it. I hope that those who have read your response, and now my rebuttal, understand that any claim by Samsung to have implemented this setback as a result of consultation is completely and utterly false. It is simply one more example of how Samsung twists and turns the truth to appear as though due diligence and meaningful consultation has been employed.</p> <p>c. and d. I will reserve comment for. I have not seen Samsung's specific plans for negating visual impact. I hope that you are correct in your statement that all visual impacts will be mitigated. We will see.</p> <p>e. Endangered Species: This is a non-issue. This does not have any relevance to my expressed concern over Samsung's claims at entering into meaningful discussions with stakeholders. You are mandated by the MNR to follow strict rules so as to protect endangered wildlife. It is one of the very few regulations placed on you. I will remind you, however, that Samsung has attempted to claim exemption from these protective laws to continue with their plans. From what my neighbours, [redacted], has told me you have ignored his requests to have surveying done on his land to investigate the presence of the endangered blue spotted salamander.</p> <p>2. Again, your response discusses requirements dictated to Samsung by ministries that are outside of the company's control. Therefore, the claim that Samsung has taken the initiative themselves continues to be a concern for me. I will reiterate my previous concerns that testing well water once prior to the construction phase is completely inadequate. A "program" as I outlined before, is an ongoing process that follows a schedule. I fail to see how your contingency plan fits that definition, as Samsung takes no proactive approach to that schedule. In your contingency plan, it is up to the residents of the area to test their own water. That, as I have already expressed, is completely unsatisfactory. I think we can all come to the safe conclusion that Samsung has not taken the "initiative" with anything...you have simply followed the bare minimum that has been mandated by the MNR. You may have implemented a "plan" but not, in my opinion, a "program".</p> <p>3. I would agree...our meetings have, for the most part, been cordial. As I have expressed to you on many an occasion, I am not in any way a confrontational person. I strongly dislike tension, awkwardness and conflict of any kind and, although, I have been frosty with you it does not come easily to me. I do not envy the job you do. I certainly must acknowledge your personal availability, Jose. You have been willing to meet at any time and readily taken any phone calls I have made. I can not fault you for that. I recognize that "dialogue" is simply a conversation between two or more people. I suppose my reaction to the quote I mentioned in my original email gets to the deeper meaning of the word - that one not only listens but hears, empathizes, understands and absorbs. When I enter to a dialogue with someone, that is what I am always doing...consciously or sub-consciously. If I misunderstood Samsung's meaning of dialogue, I stand corrected. I am guessing by your response that the intention was to convey the literal meaning of "dialogue", available to the public to talk, rather than what I feel is the deeper meaning - of actually listening, genuinely trying to understand, and absorbing what is heard.</p>	<p>Right of Way (ROW). There are sections in our layout that currently do not have any existing distribution infrastructure on the ROW, and we have decided not build distribution poles on those areas. Please understand this is industry standard (joint use agreements) not only within the renewable energy industry but also in telecommunications and power distribution.</p> <p>b. <b>Setbacks:</b> There has been an extensive consultation process with specific residents in Quabbin Road, and that is one of the key reasons why we decided not to build on the one field located right beside (to East side) of Quabbin Road.