Samsung Renewable Energy Inc. and

Pattern Renewable Holdings Canada ULC

8B Water Body Site Investigation Report

For

Armow Wind Project

Armow Wind Project
Water Body Site Investigation Report

Prepared for:
Golder Associates Ltd.
2390 Argentia Road
Mississauga, ON L5N 5Z7

Project No. 1275 Date: February 2013

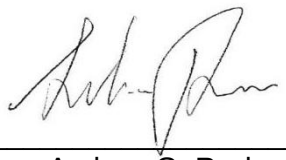
NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Armow Wind Project
Water Body Site Investigation Report

Project Team:

Staff	Role
Andrew Ryckman	Project Manager/Biologist
Pamela Tucciarone	Terrestrial and Wetland Biologist
Ashley Favaro	Aquatic Biologist
Blair Baldwin	Aquatic Biologist
Brian Watson	Aquatic Biologist
Valerie Stevenson	Aquatic Biologist
Erica Frey	GIS Technician

Report submitted on February 15, 2013



Andrew G. Ryckman

225 Labrador Drive, Waterloo, Ontario, N2K 4M8 **Tel:** (519) 725-2227 **Fax:** (519) 725-257 **Web:** www.nrsi.on.ca **Email:** info@nrsi.on.ca

TABLE OF CONTENTS

List of Tables

List of Figures

List of Appendices

1.0 Introduction

The Armow Wind Project (the "Project") is an up to 180 megawatt (MW) commercial wind energy generation facility located primarily on leased privately owned lands in the Municipality of Kincardine, Bruce County, Ontario. The Project is being developed by SP Armow Wind Ontario GP Inc., in its capacity as general partner of SP Armow Wind Ontario LP (the "Proponent"). The Proponent is a joint venture limited partnership owned by affiliates of Pattern Renewable Holdings Canada ULC ("Pattern") and Samsung Renewable Energy Inc. ("Samsung").

Natural Resource Solutions Inc. (NRSI) was retained in 2011 by Golder Associates Ltd., on behalf of the Proponent, to conduct a water body assessment in accordance with the Renewable Energy Approval (REA) Regulation. This assessment includes a records review, site investigation, and impact assessment of any water bodies located near the proposed 180MW capacity wind facility in Bruce County, Ontario. The analysis of the water body features is one issue being considered. Other factors, such as natural heritage, land ownership, social impacts, and cultural impacts are also being assessed under separate covers as outlined by the REA Regulation.

The proposed Armow Wind Project area is located in the Municipality of Kincardine, Bruce County, and more specifically, located southeast of the Town of Tiverton, Ontario (Figure 1). The proposed wind project includes the installation of up to 98 operational wind turbines, as well as supporting infrastructure and development activities, including turbine access roads, overhead and underground electrical collector cabling, meteorological towers, junction boxes, interconnect areas and substations.

As identified in the REA Regulation, the proposed layout of these features is collectively referred to as the 'project location'. This includes turbines and associated infrastructure as described above, as well as any areas that may be used temporarily during construction (i.e. staging areas, crane pads, crane walks etc.) For the purposes of this report, NRSI will refer to the areas within 120m of the project location as the 'project area'.

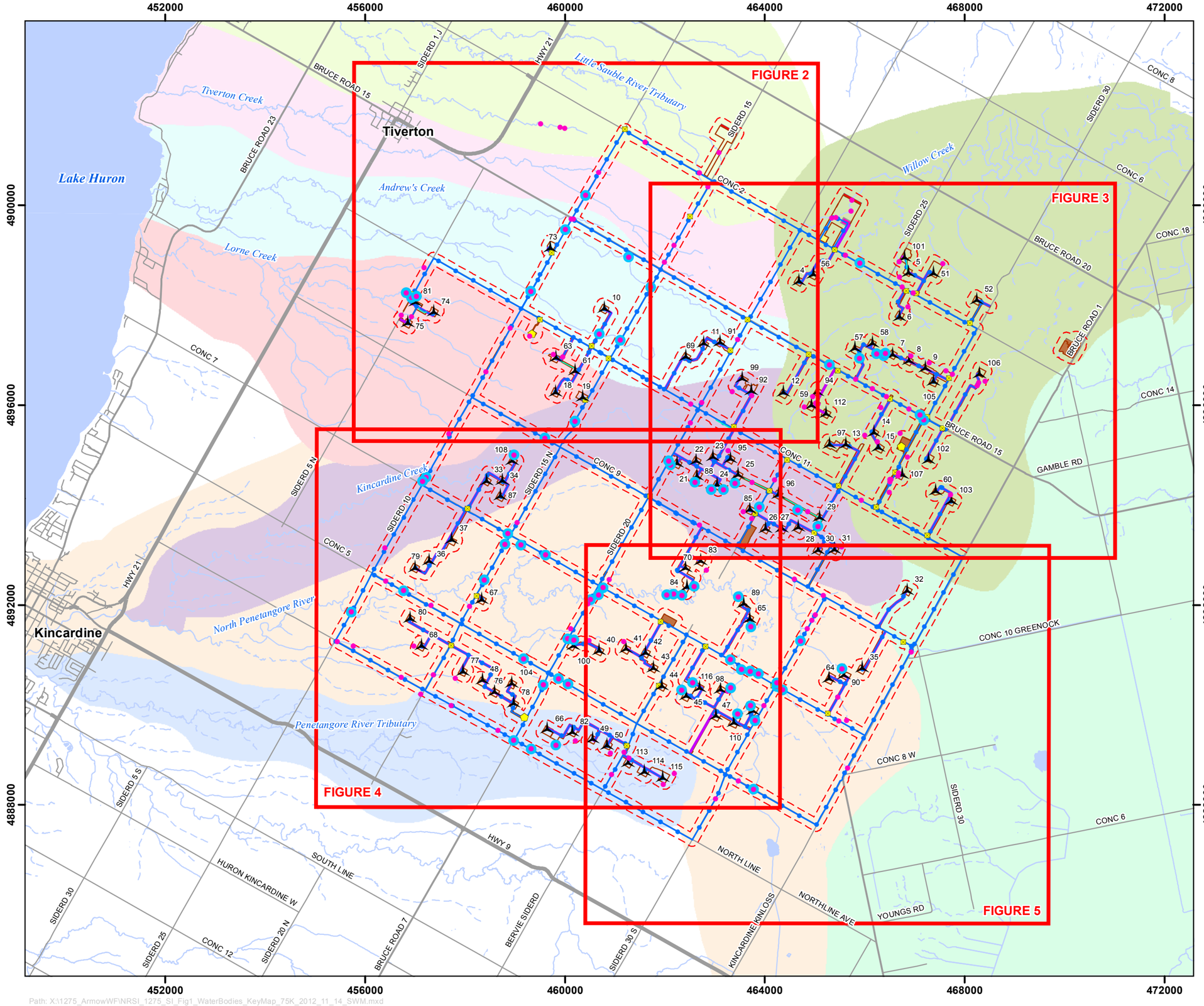
In accordance with the REA Regulation, NRSI has conducted a thorough records review of available background resources to identify any water bodies (lakes, seepages, intermittent/permanent watercourses) within 120m, or Lake Trout (*Salvelinus namaycush*) lakes within 300m, of the 'project location' as defined by the REA Regulation. The records review assessment includes a detailed review of all available background information from a variety of sources, including Ontario Ministry of Natural Resources (OMNR), municipal files, existing biological studies, and other available online and/or published resources. This background review was used to inform the direction of site investigation and help determine the perminance of water bodies identified through site investigations.

As part of this project, NRSI has considered all aspects relating to provincially Threatened and Endangered species. However, since these species are addressed as part of the *Endangered Species Act* (2007), they have not been discussed within any of these Water Body reports. These species will be addressed in full detail, including a habitat description and results of field assessments, potential impacts, and recommended mitigation measures, as part of a separate *Approval and Permitting Requirements Document (APRD)* to be submitted to the OMNR under separate cover, where necessary.

Figure 1

Armow Wind Project

Site Investigation Water Bodies Key Map



Legend

- Map Extents
- Project Area (120m)
- Proposed Turbine (L16 Rev0)
- MET Tower
- Junction Box
- Crane Walk
- Cabling
- Access Road
- Disturbance Area
- Potential Operations Building
- Substation
- Staging Area
- Interconnect Area
- Highway
- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody
- Waterbody Location
- Non-waterbody Location

Subwatershed Boundaries

- Andrew's Creek
- Kincardine Creek
- Little Sauble River
- Lorne Creek
- North Penetangore River
- Penetangore River Tributary
- Teeswater River
- Tiverton Creek
- Willow Creek

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Project: 1275
Date: December 5, 2012

NAD83 - UTM Zone 17
Size: 11x17"
1:75,000

0 1 2 3 4 Kilometers

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Figure 2

Armow Wind Project

Site Investigation Water Bodies

Legend

- Project Area (120m)
- Proposed Turbine (L16 Rev0)
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- Interconnect Area
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- Primary Road
- Secondary Road
- Watercourse (Permanent)
- Watercourse (Intermittent)
- Waterbody
- ANSI, Life Science
- Provincially Significant Wetland
- Non-Provincially Significant Wetland
- Waterbody Location
- Non-waterbody Location

Subwatershed Boundaries

- Andrew's Creek (A)
- Kincardine Creek (PNK)
- Little Sauble River (L)
- Lorne Creek (LO)
- North Penetangore River (PN)
- Penetangore River Tributary (P)
- Teeswater River (TW)
- Tiverton Creek (T)
- Willow Creek(STW)

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Project: 1275
Date: Wednesday, December 05, 2012

NAD83 - UTM Zone 17
Size: 11x17"
1:30,000

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Figure 3

Armow Wind Project

Site Investigation Water Bodies

Legend

- Project Area (120m)
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- Willow Creek(STW)

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Project: 1275
Date: Wednesday, December 05, 2012

NAD83 - UTM Zone 17
Size: 11x17"
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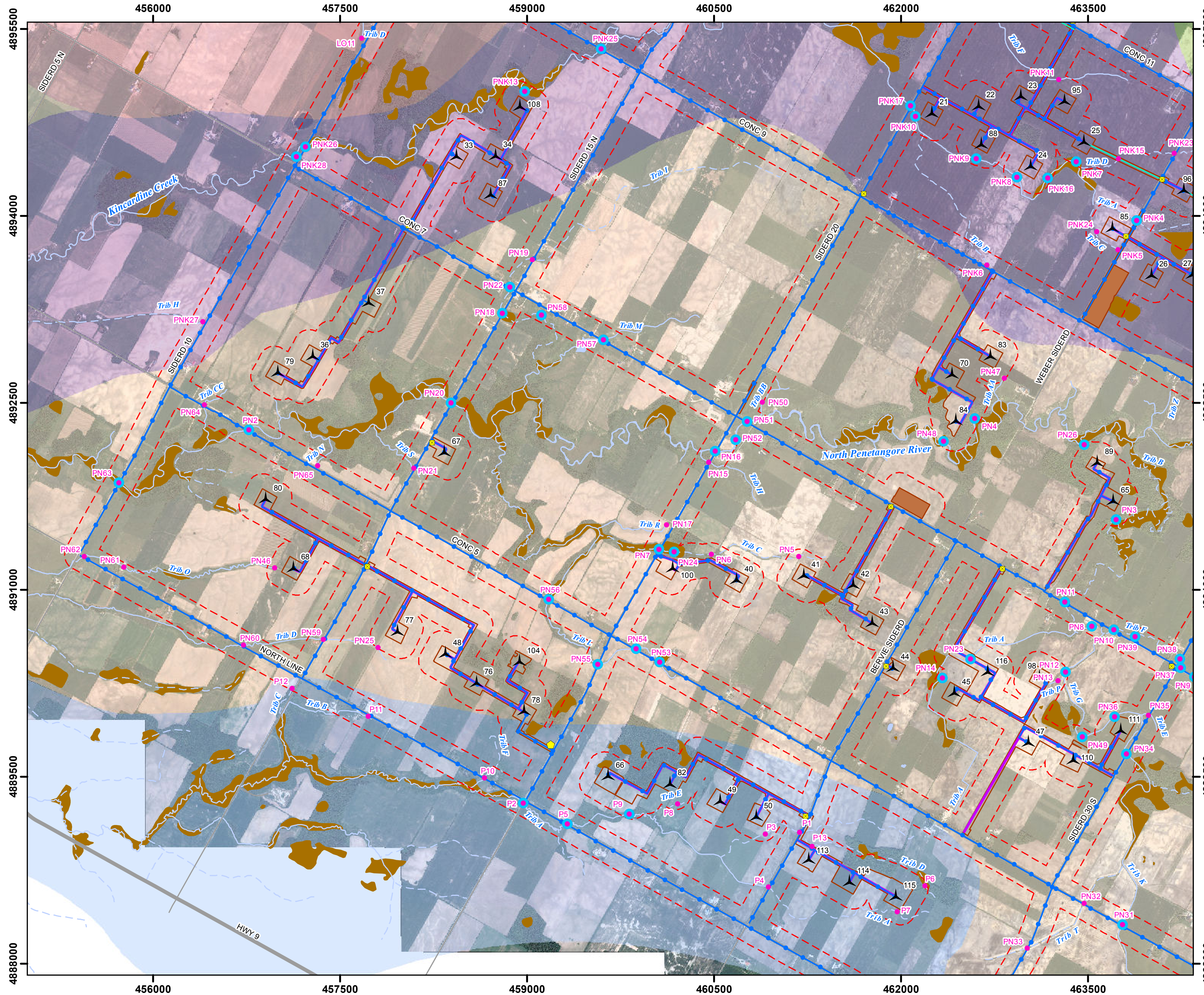
Figure 4

Armow Wind Project

Site Investigation Water Bodies



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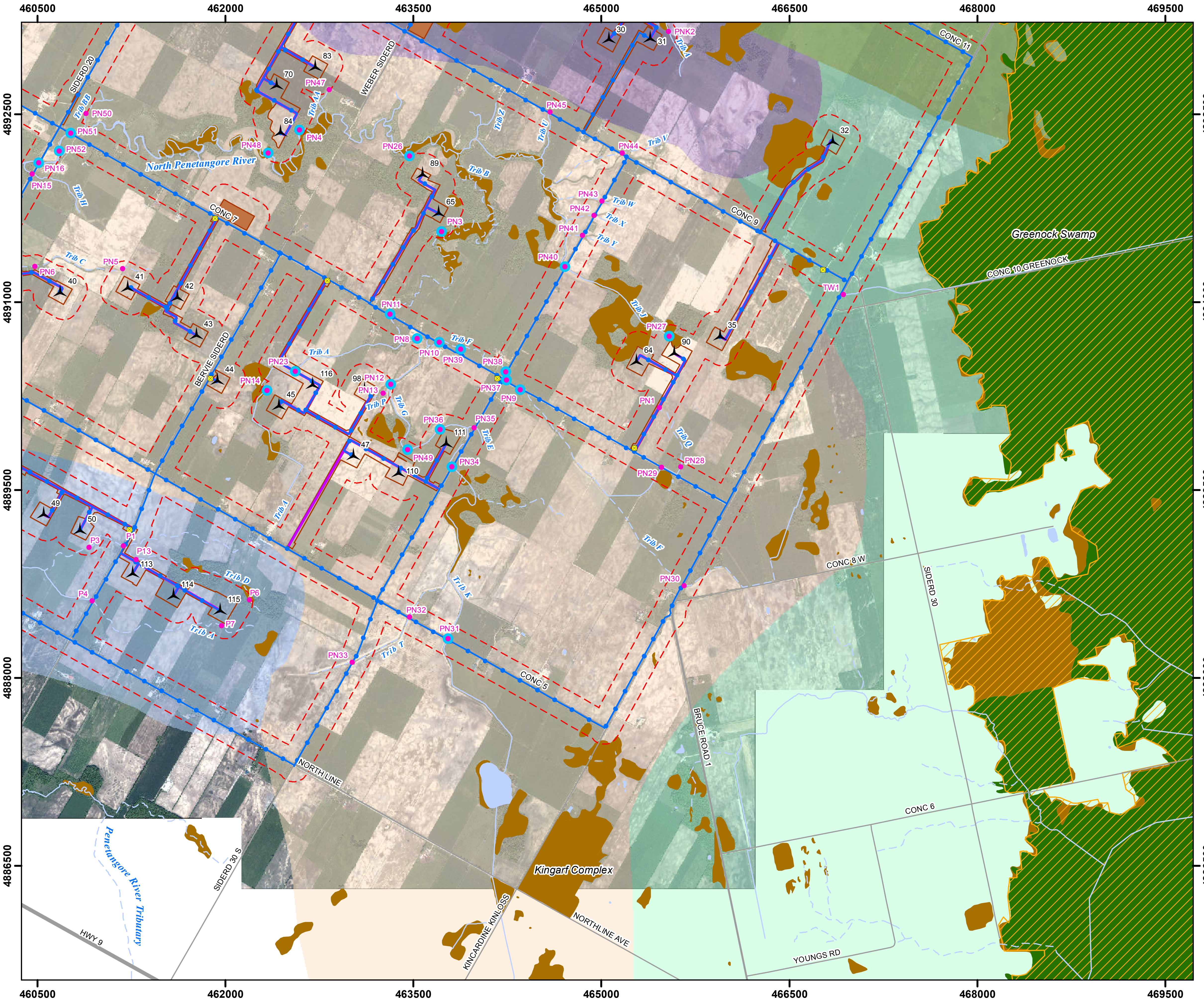
Path: X:\1275_ArmowWF\NRSI_1275_SI_Fig2-5_WaterBodies_30K_2012_11_14_SWM.mxd

Figure 5

Armow Wind Project

Site Investigation Water Bodies



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2.0 REA Requirements

Ontario Regulation (O. Reg.) 359/09 – *Renewable Energy Approvals* Under *Part V.0.1 of the Act*, (herein referred to as the REA Regulation) made under the *Environmental Protection Act* (*EPA*) identifies the requirements for the development of renewable energy projects in Ontario. In accordance with the REA regulation, the Armow Wind Project, classified as a Class 4 wind facility, is required to complete a REA submission.

Section 31 (1) subject to subsection (2) of the REA Regulation requires proponents of Class 4 wind projects to undertake a water site investigation for the purpose of determining:

(a) whether the results of the analysis summarized in the report prepared under subsection 30(2) are correct or require correction, and identifying any required corrections;
(b) whether any additional water bodies exist, other than those identified in the records review;
(c) the boundaries, located within 120m of the project location, of any water body that was identified in the records review or the site investigation; and
(d) the distance from the project location to the boundaries determined under clause (c).

The REA Regulation has specific requirements if designated lake trout lakes are present within 300m of the project location. These requirements were not deemed applicable to this project as no such lakes were found during the Water Body Records Review Report (NRSI 2012).

Subsection (3) of Section 31 of the REA Regulation requires the proponent to prepare a report setting out the following:

1. A summary of any corrections to the report prepared under subsection 30 (2) and the determinations made as a result of conducting the site investigation under subsection (1).
2. Information relating to each water body identified in the records review and in the site investigation, including the type of water body, plant and animal composition and the ecosystem of the land and water investigated.
3. A map showing,
   i. The boundaries mentioned in clause (1) (c) or (2) (c) and (d),
   ii. The location and type of each water body identified in relation to the project location, and
   iii. The distances mentioned in clause (1) (d) or (2) (e).
4. The dates and times of the beginning and completion of the site investigation.
5. The duration of the site investigation.

6. The weather conditions during the site investigation.
7. A summary of methods used to make observations for the purpose of the site investigation.
8. The name and qualifications of any person conducting the site investigation.
9. Field notes kept by the person conducting the site investigation.

3.0 Staff Roles

The requirements of the REA Regulation indicate that the names and qualifications of all staff participating in the site investigation should be included, and are thus provided below.

Andrew G. Ryckman, B.Sc.
Andrew is a Terrestrial and Wetland Biologist with 8 years of environmental experience. He routinely manages the natural heritage aspects of renewable energy projects, with specific expertise relating to bats and herpetofauna. Andrew is certified in Ecological Land Classification (2010), and has successfully completed a Bat Conservation International (BCI) Acoustic Monitoring Workshop (2008).

Andrew's role in this project was to act as project advisor, providing input on field work and reporting as well as liaising directly with several agency staff.

Pamela Tucciarone, B.Sc.
Pamela has more than 3 years of practical work experience. She has experience mapping vegetation communities, conducting vegetation inventories and wildlife habitat assessments for birds, bats, herpetofauna, and mammals. She also has experience conducting tree inventories, risk assessments, implementing integrated pest management practices, and environmental monitoring. She has more than 2 years of experience detecting the presence of the emerald ash borer and delineating the extent of its infestation. Pamela is a Certified Arborist (2011) and is certified in the Northeastern Ecological Land Classification system for Ontario (2011). Pamela routinely participates and coordinates field investigations and reporting for wind and solar power projects throughout Ontario.

Pamela coordinated most of the natural heritage surveys, as well as conducted vegetation mapping and wildlife habitat assessment surveys within the project area. Pamela's role in this project was to provide additional input into the assessment of the water bodies based on the results of natural heritage studies, with specific emphasis on potential seepage areas and riparian vegetation.

Ashley Favaro, M. Env. Sc.
Ashley is an Aquatic Biologist with 8 years of work experience in the environmental field. Her areas of expertise include fish community and aquatic habitat assessments. She is experienced in a variety of different field data collection methods and has completed surveys in a number of different habitat types including lakes, coastal wetlands, reservoirs, large rivers, and streams with warm and coldwater fish assemblages. Ashley is certified in the Ontario Stream Assessment Protocol (OSAP) (2005) as well as level 2 fish identification (2010) under the protocol. She is also well versed in a variety of benthic invertebrate sampling protocols including Ontario Benthos Biomonitoring Network (OBBN) and has experience with species identification. Ashley regularly contributes to reports and routinely reviews scientific literature in support of projects.

Ashley was responsible for compiling data and assisting in the completion of water body reports.

Blair Baldwin, B.Sc.
Blair has two years of experience as an Aquatic Biologist. His areas of expertise include fish habitat surveys, habitat mapping, and fish community assessments, but he also has experience with benthic invertebrate surveys and species identification.

Blair was responsible for conducting the site investigations and data compilation.

Brian Watson, F.W.T.
Brian is an Aquatic Biologist with more than one year of work experience in the environmental field. His areas of expertise are fish and fish habitat surveys, environmental monitoring, and benthic invertebrate surveys. Brian has completed the fish identification course through the Royal Ontario Museum (2011) and obtained his Ontario Benthos Biomonitoring Network Certificate (2010).

Brian was responsible for completing site investigations, data compilation and assisting in the completion of this report.

Valerie Stevenson, Dip. Env.
Valerie is an Aquatic Biologist with over 9 years of experience in the environmental field. Her expertise is within the areas of freshwater aquatic habitat, biology of freshwater fishes, benthic macroinvertebrate organisms, surface water and sediment quality. Valerie designs, coordinates, manages, analyzes and reports on a variety of aquatic biology monitoring and assessment projects. She also works regularly on multidisciplinary project teams where she contributes her aquatic biology expertise with an integrated understanding of all environment components.

Valerie was the lead author of the water body reports and coordinated the completion of all water body reports.

Erica Frey, Dip GIS
Erica specializes in delivering mapping services using GIS applications and assists with NRSI's spatial technologies. Her project experience includes, but is not limited to, the collection and creation of various datasets, the geocoding of addresses, the use of AutoCAD with integration into GIS, and the use of hard and soft data through scanning and georeferencing into digital format. Erica has produced various digital maps and datasets for publication. She also has education and experience in the field of urban planning and is familiar with municipal mapping and procedures.