</p> <p>c. I would like to make it absolutely clear that I have never claimed that the setback (south of the TransCanada pipeline) across the road from 241 Mud Lake Road had anything to do with yours or [redacted] request. This setback was established by the landowners with who we started consulting in 2011. I have clearly stated this to you and [redacted], and I am reiterating it once again.</p> <p>2. The well water study was conducted under the specific guidance provided by the local Ministry of Environment (MOE) office. After we consulted with MOE's Eastern Region Groundwater Unit we generated the scope of work which was tailored to MOE's directions.</p> <p>3. Yes, I agree that for the <u>most</u> part our meetings have been cordial. I truly hope that the e-mails could get to be as cordial as our meetings.</p>	
8-Jul-12	E-mail	Individual inquired whether there would be visual barriers such as berms from solar panels.	During the detailed design phase of the project, Kingston Solar LP will review setbacks and landscaping on a case-by-case basis.	Throughout the Project study and planning stages
12-Jul-12	E-mail	Individual concerned about the pipes and suggested the use of aluminum pipes. Also suggested cement blocks to eliminate the need for drilling.	Phone conversations with individual where it was clearly stated to the stakeholder that concrete blocks will not be considered as part of our design	16-Jul-12
15-Jul-12	E-mail	Individual requested to speak with Samsung prior to the August 15 2012 open house.	Discussed project over the phone with the individual.	16-Jul-12
16-Jul-12	E-mail	Individual inquired about receiving responses following the July 5th 2012 conference call.	Kingston Solar LP indicated it was still too early to make decisions regarding visual impacts mitigation.	16-Jul-12



APPENDIX I: PUBLIC COMMENT AND RESPONSE SUMMARY TABLE

Date	Contact Type	Comment	Response	Response Date
24-Jul-12	E-mail	Individual inquired about getting well water test results.	Provided update on well water tests by phone.	24-Jul-12
24-Jul-12	E-mail	Individual concerned about berms and water quality. Individual asked for visual effects mitigation plans in writing. Samsung and individual arranged to speak by phone.	Phone conversation with stakeholder and communicated to him that visual mitigation measures will be taken into account. At that time Kingston Solar LP's representative indicated that most likely there will not be a written commitment.	16-Jul-12
26-Jul-12	Phone Call	Discussion regarding vegetative screening, visual impact assessment amongst other items	There will be visual mitigation measures taken on the western border of property 11A	26-Jul-12
30-Jul-12	Phone Call	Discussion regarding concerns about visual impact assessment	There will be visual mitigation measures taken on the western border of property 11A	30-Jul-12
6-Aug-12	E-mail	Individual remains concerned about health impacts, well water, setbacks, and in sufficient consultation process	Had a phone conversation with these stakeholders to address the issues that were raised in this email. Clearly stating to her (and him) that vegetative screening will be taken into account and setbacks could possibly be considered at a later stage during the detail engineering stages.	8-Aug-12
8-Aug-12	Phone Call	Discussed setbacks and visual mitigation measures.	During the phone conversation the stakeholder was informed that setbacks could be considered during the detailed engineering stages, and that visual mitigation measures will be taken into account.	8-Aug-12
18-Aug-12	E-mail	Individual concerned about consultation process now that the last open house has been held. Concerned about visual effect.	Through phone communications with individual it was identified that there will be visual mitigation measures taken on the western border of this individual's property.	21-Aug-12