Erica was responsible for creating the mapping for the water body reports.

4.0 Summary of Records Review

In accordance with the REA Regulation, NRSI has completed a comprehensive records review for the proposed Armow Wind Project area (NRSI 2012). The results of this records review have been summarized in Table 1 below. For more detail the reader is referred to the complete report (NRSI 2012).

Table 1. Summary of Records Review of the Armow Wind Project

Criteria	Associated Water Body Features
i. In a water body	The records review has identified 63 potential water bodies that are currently overlapping the project location. These overlaps typically represented proposed crossing locations for access roads, transmission lines, or cabling. All of these water bodies represent potential permanent or intermittent watercourses. All of these potential water bodies are currently considered cold water fisheries, unless site specific surveys show otherwise. Each of these potential water bodies will be examined in more detail during the site investigation phase of this project.
ii. Within 120m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity	None
iii. Within 300m of the average annual high water mark of a lake trout lake that is at or above development capacity	None
iv. Within 120m of the average annual high water mark of a permanent or intermittent stream	The records review has identified 82 potential water bodies within 120m of the project location, including 4 within the Lorne Creek drainage, 3 within the Little Sauble River Tributary drainage, 4 within Tiverton Creek drainage, 3 within Andrew's Creek drainage, 9 within Kincardine Creek drainage, 30 within the North Penetangore River drainage, 22 within the Willow Creek drainage, 6 within the Penetangore River drainage and 1 within the Teeswater River drainage. All of these water bodies represent potential permanent or intermittent watercourses, and are currently considered cold water fisheries.
iv. Within 120m of a seepage area	None

5.0 Site Investigation Methodology

In accordance with the REA Regulation, comprehensive site investigations were carried out within the Armow Wind Project area. These site investigations focused on confirming presence, absence, and extent of any potential water bodies identified during the records review, including specific attention to any corrections to water body mapping required including the identification of any previously unidentified features, and to characterize identified water bodies. Results of these site investigations will be used to identify proximity of water bodies to project components and identify requirements for mitigation and impact assessment.

A summary of site investigation methodology is found in the following sections.

5.1 Survey Dates

In accordance with the REA Regulation, NRSI recorded dates, times, duration, and weather conditions during each site investigation. This information has been summarized in Table 2 below. Detailed descriptions of staff roles and qualifications can be found in Section 3.0 of this report, and completed site investigation field data forms have been included in Appendix I.

Table 2. Site Investigation Survey Details

Staff Name(s)	Date (2011)	Duration (hrs)	Weather Conditions		
			Temp. (°C)	Beaufort Wind	Cloud Cover (%)
Blair Baldwin, Brian Watson	October 24	4	14	1	0
Blair Baldwin, Brian Watson	October 25	10	8	3	100
Blair Baldwin, Brian Watson	October 26	10	7	3	100
Blair Baldwin	October 27	10	5	2	100
Blair Baldwin, Brian Watson	October 28	8	7	2	40
Nathan Miller, Christy Humphrey	November 4	2	1	0	5
Blair Baldwin	November 18	8	-1	2	40
Blair Baldwin	November 23	8	6	2	20
Blair Baldwin	December 9	4	-3	2	100

5.2 Lakes and Lake Trout Lakes

No lakes or Lake Trout lakes were identified during the records review. As such, no targeted site investigations were undertaken to characterize this feature type. General presence/absence surveys were undertaken and confirmed the absence of lakes.

5.3 Permanent and Intermittent Streams

Prior to field investigations, potential intermittent/permanent watercourses were identified through review of all available natural features mapping as part of the records review (NRSI 2012). Field investigations were focused on confirming presence of these features as well as any additional watercourse features that may not be shown on existing mapping.

Once a potential watercourse was identified during site investigations, it was further assessed to determine if it meets the definition of a "water body" within the REA Regulation. Under this definition, a water body includes intermittent/permanent watercourses only, and does not include grassed waterways, temporary channels for surface drainage, such as furrows or shallow channels that can be tilled and driven through, rock chutes and spillways, or roadside ditches (that do not contain a permanent or intermittent stream).

Once a watercourse was identified as an intermittent/permanent watercourse, specific water body data was gathered during the site investigations. This involved walking the entire extent of each feature identified within the project area, and in many cases beyond to confirm its point of origin. For each feature, NRSI biologists collected a wide range of field information, including (but not limited to) wetted width, water depth, substrate, vegetation and habitat present, and any groundwater indicators. At each location, photographs and specific UTM coordinates were also taken.

5.4 Seepage Areas

No seepage areas were identified through the records review, however the potential for such features to exist within the project area was recognized (NRSI 2012). Site investigations were carried out to identify the presence of seepage areas within the project area. These investigations were conducted concurrently with other water body site investigations as well as during wetland site assessments completed for the Natural Heritage Assessment.

During site investigations, groundwater seepage areas were to be identified through a characterization of site-specific characteristics including direct observations of groundwater upwelling, the presence of groundwater indicator plant species (e.g. watercress (*Nasturtium officinale),* dense patches of jewelweed (*Impatiens capensis*)), or iron-staining of soils and substrates.

6.0 Site Investigation Results

NRSI biologists completed a comprehensive site investigation of the aquatic resources within the Armow Wind Project area. These surveys have been completed in accordance with the REA Regulation and the results have been summarized below.

6.1 Lakes

6.1.1 Lake Trout Lakes

Site investigations confirmed the absence of any Lake Trout lakes.

6.1.2 Other Lakes

Site investigations confirmed the absence of any lakes within the project area.

6.2 Permanent or Intermittent Watercourses

NRSI biologists have confirmed a total of 22 permanent or intermittent watercourses within the project area. Of these, 21 have been identified as overlapping the project location, including proposed crossing locations of access roads and/or cabling. The remaining watercourse is as close as 17m from the project location, without any direct overlap with project components. For the purposes of this report, these watercourses have been divided and discussed based on their respective drainage areas which include the North Penetangore River, Penetangore River Tributary, Willow Creek (Saugeen/Teeswater), Lorne Creek, Andrew's Creek, Tiverton Creek, Little Sauble Tributary, Kincardine Creek (North Penetangore River Tributary), and Teeswater River drainage areas. These locations and watercourse features are shown on Figures 1-5 and are discussed in Sections 6.2.1 to 6.2.9 below.

Site investigation field notes are provided in Appendix I. Water body site investigation photographs are provided in Appendix II. Detailed habitat information specific to each water body location is provided in Appendix III.

6.2.1 North Penetangore Drainage Area

The records review has identified a total of 30 potential watercourses associated with the North Penetangore River drainage area within the project area (NRSI 2012).

NRSI biologists conducted site investigations on these 30 potential water bodies and have confirmed that 11 features have characteristics that are consistent with the definition of a water body within the REA Regulation. A total of 3 of these features (Tributary C, F and I) are considered water bodies at some locations within the project area and non-water bodies at other locations. The changes in water body designations is due to the nature of headwater features and the resulting changes in permanency and definition of the feature. The remaining 19 potential watercourses identified at the records review phase were examined as part of the site investigation and were confirmed not to be water bodies. A summary of site conditions associated with all features considered during the site investigation, including distances to project location, is provided in Table 3 below.

Table 3. Water Body Site Investigations Summary for Armow Wind Project Area – North Penetangore River Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
North Penetangore River	PN4	Intermittent/Permanent water body, naturalized channel	**Yes**	WT – >120 AR – 83 **CB – 83** CA – 83 BU - >120	**Yes**
	PN16	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN20	Intermittent/Permanent water body, naturalized channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN26	Intermittent/Permanent water body, naturalized channel	**Yes**	WT - >120 AR - >120 CB - >120 **CA - 116** BU - >120	**Yes**
	PN48	Intermittent/Permanent water body, naturalized channel	**Yes**	WT - >120 AR - >120 CB - >120 **CA - 80** BU - >120	**Yes**
	PN51	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** **CA - 87** BU - >120	**Yes**

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
	PN52	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - 91** CA - >120 BU - >120	**Yes**
	PN63	Intermittent/Permanent water body, naturalized channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN2	Intermittent/Permanent water body, naturalized channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
Tributary A	PN14	Intermittent/Permanent, naturalized channel, leaf litter covering channel bottom	**Yes**	**WT - 105 (T45)** AR - >120 CB - 73 **CA - 73** BU - >120	**Yes**
	PN23	Intermittent/Permanent water body, channelized	**Yes**	WT - >120 **AR - Crossing** **CB - Crossing** **CA - Crossing** BU - >120	**Yes**
Tributary B	PN3	Intermittent/Permanent water body, naturalized channel	**Yes**	**WT – 97 (T65)** AR - >120 CB - >120 **CA - 69** BU - >120	**Yes**
	PN11	Intermittent/Permanent water body, good connectivity with flood plain	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
Tributary C	PN5	Ephemeral, poorly defined channel	No	N/A	No
	PN6	Ephemeral, poorly defined channel, terrestrial grasses throughout	No	N/A	No
	PN7	Intermittent/Permanent water body, naturalized channel	**Yes**	WT - >120 **AR - 43** **CB - Crossing** **CA - 43** BU - >120	**Yes**
	PN24	Intermittent/Permanent water body, naturalized channel	**Yes**	**WT - 84 (T100)** **AR - 60** **CB - 60** **CA - 60** BU - >120	**Yes**
Tributary D	PN25	Ephemeral, poorly defined channel	No	N/A	No
	PN59	Ephemeral, poorly defined channel	No	N/A	No
	PN60	Ephemeral, poorly defined channel	No	N/A	No

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary E	PN35	Ephemeral, poorly defined channel	No	N/A	No
Tributary F	PN9	Intermittent/Permanent, channelized through agricultural fields	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN10	Intermittent/Permanent water body, defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN30	Ephemeral, channelized ditch	No	N/A	No
	PN37	Intermittent/Permanent, channelized through agricultural fields	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - 72 BU - >120	**Yes**
	PN38	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR ->120 **CB - Crossing** **CA - 88** BU - >120	**Yes**
	PN39	Intermittent/Permanent, naturalized channel downstream	**Yes**	WT - >120 AR - >120 **CB - 39** CA - >120 BU - >120	**Yes**
Tributary F	PN8	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - 55** CA - >120 BU - >120	**Yes**
Tributary G	PN12	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 CB - >120 **CA - 106** BU - >120	**Yes**
	PN34	Intermittent/Permanent, channelized through agricultural fields	**Yes**	WT - >120 AR - >120 CB - Crossing **CA – 98** BU - >120	**Yes**
	PN36	Intermittent/Permanent, channelized through agricultural fields	**Yes**	**WT - 74 (T111)** **AR - 114** CB - >120 **CA - 28** BU - >120	**Yes**
	PN49	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 CB - >120 **CA - 55** BU - >120	**Yes**
Tributary H	PN15	Ephemeral, poorly defined channel	No	N/A	No

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary I	PN18	Intermittent/Permanent, poorly defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN19	Ephemeral, poorly defined channel, channelized	No	N/A	No
	PN22	Intermittent/Permanent, defined channel , piped underground down stream	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
Tributary I	PN58	Intermittent/Permanent, natural meandering channel	**Yes**	WT - >120 AR - >120 **CB - 65** CA - >120 BU - >120	**Yes**
Tributary J	PN27	Intermittent/Permanent, channelized ditch	**Yes**	**WT - 93 (T90)** AR - >120 CB - >120 **CA - 32** BU - >120	**Yes**
	PN40	Intermittent/Permanent, channelized ditch	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
Tributary K	PN31	Intermittent/Permanent , channelized ditch	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
Tributary L	PN53	Intermittent/Permanent , defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN54	Intermittent/Permanent , defined channel, aquatic vegetation present	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN55	Intermittent/Permanent , channelized through agricultural fields	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PN56	Intermittent/Permanent water body, naturalized channel	**Yes**	WT ->120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary M	PN57	Intermittent/Permanent , defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
Tributary N	PN65	Ephemeral, poorly defined channel	No	N/A	No
Tributary O	PN61	Ephemeral, poorly defined channel	No	N/A	No
	PN62	Ephemeral, poorly defined channel	No	N/A	No
	PN46	No water body feature present	No	N/A	No
Tributary P	PN13	No water body feature present	No	N/A	No
Tributary Q	PN1	No water body feature present	No	N/A	No
	PN28	Tile drained, no water body feature present	No	N/A	No
	PN29	Ephemeral, no defined channel	No	N/A	No
Tributary R	PN17	Ephemeral, channelized through agricultural fields	No	N/A	No
Tributary S	PN21	Ephemeral, no defined channel	No	N/A	No
Tributary T	PN32	Ephemeral, no defined channel	No	N/A	No
	PN33	Ephemeral, no defined channel	No	N/A	No
Tributary U	PN45	Ephemeral, no defined channel	No	N/A	No
Tributary V	PN44	Ephemeral, no defined channel	No	N/A	No
Tributary W	PN43	Ephemeral, no defined channel	No	N/A	No
Tributary X	PN42	Ephemeral, no defined channel	No	N/A	No
Tributary Y	PN41	Ephemeral, no defined channel	No	N/A	No
Tributary Z	PN46	Ephemeral, no defined channel	No	N/A	No
Tributary AA	PN47	Ephemeral, no defined channel	No	N/A	No
Tributary BB	PN50	Ephemeral, no defined channel	No	N/A	No
Tributary CC	PN64	Ephemeral, no defined channel	No	N/A	No

Legend
WT - Wind Turbine
AR - Access Road
CB - Cabling
CA - Construction Activity (includes crane walk, and staging and disturbance areas)
BU - Building (includes substation and point of interconnection)
N/A - Not Applicable
*Note: Bold indicates a requirement for an EIS. Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.2.2 Penetangore River Tributary Drainage Area

The records review identified a total of 6 unnamed tributaries associated with the Penetangore River Tributary drainage area within the project area (NRSI 2012).

NRSI biologists conducted site investigations on these 6 potential water bodies and have confirmed that 1 of these features has characteristics that are consistent with the definition of a water body, as defined by the REA Regulation. This water body, Tributary A, is considered a water body at some locations within the project area and a non-water body at other locations. The change in water body designation is due to the nature of headwater features and the resulting changes in permanency and definition of the feature. A summary of site conditions associated with all 6 features considered during the site investigation, including distances to project location, is provided in Table 4.

Table 4. Water Body Site Investigations Summary for Armow Wind Project Area – Penetangore River Tributary Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary A	P2	Intermittent/Permanent water body, channel braided upstream	**Yes**	WT - >120 AR - >120 **CB - 21** CA - >120 BU - >120	**Yes**
	P4	Ephemeral, no defined channel	No	N/A	No
	P5	Intermittent/Permanent water body, defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	P7	Ephemeral, no defined channel	No	N/A	No
	P9	Intermittent/Permanent, naturalized channel	**Yes**	WT - >120 AR - >120 CB - >120 **CA - 80** BU - >120	**Yes**

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary B	P11	Ephemeral, no defined channel	No	N/A	No
Tributary C	P12	Ephemeral, no defined channel, wetland area	No	N/A	No
Tributary D	P1	Ephemeral, no defined channel	No	N/A	No
	P3	Ephemeral, no defined channel	No	N/A	No
	P6	Ephemeral, no defined channel	No	N/A	No
	P13	Ephemeral, no defined channel	No	N/A	No
Tributary E	P8	Ephemeral, no defined channel	No	N/A	No
Tributary F	P10	Ephemeral, no defined channel	No	N/A	No

Legend
WT - Wind Turbine
AR - Access Road
CB - Cabling
CA - Construction Activity (includes crane walk, and staging and disturbance areas)
BU - Building (includes substation and point of interconnection)
N/A – Not Applicable
*Note: Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.2.3 Willow Creek Drainage Area (Saugeen/Teeswater)

The records review has identified a total of 22 potential watercourses associated with the Willow Creek drainage area within the project area (NRSI 2012).

NRSI biologists conducted site investigations on these 22 potential water bodies and have confirmed that 4 features have characteristics that are consistent with the designation of a water body, as defined by the REA Regulation. One of these features, Tributary G, is considered a water body at some locations within the project area and a non-water body at other locations. The change in water body designations is due to the nature of headwater features and the resulting changes in permanency and definition of the feature. A total of 18 features are not considered water bodies. A summary of site

conditions associated with each of these 22 potential water bodies considered during the site investigation, including distances to project location, is provided in Table 5 below.

Table 5. Water Body Site Investigations Summary for Armow Wind Project Area – Saugeen Teeswater Willow Creek Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Willow Creek	STW 11	Intermittent/permanent water body with a defined channel	**Yes**	**WT - 95 (T7)** **AR - Crossing** **CB - Crossing** **CA - Crossing** BU - >120	**WT - 95 (T7)** **AR - Crossing** **CB - Crossing** **CA - Crossing** BU - >120
	STW25	Intermittent/permanent water body, natural meandering channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120
Tributary A	STW2	Ephemeral, tile drain , water body not present	No	N/A	N/A
	STW29	Ephemeral, tile drain , water body not present	No	N/A	N/A
	SWT41	Ephemeral, tile drain , water body not present	No	N/A	N/A
Tributary B	STW7	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120
	STW9	Intermittent/Permanent water body with a defined channel	**Yes**	WT – >120 **AR - Crossing** **CB - Crossing** **CA – Crossing** BU - >120	WT – >120 **AR - Crossing** **CB - Crossing** **CA – Crossing** BU - >120
	STW38	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 **AR - 49** **CB - 49** **CA - 49** BU - >120	WT - >120 **AR - 49** **CB - 49** **CA - 49** BU - >120

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary C	STW10	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 **AR - 39** **CB - 39** **CA - 39** BU - >120	WT - >120 **AR - 39** **CB - 39** **CA - 39** BU - >120
Tributary D	STW12	Ephemeral, poorly defined channel	No	N/A	N/A
	STW13	Ephemeral, poorly defined channel	No	N/A	N/A
	STW23	Ephemeral, poorly defined channel	No	N/A	N/A
	STW39	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary E	STW18	Ephemeral, tile outlet	No	N/A	N/A
Tributary F	STW20	Ephemeral, poorly defined channel	No	N/A	N/A
	STW42	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary G	STW21	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** **CA - 16** BU - >120	WT - >120 AR - >120 **CB - Crossing** **CA - 16** BU - >120
	STW30	Ephemeral, poorly defined channel	No	N/A	N/A
	STW31	Ephemeral, poorly defined channel	No	N/A	N/A
	STW37	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** **CA - 96** BU - >120	WT - >120 AR - >120 **CB - Crossing** **CA - 96** BU - >120
Tributary H	STW1	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary I	SWT24	Ephemeral, poorly defined channel	No	N/A	N/A

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary J	STW3	Ephemeral, poorly defined channel	No	N/A	N/A
	STW27	Ephemeral, poorly defined channel	No	N/A	N/A
	STW33	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary K	STW15	Ephemeral, poorly defined channel	No	N/A	N/A
	STW28	Ephemeral, poorly defined channel	No	N/A	N/A
	STW36	Ephemeral, poorly defined channel	No	N/A	N/A
	STW44	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary L	STW35	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary M	STW4	Ephemeral, poorly defined channel	No	N/A	N/A
	STW32	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary N	STW34	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary O	STW8	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary P	STW14	Ephemeral, poorly defined channel	No	N/A	N/A
	STW19	Ephemeral, poorly defined channel	No	N/A	N/A
	STW40	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary Q	STW5	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary R	STW6	Ephemeral, poorly defined channel	No	N/A	N/A
	STW22	Ephemeral, poorly defined channel	No	N/A	N/A

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
	STW43	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary S	STW16	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary T	STW17	Ephemeral, poorly defined channel	No	N/A	N/A
	STW45	Ephemeral, poorly defined channel	No	N/A	N/A
	STW46	Ephemeral, poorly defined channel	No	N/A	N/A
	STW47	Ephemeral, poorly defined channel	No	N/A	N/A
Tributary U	STW26	Ephemeral, poorly defined channel	No	N/A	N/A

Legend
WT - Wind Turbine
AR - Access Road
CB - Cabling
CA - Construction Activity (includes crane walk, and staging and disturbance areas)
BU - Building (includes substation and point of interconnection)
N/A – Not Applicable
*Note: Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.2.4 Lorne Creek Drainage Area

The records review has identified a total of 4 unnamed tributaries of Lorne Creek within the project area (NRSI 2012).

Detailed site investigations have confirmed that one of these features has site characteristics that warrant a designation of a water body, as defined by the REA Regulation. Ths feature, Tributary A, is considered a water body at some locations within the project area and a non-water body at other locations. The change in water body designation is due to the nature of headwater features and the resulting changes in permanency and definition of the feature. A summary of site conditions associated with all 4 features examined during the site investigation, including distances to project location, is provided in Table 6 below.

Table 6. Water Body Site Investigations Summary for Armow Wind Project Area – Lorne Creek Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary A	LO1	Ephemeral, non-existing water body, tile drain	No	N/A	No
	LO2	Intermittent/Permanent, channelized ditch	**Yes**	**WT - 43 (T81)** **AR – 17** **CB - Crossing** **CA - 17** BU - >120	**Yes**
	LO4	Intermittent/Permanent, channelized ditch, fish observed	**Yes**	WT - >120 AR – >120 CB - >120 **CA - >120** BU - >120	**Yes**
	LO5	Ephemeral, channelized through agricultural fields	No	N/A	No
	LO7	Intermittent/Permanent water body with defined channel	**Yes**	**WT – 73 (T81)** **AR - >120** **CB - >120** **CA - 84** BU - >120	**Yes**
	LO9	Ephemeral, poorly defined channel	No	N/A	No
	LO12	Ephemeral, poorly defined channel	No	N/A	No
Tributary B	LO3	Ephemeral, poorly defined channel	No	N/A	No
	LO8	Ephemeral, poorly defined channel	No	N/A	No
	LO10	Ephemeral, poorly defined channel	No	N/A	No
Tributary C	LO6	Ephemeral, poorly defined channel	No	N/A	No
Tributary D	LO11	Ephemeral, poorly defined channel	No	N/A	No

Legend
WT - Wind Turbine
AR - Access Road
CB - Cabling
CA - Construction Activity (includes crane walk, and staging and disturbance areas)
BU - Building (includes substation and point of interconnection)
N/A – Not Applicable

*Note: Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.2.5 Andrew's Creek Drainage Area

The records review has identified a total of 3 watercourse features associated with Andrew's Creek drainage area within the project area (NRSI 2012).

NRSI biologists conducted site investigations on the identified watercourse features and have confirmed that 2 of these watercourses have characteristics that warrant a designation as a water body, as defined by the REA Regulation. A summary of site conditions associated with all features considered during the site investigation, including distances to project location, is provided in Table 7 below.

Table 7. Water Body Site Investigations Summary for Armow Wind Project Area – Andrew's Creek Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Andrew's Creek	A2	Ephemeral, poorly defined channel	No	N/A	No
	A5	Intermittent/Permanent, channelized ditch	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	A6	Intermittent/Permanent, channelized ditch	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	A8	Intermittent/Permanent, channelized ditch	**Yes**	WT - >120 AR - >120 **CB - 100** CA - >120 BU - >120	**Yes**
Tributary A	A1	Intermittent/Permanent, channelized ditch	**Yes**	WT - >120 **AR - Crossing** **CB - Crossing** **CA - Crossing** BU - >120	**Yes**

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
	A3	Intermittent/Permanent, non-existent upstream, channelized ditch downstream	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	A4	Intermittent/Permanent, channelized ditch	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
Tributary B	A7	Ephemeral, poorly defined channel	No	N/A	No
	A9	Ephemeral, poorly defined channel	No	N/A	No

Legend
WT - Wind Turbine
AR - Access Road
CB - Cabling
CA - Construction Activity (includes crane walk, and staging and disturbance areas)
BU - Building (includes substation and point of interconnection)
N/A – Not Applicable
*Note: Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.2.6 Tiverton Creek Drainage Area

The records review has identified a total of 4 potential watercourses associated with the Tiverton Creek drainage area within the project area (NRSI 2012).