30-Aug-12	E-mail	<p>Individual submitted an email to various MPPs, Samsung and other persons outlining concerns: Adverse Health Effects on the residents of the greater Unity Road, Kingston and Loyalist Township</p> <p>Re: The combined solar development projects, submitted by Axio Power Canada Inc./SunEdison Canada on behalf of the Kingston Gardiner TS Unity Road, The SunE Westbrook Solar Factory project, and the soon to be applied for Samsung Sol-Luce Kingston Solar PV Energy Project, and the SKyPower Sunspark Loyalist project Total anticipated output, 131 MW</p> <p>Dear Sir,</p> <p>Please accept this letter as my official comment as a resident of the greater Unity Road area which includes but is not exclusive to the hamlets of Sharpton, Westbrook, Glenvale, Elginburg, Glenburnie and Ernestown.</p> <p>Given the overall size and scope of the combined projects within our relatively narrow and densely populated area and the limited scientific evidence produced by developers indicating the construction and subsequent operation of these projects will not adversely affect ground water the residents urge your support. In project plans and draft proposals developers fail to acknowledge the fragile state of the highly vulnerable aquifers found below us that currently yield only shallow and dug well offerings for local residents. Additional health concerns related to the effects of large scale topsoil removal, concentrated drilling and proximity to high voltage are also yet to be scientifically addressed and the include:</p> <ul style="list-style-type: none"> <li>* Construction and operational effects on the air quality in the affected construction radius</li> <li>* Construction drilling, blasting that produces noise, in the affected construction radius</li> <li>* Operational noise in the affected radius from inverters, substations and transmission lines</li> <li>* The effects of herbicides or panel detergents leaching into the fragile limestone below</li> <li>* Unknown risks for residents living within close proximity to the transmission of high voltage</li> <li>* Unknown risks for unborn children and infants in proximity to the transmission of high voltage</li> </ul> <p>Until this research is conducted and the resident concerns are met the Unity Road Rate Payers Association (URRPA), advises that industrial solar factory plans be halted and a longer public consultation process be taken. Additional time is required to allow for the continued study of health effects on people, source water contamination, eco system interruption and time enough for a mitigation process to be installed to ensure all parties are protected.</p> <p>These are significant concerns and so for these reasons we ask the MOE to halt the REA applications of SunEdison and to allow municipalities the right to defer further applications from Samsung and SkyPower until such time as the scientific evidence requested by the Municipality and the residents are met in full.</p>	No response required.	N/A

**APPENDIX J**  
**AGENCY AND MUNICIPAL CONTACT LIST**

### Agency and Municipal Contact List

Agency or Municipality	Office or Department	Title	First Name	Last Name	Mailing Address	City	Province	Postal Code
<b>Federal</b>								
Aboriginal Affairs and Northern Development Canada		Program Officer	Allison	Berman	Terrasses de la Chaudière, 10 Wellington, North Tower	Gatineau	Quebec	K1A 0H4
Aboriginal Affairs and Northern Development Canada		Director			Terrasses de la Chaudière, 10 Wellington, North Tower	Gatineau	Quebec	K1A 0H4
Aboriginal Affairs and Northern Development Canada		Senior Claims Analyst	Don	Boswell	10 Wellington Street	Gatineau	Quebec	K1A 0H4
Aboriginal Affairs and Northern Development Canada		Claims Assessment Officer	Nicole	Cheechoo	10 Wellington Street	Gatineau	Quebec	K1A 0H4
Aboriginal Affairs and Northern Development Canada	Litigation and Portfolio Operations		Franklin	Roy	25 Eddy Street	Gatineau	Quebec	K1A 0H4
Aboriginal Affairs and Northern Development Canada		Claims Analyst	Janet	Townson	10 Wellington St.	Gatineau	Quebec	K1A 0H4
Canadian Environmental Assessment Agency	Ontario Regional Office	Project Manager	Stephanie	Davis	55 St-Clair Ave. East, Room 907	Toronto	Ontario	M4T 1M2