NRSI biologists conducted site investigations on the potential watercourses and have confirmed that 1 watercourse, the main channel of Tiverton Creek, has characteristics that justify designation of a water body, as defined by the REA Regulation. A summary of site characteristics associated with all features considered during the site investigation, including distances to project location, is provided in Table 8 below.

Table 8. Water Body Site Investigations Summary for Armow Wind Project Area –Tiverton Creek Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)

Tiverton Creek	T1	Intermittent/Permanent, channelized ditch	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
Tributary A	T2	Ephemeral, poorly defined channel	No	N/A	No
Tributary B	T3	Ephemeral, poorly defined channel	No	N/A	No
Tributary C	T4	Ephemeral, poorly defined channel	No	N/A	No

Legend
WT - Wind Turbine
AR - Access Road
CB - Cabling
CA - Construction Activity (includes crane walk, and staging and disturbance areas)
BU - Building (includes substation and point of interconnection)
N/A – Not Applicable
*Note: Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.2.7 Little Sauble Tributary Drainage Area

The records review has identified a total of 3 unnamed tributaries of Little Sauble Tributary within the project area (NRSI 2012).

NRSI biologists conducted site investigations on the identified watercourse features and have confirmed that none of these potential watercourses have characteristics that warrant consideration as a water body, as defined by the REA Regulation. A summary of site characteristics associated will all features considered during the site investigation is provided in Table 9 below.

Table 9. Water Body Site Investigations Summary for Armow Wind Project Area –Little Sauble Tributary Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary A	L3	Ephemeral, channelized	No	N/A	No
	L2	Ephemeral, poorly defined channel	No	N/A	No
Tributary B	L1	Ephemeral, poorly defined channel	No	N/A	No
Tributary C	L4	Ephemeral, poorly defined channel	No	N/A	No

Legend
N/A – Not Applicable
*Note: Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.2.8 Kincardine Creek Drainage Area

The records review has identified a total of 9 potential watercourses associated with the Kincardine Creek drainage area within the project area (NRSI 2012).

NRSI biologists conducted site investigations on these 9 potential water bodies and have confirmed that 2 of these watercourses have characteristics that warrant water body designation, as defined by the REA Regulation. One of these features, Tributary A, is considered a water body at some locations within the project area and a non-water body at other locations. The change in water body designation is due to the nature of headwater features and the resulting changes in permanency and definition of the feature. A summary of site conditions associated with all features considered during the site investigation, including distances to project location, is provided in Table 10.

Table 10. Water Body Site Investigations Summary for Armow Wind Project Area – Kincardine Creek (North Penetangore River Tributary) Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Kincardine Creek	PNK13	Intermittent/Permanent water body, naturalized channel	**Yes**	**WT – 79 (T108)** AR - >120 CB - >120 **CA - 56** BU - >120	**Yes**
	PNK22	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PNK25	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** CA - >120 BU - >120	**Yes**
	PNK26	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB -Crossing** CA - >120 BU - >120	**Yes**

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Kincardine Creek	PNK28	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - 29** CA - >120 BU - >120	**Yes**
Tributary A	PNK2	Ephemeral, poorly defined channel	No	N/A	No
	PNK3	Intermittent/Permanent water body, channelized drainage ditch	**Yes**	**WT - 117 (T29)** AR - >120 **CB - Crossing** **CA - Crossing** BU - >120	**Yes**
	PNK4	Intermittent/Permanent water body with a defined channel	**Yes**	WT - >120 AR - >120 **CB - Crossing** **CA - Crossing** BU - >120	**Yes**
	PNK7	Intermittent/Permanent water body, naturalized channel	**Yes**	**WT – 116 (T25)** AR - >120 CB - >120 **CA - 92** BU - >120	**Yes**
	PNK8	Intermittent/Permanent water body, channelized through agricultural fields	**Yes**	**WT – 87 (T24)** AR - >120 CB - >120 **CA - 54** BU - >120	**Yes**
	PNK9	Intermittent/Permanent water body, channelized through agricultural fields	**Yes**	**WT – 65 (T88)** AR - >120 **CB - 115** **CA - 78** BU - >120	**Yes**
	PNK10	Intermittent/Permanent water body, channelized through agricultural fields	**Yes**	**WT – 82 (T21)** AR - >120 **CB - 69** **CA - 34** BU - >120	**Yes**
Tributary A	PNK12	Intermittent/Permanent water body, channelized through agricultural fields	**Yes**	**WT - 60 (T8)** **AR - >120** CB - >120 **CA - 55** BU - >120	**Yes**

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
	PNK16	Intermittent/Permanent water body, channelized through agricultural fields	**Yes**	**WT – 112 (T24)** AR - >120 CB - >120 **CA - 89** BU - >120	**Yes**
	PNK17	Intermittent/Permanent water body, channelized through agricultural fields	**Yes**	WT - >120 AR - >120 **CB - Crossing** **CA - 110** BU - >120	**Yes**
Tributary B	PNK6	Ephemeral, poorly defined channel	No	N/A	No
Tributary C	PNK5	Ephemeral, poorly defined channel	No	N/A	No
	PNK24	Ephemeral, poorly defined channel	No	N/A	No
Tributary D	PNK15	Ephemeral, poorly defined channel	No	N/A	No
	PNK23	Ephemeral, poorly defined channel	No	N/A	No
Tributary E	PNK14	Ephemeral, poorly defined channel	No	N/A	No
Tributary F	PNK11	Ephemeral, poorly defined channel	No	N/A	No
	PNK18	Ephemeral, poorly defined channel	No	N/A	No
Tributary G	PNK1	Ephemeral, poorly defined channel	No	N/A	No
	PNK19	Ephemeral, poorly defined channel	No	N/A	No
	PNK20	Ephemeral, poorly defined channel	No	N/A	No
	PNK21	Ephemeral, poorly defined channel	No	N/A	No
Tributary H	PNK 27	Ephemeral, poorly defined channel	No	N/A	No

Legend
WT - Wind Turbine
AR - Access Road

CB - Cabling
CA - Construction Activity (includes crane walk, and staging and disturbance areas)
BU - Building (includes substation and point of interconnection)
N/A – Not Applicable
*Note: Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.2.9 Teeswater River Drainage Area

The records review has identified a total of 1 potential watercourse associated with the Teeswater River drainage area within the project area (NRSI 2012).

NRSI biologists conducted site investigations on the identified watercourse feature and have confirmed that the watercourse does not have characteristics that warrant consideration as a water body, as per the REA Regulation definition of a water body. A summary of site conditions of this feature obtained during the site investigation, is provided in Table 11 below.

Table 11. Water Body Site Investigations Summary for Armow Wind Project Area – Teeswater River Drainage Area

Water Body Feature Name	Water Body Location ID	Description of Water Body at Water Body Location	Water Body (Yes/No)	Distance to Project Location Component (m)	EIS Required (Yes/No)
Tributary A	TW1	Ephemeral, poorly defined channel	No	N/A	No

Legend
N/A – Not Applicable
*Note: Measurements are taken from the closest distance to a water body from a given project component, and not necessarily from the specific location of the site investigation.

6.3 Seepage Areas

No seepage areas were identified through the site investigations.

7.0 Modifications to the Records Review

Results of the site investigation led to one main modification to the records review assessment, the re-classification of intermittent/permanent watercourses or 'water bodies' to 'non-water body' features. These modifications are discussed further below.

The records review identified a total of 82 potential water bodies located within 120m of the proposed Armow Wind Project, with 63 of these potential water bodies showing a potential overlap with project location. Upon completion of detailed site investigations and comparison with the Regulation definition of a water body, NRSI has revised this number to reflect site specific conditions.

NRSI biologists have confirmed the presence of 22 water bodies located within 120m of the project location. Of these 22 water bodies, 21 are currently shown overlapping the project location. These overlaps are related to proposed crossing locations of supporting infrastructure, including access roads and/or cabling.

8.0 Summary of Site Investigation

In accordance with the REA Regulation, NRSI has completed water body site investigations for the proposed Armow Wind Project area. Site investigations were conducted to confirm the presence/absence of water bodies identified during the records review (NRSI 2012), pinpoint any corrections to features identified during the records review, and document new water bodies not previously identified. Field investigations also focused on the characterization of the identified features. The results of this records review have been summarized in Table 6 below.

Table 12. Summary of Water Body Site investigations for the Armow Wind Project

Criteria	Associated Water Body Features
i. In a water body	Site investigations have confirmed the presence of 21 water bodies overlapping the project location, more specifically crossing access roads and/or cabling. These water body overlaps are present within several of the drainage areas discussed in more detail within report, including Lorne Creek drainage area (1), Tiverton Creek drainage area (1), Andrew's Creek drainage area (2), Kincardine Creek drainage area (2), North Penetangore River drainage area (11), Willow Creek drainage area (3), and the Penetangore River drainage area (1). All of these water body crossing locations are being treated as cold water fisheries, and represent permanent or intermittent watercourses. Each of these water bodies will be discussed in detail as part of the Environmental Impact Study.
ii. Within 120m of the average annual high water mark of a lake, other than a lake trout lake that is at or above development capacity	None
iii. Within 300m of the average annual high water mark of a lake trout lake that is at or above development capacity	None
iv. Within 120m of the average annual high water mark of a permanent or intermittent stream	Site investigations have confirmed the presence of 22 water bodies within the project area, including 1 within the Lorne Creek drainage area, 1 within Tiverton Creek drainage area, 2 within Andrew's Creek drainage area, 2 within Kincardine Creek drainage area, 11 within the North Penetangore River drainage area, 4 within the Willow Creek drainage area, and 1 within the Penetangore River drainage area. All of these water bodies are currently designated as

	cold water fisheries, and will be discussed in more detail within the Environmental Impact Study.
iv. Within 120m of a seepage area	None

9.0 References

Natural Resource Solutions Inc. July 2012. Armow Wind Project Water Body Report Records Review. (NRSI 2012)

Appendix I
Site Investigation Field Notes

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Renewable Energy Water Body Site Investigation

Project # 1275	Project Name: Arrow	Crew: Shar B, Brian W	Date 24-Oct-11	Start Time:	End Time:
Weather	Air temp 14	Wind 1	Precipitation 0	Cloud Cover 30%	

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/S)	Flowing water (Y or N)	Turbidity (L/M/H)	Substrate % (fine, gravel, cobble, boulder)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater and prolonged wetness indicators (seeps, springs, veg, temp of spring vs watercourse) -NOTES-	Photo # BER - Camera u/s	Photo # BER - Camera d/s	Photo # BER - Camera Channel
PS	459318 4889105	4	0.2	2	2	L	Y	L	90 F 10 C	50 SR 50 G	L	none BV: pasture/ T. Grass	—	0018	0019	0020
P9	464356 4890307	2	0.5	2	1	L	Y	L	70 F 30 G	100 G	L	none BV: TGrass/ Sedges	—	0021	0022	0023
PN 10	463704 4890685	4	0.25	1	1	M	Y	L	90 F 10 C	20 G 30 SR 40 FR	L	none BV: T-Grass/ Sedges	—	0024	0025	0026
PN 11	463311 4890911	7	2	5	0.5	M	Y	M	40 F 60 G	50 G 50 SR	L	none BV: Pasture T. Grass	—	0027	0028	0029
PN 51	460781 4892350	5	2	3	1	M	Y	L	70 F 30 G	40 G 40 SR 20 FR	L	none BV: Pasture T. Grass	—	0031	0033	0034

BV = Bank Veg

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/S)	Flowing water (Y or N)	Turbidity (L/M/H)	Substrate % (fine, gravel, cobble, boulder)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type)(ie. Terrestrial vs aquatic	Groundwater and prolonged wetness indicators (seeps, springs, veg, temp of spring vs watercourse) -NOTES-	Photo #		
														u/s	d/s	Channel
STW 21	467182 4875697	4	1.28	2.8	04	M	Y	H	80 F 10 G 10 C	60G 20SR 20 Pool	L	T. Grass + Softstem bulrush BV: T. Grass + Herbs	none	270	271	272
STW 20	465933 4894095	2	NO access	0.8	–	very slow	Y	m	/	70 Pool 30 G	L	T-Grass BV: T Grass + Herbs	none	273	275	277
PN 19	460515 4892111	9	NO access	9	–	M	Y	L	/	60G 20SR 20P	L	↓	none	278	279	280
PN 17	460168 4891545	NO define Channel	–	1.75	0.07	L	Y	H	80F 20G	100G	L	T. Grass BV: willow + T Grass	none	281	282	283
PNK 20	469733 4896056	3.5	0.99	3	0.75	L	Y	M	90F 10B	40G 60P	L	cattail + T Grass BV: Thistle, cattail + T. Grass	100+ tadpoles none	284	285	286
A2	463454 4892311	2.1	0.44	1.3	0.22	L	Y	H	100F	80G 20 P	L	T. Grass BV: T. Grass + Herbs	none	287	288	289

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Renewable Energy Water Body Site Investigation

Project # 1275	Project Name: Armow	Crew: Blair B, Brian W	Date 25-Oct-11	Start Time:	End Time:
Weather	Air temp 10.3	Wind 3	Precipitation moderate Rain	Cloud Cover 100%	

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/S)	Flowing water (Y or N)	Turbidity (L/M/H)	Substrate % (fine, gravel, cobble, boulder)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater and prolonged wetness indicators (seeps, springs, veg, temp of spring vs watercourse) -NOTES-	Photo # u/s	Photo # d/s	Photo # Channel
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
PN6	460452 4891288	1.25	0.56	0.85	0.19	L	Y	H	70 F 20 G 10 C	30 G 70 SR	L	T. Grass BU: D. Trees	none	40	41	43
PN7	460084 4891321	3	0.6	2.5	0.48	L	Y	H	100 F	50 G 50 P	L	T. Grass BU: T Grass D Trees	none	44	45	46
PN8	456980 4891180	10	2.5	3	0.49	L	Y	L	100 F	100 G	L	T. Grass BU: D. Trees Cattails	none	50	51	52
STW 7	465304 4892813	1.8	0.16	6.7 Flooded	0.16	Very L	Y	M	100 F	50 G 50 P	L	T Grass BU: T Grass Sedges	Tile Drain	53	54	55
STW 8	465825 4896518	0.5	0.3	0.2	0.2	L	Y	H	100 F	100 G	L	T. Grass BU - T Grass	none	60	61	62
STW 15	466968 4898243	3	0.16	3	0.16	Very L	Y	M	100 F	50 G 50 P	L	T. Grass BU: Cattail	none	63	64	65

BU = Bank Veg

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/S)	Flowing water (Y or N)	Turbidity (L/M/H)	Substrate % (fine, gravel, cobble, boulder)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type)(ie. Terrestrial vs aquatic	Groundwater and prolonged wetness indicators (seeps, springs, veg, temp of spring vs watercourse) -NOTES-	Photo #		
														u/s	d/s	Channel
STW 16	467603 4898838	1.65	0.11	1.65	0.11	M	Y	H	60 F 40 Detritus	100 P	L	T. Grass BU: D. Trees	none	67	69	70
L02	456911 4898187	3.6	0.44	3.2	0.09	H	Y	H	70 F 30 C	70 P 30 G	L	T. Grass + Sedge BU - Shrubs	none	71	72	73
L03	456736 4897797	2.5	0.5	2.25	0.06	M	Y	M	70 F 30 C	60 G 30 SR 10 FR	L	T - Grass BU: Shrubs	none	74	75	76

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Renewable Energy Water Body Site Investigation

Project # 1275	Project Name: Armow	Crew: Blair B, BrianW	Date 26-Oct-11	Start Time:	End Time:
Weather	Air temp 7	Wind 3	Precipitation Light Rain	Cloud Cover 100	

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/S)	Flowing water (Y or N)	Turbidity (L/M/H)	Substrate % (fine, gravel, cobble, boulder)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater and prolonged wetness indicators (seeps, springs, veg, temp of spring vs watercourse) -NOTES-	Photo # u/s	Photo # d/s	Photo # Channel
PN1	465472 4890467	no water body											N-78 S-79 E-80 W-81			
PN3	463560 4891477	1.72	0.36	1.53	0.07	H	Y	L	40F 30C 30b	60SR 40FR	M	T. Grass BV: D. Trees	Tile Drain	83	84	85
PN9	462217 4891987	0.39	0.14	0.26	0.05	L	Y	H	100F	50G 50SR	M	T. Grass BV: C. Trees	—	91	93	94
[redacted]																
PNK 1	463344 4896267	3.4	1.06	3	0.42	H	Y	L	60F 30C 10G	30SR 70FR	L	T-Grasses Cattail	Tile drain	95	96	97
PNK 2	465531 4893171	2.18	0.77	1.92	0.52	M	Y	L	90G 10C	90G 10SR	L	T-Grass/ Shrubs	Tile Drain	98	99	100
PNK 3	465064 4895580	2.05	0.64	1.93	0.45	M	Y	L	50F 10C 40G	70G 30SR	L	Herbs/ T-Grass	—	101	102	103

BV = Bank Veg

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/S)	Flowing water (Y or N)	Turbidity (L/M/H)	Substrate % (fine, gravel, cobble, boulder)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type)(ie. Terrestrial vs aquatic	Groundwater and prolonged wetness indicators (seeps, springs, veg, temp of spring vs watercourse) -NOTES-	Photo # u/s	Photo # d/s	Photo # Channel
PNK 4	463900 4893971	2.15	0.3	3.4 flooded	0.55	m	Y	L	60F 40C	70SR 30FR	L	Milkweed T-grass/herbs BV. milkweed/T-grass	—	105	106	107
PNK 5	463748 4893709	—											No surface water	N-108 S-109 E-110 W-111		
PNK 6	462731 4893563	—											No surface water	N-112 S-113 E-114 W-115		
PN 7	463369 4894438	2	0.62	4.1 Flooded	0.84	M	Y	L	50 F 40 C 10 G	70 G 30 SR	L	T-Grass BV: herbs/t-grass D. Trees	—	118	119	120
PNK 8	462922 4894324	4.3	0.7	5.4 flooded	0.84	m	Y	L	70 F 30 C	90 SR 10 FR	L	Herbs /T. Grass BV- Herbs/T. Grass	—	121	122	123
PNK 9	462367 4894520	1.7	0.47	2.7 flooded	0.58	H	Y	L	70F 30C	60SR 40FR	L	↓	—	125	127	128
PNK 10	462104 4894848	4	1.05	5 flooded	1.3	m	Y	L	70F 30C	50G 50SR	L	↓	—	129	130	132
PNK 11	463270 4895082	—											No surface water	N-133 S-134 E-135 W-136		
STW 11	466416 4897032	4.5	0.91	4.25	0.66	m	Y	m	100F	40G 50SR 10FR	L	T Grass BV: T. Grass/ herbs	—	138	139	140

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Renewable Energy Water Body Site Investigation

Project #	Project Name:	Crew	Project Supervisor	Date
1278	ARMOR	Blue B Brown W		27-Oct-11

Weather	Air temp	Wind	Precipitation	Cloud Cover	Survey start time:	Survey end time:
Mist	3	2	Light Rain	100		

Indicate an X for yes and a strike through for no or not applicable

Site #	GPS	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimension	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	Photo # d/s	Photo # Channel
	17T															
PN5	461188 4891249	No Surface water												N 150 S 151 E 152 L 153		
PNK14	458080 4894468	4	0.9	1.31	0.14	m	Y	H	70G 20F 10C	30G 40SR 30P	L	T.Grass BV: D.Tree/Shrub/Fern		155	156	157
P1	461088 4889104	1.3	0.28	0.8	0.09	Very L	Y	H	100F	10G 90P	L	T.Grass BV: Herbs/T.Grass		158	159	160
P3	460089 4889246	1.4	0.12	0.5	0.09	m	Y	H	90F 10C	100P	L	T.Grass/Herb BV: Herbs	Tile Drain	161	162	163
STW2	466496 4894503	2.7	0.5	1.6	0.21	m	Y	L	80F 20G	80G 20P	L	T.Grass BV: Herbs		164	165	166
STW3	466262 4894503	Grassed water way												N 168 S 170 E 171 W 172		
STW 9	465653 4896934	1.4	0.4	1.2	03	L	Y	L	50F 40G 10C	70G 20SR 10P	L	T.Grass BV: T.Grass/Herb		174	175	177

Site #	GPS 17T	Bankfull width (m)	Max bankfull depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimension	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	 d/s	 Channel
STW 10	466382 4896840	5	1.14	4.1	0.78	m	Y	L	80 F 20 C	10 G 80 SR 10 P	L	TG BV: TG Herbs	non	179	180	190
STW 12	466831 4897057	2.1 AT Bankfull	0.44	2.1	0.44	m	Y	H	70 F 30 G	80 SR 20 P	L	T.Grass BV: Herbs T.Grass	non	191	192	193
STW 13	467379 4896827	1.92	0.61	2	0.63	Very Low	Y	L	70 F 20 G 10 C	70 SR 30 P	L	T.Grass BV: Herbs T.Grass	non	196	197	198
STW 18	467727 4894204	2.3	0.65	1.76	0.24	m	Y	H	60 F 20 C 20 B	70 G 70 SR 10 P	L	T.Grass BV D.Trees	Tile Drain	199	200	201
V1 Lot	459699 4897033	4.8	0.67	4.2	0.58	L	Y	L	70 F 30 C	30 G 70 P	L	T.Grass + Shrubs BV Shrubs	non	202	203	204
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]					[redacted]	[redacted]				[redacted]	[redacted]	[redacted]
A1	460682 4897427	5	1.28	1.8	0.44	L	Y	M	70 F 20 G 10 C	70 G 30 SR	L	T.Grass BV D.Trees/Shrubs	non	208	210	211
*	Rain stopped T=5° w=1															

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Renewable Energy Water Body Site Investigation

Project # 1275	Project Name: ARMOW	Crew: Bl. B Br.	Project Supervisor	Date 28 -Oct- 11
Weather	Air temp 7	Wind 2-3	Precipitation 0	Cloud Cover 100	Survey start time:	Survey end time:

Indicate an X for yes and a strike through for no or not applicable

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimension	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	Photo # d/s	Photo # Channel
PN20	458404 4892495	15	1.23	13	0.78	M	Y	L	40 F 30 G 30 C	50 G 25 SR 25 FR	L	T. Grass Bv: Cedar	None	215	216	217
PN18	458809 4892209	2	0.65	1.1	0.48	M	Y	H	80 F 20 G	40 G 30 SR 30 Pool	L	T. Grass Bv: C. Tree	None	218	219	220
PN 22	460219 4895621	3.5	0.68	3.5 AT Bank Full	0.68	M	Y	L	100 F	50 G 50 SR	L	T. Grass Bv: T. Grass	None	222	224	225
A3	461407 4895721	4	1.5	2.6	0.5	M	Y	m	70 F 20 G 10 C	70 G 30 SR	L	T. Grass + Herbs Bv: Herbs + T. Grass	None	226	227	228
A6	461715 4898363	2.95	0.73	2.15	0.53	M	Y	L	100 F	90 G 10 SR	L	T. Grass + Herbs Bv: Herbs + T. Grass	None	229	230	231
T3	461986 4898875	4	0.9	3.2	0.45	L	Y	m	100 F	70 G 30 P	L	T. Grass + Herbs Bv: Herbs + T. Grass	none	232	233	234
L7	462693 4900646	3.65	0.94	3.15	0.25	M	Y	m	40 C 30 G 30 F	30 G 50 SR 20 P	L	T. Grass Bv T. Grass	None	235	236	237