Canadian Environmental Assessment Agency	Media Enquiries		Lucille	Jamault	22nd Floor, Place Bell	Ottawa	Ontario	K1A 0H3
Canadian Environmental Assessment Agency	Ontario Regional Office	Director	Louise	Knox	55 St-Clair Ave. East, Room 907	Toronto	Ontario	M4T 1M2
Environment Canada			Gayle	Thody	4905 Dufferin St.	Toronto	Ontario	M3H 5T4
Environment Canada	National Inquiry Response Team				77 Westmorland Street, Suite 260	Fredericton	New Brunswick	E3B 6Z3
<b>Provincial</b>								
Ministry of Aboriginal Affairs	Aboriginal and Ministry Relationships Branch	Director	Pam	Wheaton	160 Bloor Street East, 9th Floor	Toronto	Ontario	M7A 2E6
Ministry of Aboriginal Affairs		Deputy Minister	Lori	Sterling	160 Bloor Street East, 4th Floor	Toronto	Ontario	M7A 2E6
Ministry of Agriculture, Food and Rural Affairs	Corporate Communications	Director	Annie	Côté-Kennedy	1 Stone Road West	Guelph	Ontario	N1G 4Y2
Ministry of Culture, Tourism and Sports	Culture Programs Unit	Archaeology Review Officer	Katherine	Cappella	Suite 1700, 401 Bay St	Toronto	Ontario	M7A 0A7
Ministry of Culture, Tourism and Sports	Culture Programs Unit	Archaeology Review Coordinator	Abbey	Flowers	Suite 1700, 401 Bay St	Toronto	Ontario	M7A 0A7
Ministry of Culture, Tourism and Sports	Culture Programs Unit	Archaeology Review Officer	Andrew	Hinshelwood	435 James Street South, Suite 334	Thunder Bay	Ontario	P7E 6S7
Ministry of Culture, Tourism and Sports	Culture Services	Archaeology Review Officer-Southwest Region	Shari	Prowse	900 Highbury Avenue	London	Ontario	N5Y 1A4
Ministry of Culture, Tourism and Sports	Culture Services		Winston	Wong	400 University Avenue, 4th Floor	Toronto	Ontario	M7A 2R9
Ministry of Culture, Tourism and Sports	Culture Services Unit	Heritage Planner	Laura	Hatcher	401 Bay St	Toronto	Ontario	M7A 0A7
Ministry of Culture, Tourism and Sports	Development, Tourism and Culture	Director	Cindy	Ball	Hearst Block, 9th Floor, 900 Bay Street	Toronto	Ontario	M7A 2E1
Ministry of Energy and Infrastructure	Energy Supply and Competition Branch, Energy Markets	Team Leader, Project Management Office	Sunita	Chander	880 Bay Street, 3rd Floor	Toronto	Ontario	M7A 2C1
Ministry of Energy and Infrastructure	Regulatory Affairs & Strategic Policy Division		Jennifer	Block	2nd Floor, 880 Bay St.	Toronto	Ontario	M7A 2C1
Ministry of Energy and Infrastructure	Regulatory Affairs & Strategic Policy Division		Denton	Miller	2nd Floor, 880 Bay St.	Toronto	Ontario	M7A 2C1
Ministry of Energy and Infrastructure	Regulatory Affairs & Strategic Policy Division		Robert	Patrick	2nd Floor, 880 Bay St.	Toronto	Ontario	M7A 2C1
Ministry of Municipal Affairs and Housing	Communications	Director	Laura	Blondeau	777 Bay Street, 17th Floor	Toronto	Ontario	M5G 2E5
Ministry of Natural Resources	Aurora District	District Planner (Acting)	S.	Strong	50 Bloomington Road West	Aurora	Ontario	L4G 3G8
Ministry of Natural Resources	Peterborough District	Renewable Energy Planning Ecologist	Eric R.	Prevost	300 Water Street, 1st Floor	Peterborough	Ontario	K9J 8M5
Ministry of Natural Resources	Peterborough District	Manager	Karen	Bellamy	615 John St. N	Aylmer	Ontario	N5H 2S8
Ministry of Natural Resources	Aurora District	District Planner (Acting)	S.	Strong	50 Bloomington Road West, RR#2	Aurora	Ontario	L4G 3G8
Ministry of the Attorney General	Programs and Community Development	Acting Director	Linda	Haldenby	McMurtry-Scott Building, 7210 Bay Street, 11th Floor	Toronto	Ontario	M7A 2S9
Ministry of the Attorney General		Attorney General	Chris	Bentley	720 Bay Street, 11th Floor	Toronto	Ontario	M5G 2K1
Ministry of the Environment	EA and Approvals Branch, Project Coordination Section		Sandra	Guido	2 St Clair Avenue West, 14th Floor	Toronto	Ontario	M4V 1L5
Ministry of the Environment	EA and Approvals Branch, Project Coordination Section	Senior Program Support Coordinator	Narren	Santos	2 St Clair Avenue West, 14th Floor	Toronto	Ontario	M4V 1L5
Ministry of the Environment	Environmental Assessment and Approvals Branch/Air and Noise		Doris	Dumais	2 St Clair Ave W	Toronto	Ontario	M4V 1L5