Site #	GPS 17T	Bankfull width (m)	Max bankfull depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimension	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	d/s	Channel
L4	461601 4901268	3.35	0.45	3.3	0.35	L	Y	H	100F	50G 50SR	L	Herbs + TGrass BV Herbs TGrass		239	240	241
T2	460674 4900658	2.9	1.57	2.4	0.27	m	Y	H	70F 30C	70G 20SR 10 Pool	L	TGrass BV TGrass DTree		242	243	244
T1	460399 4900189	3.5	0.48	3	0.25	m	Y	H	90F 10G	40G 60SR	L	TGrass + Herb BV Trees + Herb		245	246	247
Col 16	458005 4900109	3	0.61	2.7	0.45	m	Y	m	60F 10B 20C 10G	50SR 30G 20FR	L	TGrass BV TGrass + Herb		248	249	250
Col 17	457553 4899280	4.1	0.69	3	0.31	m	Y	m	70F 20G 10C	80G 20SR	L	TGrass BV Herbs TGrass	Not exposed	251	252	253
A5	460505 4899513	3.8	0.62	3.7	0.22	m	Y	m	70F 10G 10C 10B	40G 30 SR 30 Pool	L	TGrass BV TGrass		255	256	257
A4	459315 4898273	2.6	0.57	2	0.17	m	Y	m	90F 10G	80 SR 10 FR 10 Pool	L	TGrass BV TGrass + Herbs		258	259	260
STW26	465611 4899009	No access					Y							261	262	263
STW 25	465900 4898829	10.8	1.8	9.8	1.3	m	Y	L	60B 20C 20F	50G 50 Pool	L	Cattail + TGrass BV: TGrass Herb		263	264	265
STW 24	466743 4898363	1.9	0.42	1.33	1.9	m	Y	H	100F	70G 30 Pool	L	TGrass Forbs BV TGrass + Herb	Tile Drain	266	267	268

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Renewable Energy Water Body Site Investigation

Project # 1275	Project Name: ARMOL	Crew: BEB	Project Supervisor	Date 18 NOV 11

Weather	Air temp -1	Wind 2	Precipitation ~~no~~ 0	Cloud Cover ~~0~~ 40	Survey start time:	Survey end time:

Indicate an X for yes and a strike through for no or not applicable

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimension	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	Photo # d/s	Photo # Channel
PN12	463455 4890441	1.2	0.6	1	0.2	L	Y	H	95 F 5 C	50 P 30 G 20 SR	L	100% T		001	2	3
PN13	462309 4890286	4	0.4	3.6	0.28	~~0~~	Y	H	100 F	100 P	L	100% T		4	5	6
PN14	462350 4890426	3.9	1	2.4	0.3	~~0~~	Y	H	100 F	100 P	L	100% T		7	8	9
PN15	460453 4892014	no wetted Body												10	11	12
PN19	459045 4893647	2.1	0.75	1.7	0.3	~~0~~	Y	L	100F	100 P	L	100% T		13	14	15
PN22	458882 4893416	5.3	1.8	3.8	0.9	~~0~~	Y	L	100 F	100P	L	100% T		16	17	18
PN23	462531 4890436	3.4	1.3	2	0.4	~~0~~	Y	H	100F	50 G 50 P	L	100% T		19	20	21

Site #	GPS 17T	Bankfull width (m)	Max bankfull depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimension	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	 d/s	 Channel
PN30	465652 4888741	4.2	0.8	2.4	0.3	L	Y	H	95 F 5 C	100 G	L	95% T 5% A	Ditch	22	23	24
PN31	463769 4888308	4.2	1.3	3.6	0.6	L	Y	M	60 F 40 C	100 G	L	100% T		25	26	27
PN34	463810 4889683	4.4	1.4	3.1	0.6	M	Y	L	40 G 30 F 30 C	40 G 40 SR 20 Pool	L	100% T		28	29	30
PN 35	463991 4890003	No Culvert	Culvert											31	32	33
PN 54	459876 4890534	11.2	0.9	10	0.4	L	Y	M	80 C 20 F	100 Pool		80 T 20 A	Duck was Present U/S	34	35	36
PN 37	464246 4890385	3.1	0.8	2.4	0.3	L	Y	M	80 F 20 C	100 Pool	L	100 T		37	38	39
PN38	464336 4890450	4.2	1.1	2	0.3	L	Y	H	70 F 20 C 10 B	100 G	L	100 T		40	41	42
PN 55	459569 4890403	2.1	1.1	0.7	0.4	L	Y	H	100 F	50 G 50 Pool	L	100 T		43	44	45
PN 40	464703 4891281	1.2	0.4	0.4	0.12	L	Y	H	40 G 30 F 30 C	100 G	L	100 T		46	47	48
PN 58	460063 4890[illegible]	3.2	0.8	2.4	0.3	L	Y	M	90 F 10 C	100 G	L	100 T		49	50	51

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Renewable Energy Water Body Site Investigation

Project # 1275	Project Name: Armor	Crew: BEB	Project Supervisor	Date 18-NOV-11

Weather	Air temp -1	Wind 2	Precipitation ☒	Cloud Cover 40	Survey start time:	Survey end time:

Indicate an X for yes and a strike through for no or not applicable

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimension	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	Photo # d/s	Photo # Channel
PN 56	459177 4890930	1.4	0.8	1.2	0.5	m	X	m	70 F 20 G 10 C	40 G 40 SR 20 Pool	L	100 T		52	53	54
PN 57	459631 4893004	US 18	no access	10	X	no discharge	X	m	100 F	100 Pool	L	100 T	Small Lake U/S	55	56	57
		DS 3	0.8	1.2	0.3	L		H	60 F 40 G	100 G						
PN 60	456724 4890566	5	2.1	0.7	0.3	L	Y	m	40 F 30 G 30 C	60 G 40 Pool	L	60% T 40% A		58	59	60
PN 62	455466 4891275	3.2	1	1.9	0.3	no discharge	Y	H	100 E	100 Pool	L	100% T		61	62	63
PN 63	455727 4891858	9.1	2.5	8.7	1.6	L	Y	L	Turbidity too high	100 G	L	100% T		64	65	66
PN 2	456769 4892201	7.1	3.9	5.4	0.6	m	Y	H	20 Boul 70 C 10 G	60 G 10 Pool 30 SR 30 FR	m	100% T		67	68	69
P2	460089 4889246	4.2	1.3	2.4	0.4	L	Y	H	70 F 30 C	80 G 20 Pool	L	100% T	Channel Braided US	70	71	72

Site #	GPS 17T	Bankfull width (m)	Max bankfull depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimen-sion	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	d/s	Chann el
P11	457728 4890003	no Defined channel					N							73 N 74 S 75 E 76 W		
P12	457027 4889994	8.3	1.2	B	0.8	L	Y	M	40G 20F 40C	30G 70Pd	L	50T 50A	Poss, bb wetland	77	78	79
[illegible]	467748 4895[illegible]	no surface water					N							80 N 81 S 82 E 83 W		

NATURAL RESOURCE SOLUTIONS INC.

Aquatic, Terrestrial and Wetland Biologists

Renewable Energy Water Body Site Investigation

Project # 1275	Project Name: ARMOW	Crew: BEB	Project Supervisor	Date 2[illegible]

Weather	Air temp	Wind	Precipitation	Cloud Cover	Survey start time:	Survey end time:
	6	2	0	20		

Indicate an X for yes and a strike through for no or not applicable

Site #	GPS 17T	Bankfull width (m)	Max channel depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimension	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo # u/s	Photo # d/s	Photo # Channel
PN 4	462174 4892212	7.1	0.6	3.2	0.2	m	Y	H	40 F 30 c 20 G 10 B	40 G 40 SR 20 Pool	L	100% T	none	2	3	4
PN 24	460230 4891276	4	0.8	3	0.31	L	Y	H	100 F	50 G 50 Pool	L	100% T		5	6	7
PN 26	463597 4892316	8.5	1.2	7.9	0.8	L	Y	M	80 F 20 c	100 G	L	80% T 20% A		8	9	10
PN 27	466437 489798	5.5	0.6	0.3	0.12	L	Y	H	100 F	100 G	L	100% T	Channel Data	11	12	13
PN 48	462403 4892107	8.5	1	7.7	0.8	XL	Y	L	80 F 20 c	100 Pool	L	100% T		14	15	16
PN 47	462403 4892278	6.1	0.56	4.1	0.3	L	Y	M	60 F 30 g 10 c	40 G 10 SR 50 Pool	L	100% T		17	18	19
P9	459608 4889196	5.1	0.9	4.6	0.05	L	Y	H	100% F	60 G 40 Pool	L	none		20	21	22

Site #	GPS	Bankfull width (m)	Max bankfull depth (m)	Wetted width (m)	Max water depth (cm)	Visual discharge estimate (L/s)	Water present (Y or N) + Refuge pool dimen-sion	Water Clarity (L/M/H)	Substrate %'s (to equal 100%)	Channel Morphology (% pool, glide, slow riffle, fast riffle)	Channel Gradient (H/M/L)	In-channel vegetation (% and type) (i.e. terrestrial vs aquatic)	Groundwater indicators (seeps, springs, veg) NOTES	Photo #		
														u/s	d/s	Channel
STW 28	466614 [illegible]	no Surface water												N 23 S 24 E 25 W 26		
[illegible] 4	[illegible]	4.1	0.9	2.5	0.3	L	Y	H	70F 30G	100G	L	90%T 10% Aquatic	Channelized Ditch 10 + [illegible]	28	29	30

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HABITAT CHARACTERIZATION

PROJECT (Number & Name):
Field Staff: CLH, NGM
Station: CKC
Waterbody:
Drainage System:
Location in System:
Appr. Reach Length (m):
Survey Date: Nov. 4 2011
Time Started: 0807
Time Finished:

Site Location: T46 Road Crossing
GPS Datum: Easting:
Zone: Northing:
Municipality: Kincardine
Lot & Concession:

Weather Conditions:
Wind: 0 Cloud Cover (%): 5
Precipitation: none

ADJACENT LANDS

Valley Slope: Gentle (< 5°) Moderate (5 - 15°) Steep (> 15°)
Extent of Natural Vegetation (m) 3m each side 0-10 10 to 20 20 to 30 30+
Vegetation Type: Smooth Brome. Some white elm, white elderberry. burdock

Riparian Zone Flood Plain - extent of frequent flood (m): 1m 0-10 10 to 20 20 to 30 30+
Vegetation Type: red canary
Vegetation Density (HML): very dense (cover 90%)

Canopy Type: young elm, red maple / dense red canary in channel Quality and % shade: sparse, few large trees 5%

Land Use Soy fields surrounding.