Ministry of the Environment	Kingston Regional and District	Director	Gayla	Campney	Box 22032, 1259 Gardiners Road	Kingston	Ontario	K7M 8S5
Ministry of the Environment	Minister's Office		Phil	Brennan	12th Fl. - 135 St Clair Ave W	Toronto	Ontario	M4V 1P5
Ministry of the Environment	Operations Division/EA and Approvals Branch		Vic	Scroter	2 St Clair Ave W	Toronto	Ontario	M4V 1L5
Ministry of the Environment		Director of Approvals			1st Floor, 135 Clair Avenue West	Toronto	Ontario	M4V 1P5
Ministry of Transportation	Planning and Environmental Office	Manager	Bill	Jones	1201 Wilson Avenue	Toronto	Ontario	M3M 1J8
Ministry of Transportation	Planning and Environmental Office		Gord	McRae	1201 Wilson Avenue, Building D, 3rd Floor	Toronto	Ontario	M3M 1J8
Ministry of Transportation	Planning and Environmental Office		Stacy	Sweezey	1201 Wilson Avenue, Building D, 3rd Floor	Toronto	Ontario	M3M 1J8
Ministry of Transportation	Kingston Area	Regional Director	Kathryn	Moore	1355 John Counter Blvd, PO Bag 4000	Kingston	Ontario	K7L 5A3
Ontario Federation of Agriculture	Ontario Federation of Agriculture	OFA Member Services Representative	Jim	Hair	100 Stone Rd W, Suite 206	Guelph	Ontario	N1G 5L3
<b>Municipal</b>								
Loyalist Township			Ed	Adams	P.O. Box 70, 263 Main Street	Odessa	Ontario	K0H 2H0
Loyalist Township		Director, Planning & Development	Murray	Beckel	P.O. Box 70, 263 Main Street	Odessa	Ontario	K0H 2H0
Loyalist Township			Ed	Daniliunas	P.O. Box 70, 263 Main Street	Odessa	Ontario	K0H 2H0
Loyalist Township		CAO	Diane	Pearce	P.O. Box 70, 263 Main Street	Odessa	Ontario	K0H 2H0
Loyalist Township		Executive Assistant	Kerry	Rouselle	P.O. Box 70, 263 Main Street	Odessa	Ontario	K0H 2H0
Loyalist Township			Alex	Scott	P.O. Box 70, 263 Main Street	Odessa	Ontario	K0H 2H0
Loyalist Township		Municipal Clerk			P.O. Box 70, 263 Main Street	Odessa	Ontario	K0H 2H0
Loyalist Township Council		Deputy Mayor	Ric	Bresee	18 Cambridge	Amherstview	Ontario	K7N 1R7
Loyalist Township Council		Councillor	Jim	Hegadorn	1275 Kelly Rd	Picton	Ontario	K0K 2T0
Loyalist Township Council		Councillor	John	Ibey	82 Oxford Cres	Amherstview	Ontario	K7N 1P9
Loyalist Township Council		Mayor	Bill	Lowry	26 Green Drive	Amherstview	Ontario	K7N 1W4
Loyalist Township Council		Councillor	Penny	Porter			Ontario	
City of Kingston		City Clerk			216 Ontario Street	Kingston	Ontario	K7L 2Z3
City of Kingston	Planning & Development Department	Director	Grant	Bain	216 Ontario Street	Kingston	Ontario	K7L 2Z3
City of Kingston		Councillor	Sandy	Berg	1794 Unity Road	Glenburnie	Ontario	K0H 1S0

### Agency and Municipal Contact List

Agency or Municipality	Office or Department	Title	First Name	Last Name	Mailing Address	City	Province	Postal Code
City of Kingston	Planning & Development Department	Senior Policy Planner	Sonya	Bolton	216 Ontario Street	Kingston	Ontario	K7L 2Z3
City of Kingston	Planning & Development Department	Manager, Infrastructure & Development	Kimberley	Brown	216 Ontario Street	Kingston	Ontario	K7L 2Z3
City of Kingston			Calvin	Chan	1794 Unity Road	Glenburnie	Ontario	K0H 1S0
City of Kingston		Mayor	Mark	Gerretsen	216 Ontario Street	Kingston	Ontario	K7L 2Z3
City of Kingston		CAO of City of Kingston	Gerard	Hunt	216 Ontario Street	Kingston	Ontario	K7L 2Z3
City of Kingston	Planning & Development Department	Manager, Policy & Planning	Cherie	Mills	216 Ontario Street	Kingston	Ontario	K7L 2Z3
City of Kingston		Receptionist to the Mayor's Office	Rose	Pennock	216 Ontario Street	Kingston	Ontario	K7L 2Z3
City of Kingston		Councillor	Jeff	Scott	1794 Unity Road	Glenburnie	Ontario	K0H 1S0
City of Kingston			George	Wallace	1794 Unity Road	Glenburnie	Ontario	K0H 1S0
County of Lennox & Addington			Larry	Keech	97 Thomas Street East	Napanee	Ontario	K7R 4B9
County of Lennox & Addington		Operations & Development Technologist	Jim	Klaver	97 Thomas Street East	Napanee	Ontario	K7R 4B9
County of Lennox & Addington			Steve	Roberts	97 Thomas Street East	Napanee	Ontario	K7R 4B9
County of Lennox & Addington		County Clerk			97 Thomas Street East	Napanee	Ontario	K7R 4B9