Other Notes **(groundwater, soils, pools, vegetation, etc.)**

CHANNEL MORPHOLOGY

Channel Width (range (m)): 1m - 2m
Bank Height (range (m)): 1m - 2m
Bank Slope (degrees from surface of water): 50°
Bank Vegetation Type: Smooth brome grass

Gradient (H/M/L):
Meander/Straight: Straight
Bank Stability: stable
Bank Veg. Density (H/M/L): H

CHANNEL SUBSTRATE %

Clay: >90%	Gravel:	Boulder:	Muck:
Silt:	Pebble:	Bedrock:	Detritus: 10
Sand:	Cobble:	Marl:	Other:

INSTREAM HABITAT AND COVER

Pools:	Undercut Banks:	Boulder/Rock:
Riffles:	Woody Debris:	Cobble:
Backwater:	Vegetation: 95% reed canary	Other:

INSTREAM VEGETATION

Type (submerg./emerg./floating)	Family/Genus/species	Description/Abundance
emerg	Reed Canary	95% cover

CODES:

AHP Aquatic Habitat Point	SWI Surface Water Input	SCS Stream Cross Section
AHY Aquatic Habitat Area	GWI Groundwater Input	DOX Dissolved Oxygen Stn
TMP Temp Monitor Stn	CKC Creek Crossing	VSS Visual Survey Stn
FLW Flow Monitor Stn	WEL Well	WQS Water Quality Stn
	CUL Culvert	

FLOW CONDITIONS

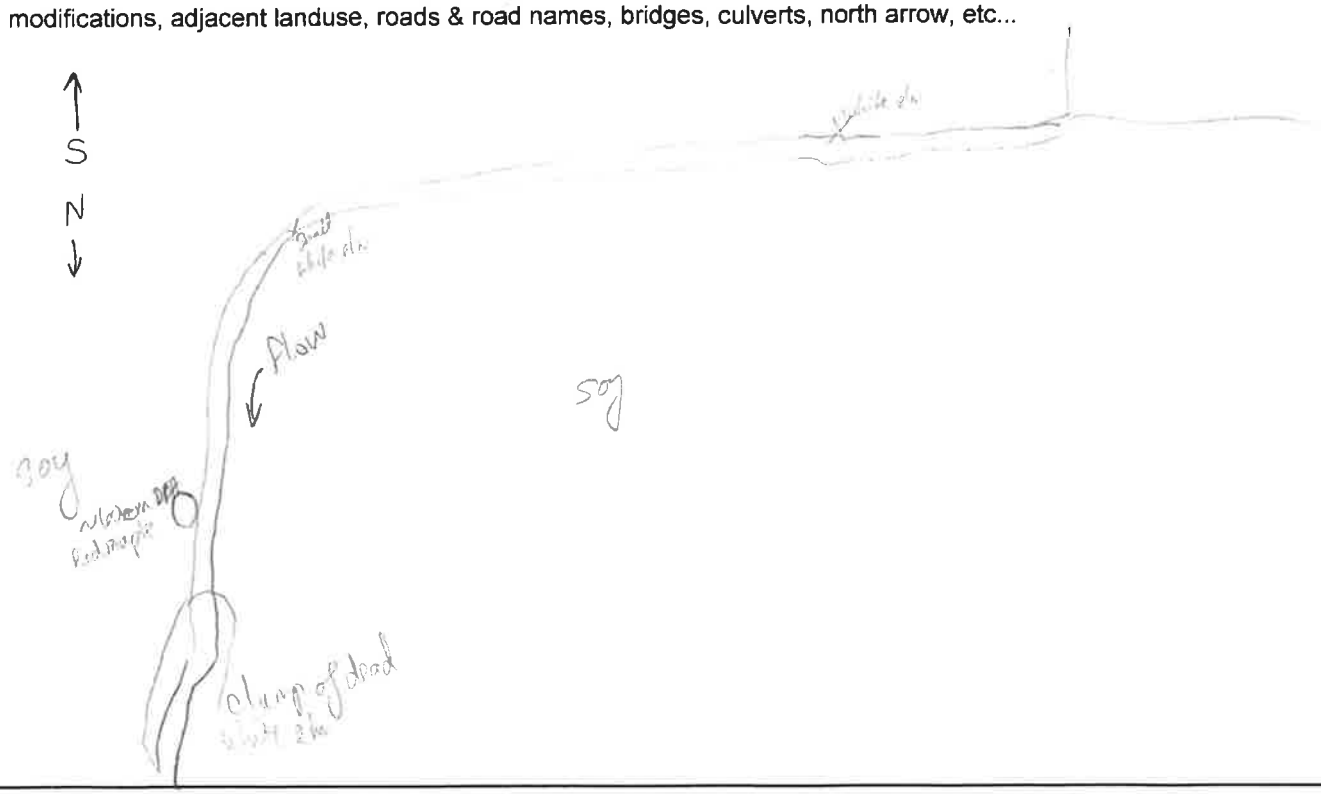
Cross-Section	Wetted Width (m)	5 Depths, equally spaced (cm)	Discharge/Pool/Riffle/Run/Notes
1			
2			
3			
4			
5			

WATER QUALITY

Water Temp. (°C): 6	D.O. (ppm):	pH:	Visible Characteristics/Other Parameters:
Air Temp. (°C): 1	D.O. (%):	TDS (ppm):	
Time Taken: 0814.	Conductivity (µs/cm):		
Location Taken:			

SITE DRAWING

Include: watercourse and name, flow direction, riffle/pool/run habitat, side tributaries, station location, approx. reach length, channel modifications, adjacent landuse, roads & road names, bridges, culverts, north arrow, etc...



PHOTOS TAKEN

Photo #	Description	Photo #	Description

GENERAL COMMENTS

Fish observed, unusual conditions, differences from previous site visit, landowner comments, topography, general land use and vegetation, etc.:

Appendix II
Site Investigation Photographs

1275 Armow Wind Energy Centre Water Body Photo Log

North Penetangore Subwatershed

Figure 1 North Penetangore River PN16 Upstream

Figure 2 North Penetangore River PN20 Downstream

Figure 3 North Penetangore River PN26 Upstream

Figure 4 North Penetangore River PN48 Upstream

Figure 5 North Penetangore River PN51 Upstream

Figure 6 North Penetangore River PN63 Upstream

Figure 7 North Penetangore River PN2 Downstream

Figure 8 Tributary A PN14 Upstream

Figure 9 Tributary A PN23 Upstream

Figure 10 Tributary B PN3 Upstream

Figure 11 Tributary B PN11 Downstream

Figure 12 Tributary C PN6 Downstream

Figure 13 Tributary C PN7 Upstream

Figure 14 Tributary D PN60 Upstream

Figure 15 Tributary E PN35 Downstream

Figure 16 Tributary F PN9 Downstream

Figure 17 Tributary F PN10 Downstream

Figure 18 Tributary F PN30 Upstream

Figure 19 Tributary F PN37 Upstream

Figure 20 Tributary F PN38 Upstream

Figure 21 Tributary G PN12 Upstream

Figure 22 Tributary G PN34 Upstream

Figure 23 Tributary H PN15 Downstream

Figure 24 Tributary I PN18 Downstream

Figure 25 Tributary I PN19 Downstream

Figure 26 Tributary I PN22 Upstream

Figure 27 Tributary J PN27 Downstream

Figure 28 Tributary J PN40 Downstream

Figure 29 Tributary K PN31 Upstream

Figure 30 Tributary L PN53 Upstream

Figure 31 Tributary L PN54 Upstream

Figure 32 Tributary L PN56 Upstream

Figure 33 Tributary M PN57 Upstream

Figure 34 Tributary O PN62 Upstream

Penetangore River Tributary Subwatershed

Figure 35 Tributary A P2 Downstream

Figure 36 Tributary A P5 Downstream

Figure 37 Tributary A P9 Downstream

Figure 38 Tributary B P11 No Water Body

Figure 39 Tributary C P12 Downstream

Willow Creek Subwatershed (Saugeen/Teeswater)

Figure 40 Willow Creek STW11 Upstream

Figure 41 Willow Creek STW25 Downstream

Figure 42 Tributary A STW2 Upstream

Figure 43 Tributary B STW7 Downstream

Figure 44 Tributary B STW9 Downstream

Figure 45 Tributary C STW10 Downstream

Figure 46 Tributary D STW12 Upstream

Figure 47 Tributary D STW13 Downstream

Figure 48 Tributary D STW23 No Water Body

Figure 49 Tributary E STW18 Downstream

Figure 50 Tributary F STW20 No Surface Water Accessible

Figure 51 Tributary G STW21 Upstream

Lorne Creek Subwatershed

Figure 52 Tributary A LO1 Downstream

Figure 53 Tributary A LO2 Downstream

Figure 54 Tributary A LO4 Downstream

Figure 55 Tributary B LO3 Downstream

Figure 56 Tributary B LO8 Upstream

Figure 57 Tributary B LO10 Upstream

Andrew’s Creek Subwatershed

Figure 58 Andrews Creek A5 Upstream

Figure 59 Andrews Creek A6 Upstream

Figure 60 Tributary A A1 Downstream

Figure 61 Tributary A A3 Downstream

Figure 62 Tributary A A4 Upstream

Tiverton Creek Subwatershed

Figure 63 Tiverton Creek T1 Downstream

Figure 64 Tributary A T2 Downstream

Figure 65 Tributary C T4 Downstream

Little Sauble Tributary Subwatershed

Figure 66 Tributary A L3 Upstream

Figure 67 Tributary A L2 Downstream

Kincardine Creek (North Penetangore River tributary) Subwatershed

Figure 68 Kincardine Creek PNK13 Upstream

Figure 69 Kincardine Creek PNK22 Downstream

Figure 70 Kincardine Creek PNK25 Downstream

Figure 71 Kincardine Creek PNK26 Upstream

Figure 72 Tributary A PNK3 Downstream

Figure 73 Tributary A PNK7 Downstream

Figure 74 Tributary A PNK8 Upstream

Figure 75 Tributary A PNK9 Downstream

Figure 76 Tributary A PNK10 Downstream

Figure 77 Tributary A PNK12 Downstream

Figure 78 Tributary A PNK16 Upstream

Figure 79 Tributary A PNK17 Upstream

Appendix III
Site Investigation Water Body Details

Drainage Area	Waterbody Name	Location ID	UTM			Thermal Regimue (MNR)	Fish Community (provided by MNR)	Water Body (Y/N)	Site Investigation Date	Weather Conditions				Precipitation Received 2 Weeks Prior to Survey	Precipitation Received 48 hours Prior to Survey	Flow Regime (based on field observation)	Bank Full Width	Wetted Width	Bank Full Depth	Max Depth	Visible Discharge Rate	Clarity	Substrate				Channel Morph				Channel Gradient	Channel Veg	Ground Water Indicators	Bank Veg	Notes
										wind	cloud cover	Air Temp (°c)	Precip at Time of Survey										Fine	Cobble	Boulder	Gravel	Glide	Slow Riffle	Fast Riffle	Pool					
North Penetangore River	North Penetangore River	PN16	17T	460510	4892113	coldwater		Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	9	9	-	-	moderate	high turbidity	-	-	-	-	60	20	-	20	low	terrestrial grasses and herbs	none	terrestrial grasses and herbs	defined channel
North Penetangore River	North Penetangore River	PN20	17T	458390	4892502	coldwater		Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	15	13	1.23	0.78	moderate	high turbidity	40	30	-	30	50	25	25	-	low	100% terrestrial grasses	none	cedar and terrestrial grasses	naturalized channel
North Penetangore River	North Penetangore River	PN4	17T	462587	4892369	coldwater		Y	Based on PN48 Observations on Nov-23-11	-	-	-	-	-	-	Intermittent/Permanent	8.5	7.7	1	0.8	low	high turbidity	80	20	-	-	-	-	-	100	low	100% terrestrial	-	-	naturalized channel
North Penetangore River	North Penetangore River	PN26	17T	463468	4892166	coldwater		Y	Based on adjacent observation (26-Oct-11, 18-Nov-11)	-	-	-	-	-	-	Intermittent/Permanent	-	-	-	-	moderate	moderate turbidity	60	20	20	-	-	-	-	-	low	-	-	-	naturalized channel
North Penetangore River	North Penetangore River	PN48	17T	462339	4892196	coldwater		Y	23-Nov-11	2	20%	6	none	13.6 mm	0.6 mm	Intermittent/Permanent	8.5	7.7	1	0.8	low	high turbidity	80	20	-	-	-	-	-	100	low	100% terrestrial	-	-	naturalized channel
North Penetangore River	North Penetangore River	PN51	17T	460765	4892351	coldwater		Y	24-Oct-11	1	30%	14	0	70.4 mm	3.0 mm	Intermittent/Permanent	5	3	2	1	moderate	high turbidity	70	30	-	-	40	40	20	-	low	none	none	pasture, terrestrial grasses	defined channel
North Penetangore River	North Penetangore River	PN52	17T	460673	4892205	coldwater		Y	Based on PN51 observations on 24-Oct-11	1	30%	14	0	70.4 mm	3.0 mm	Intermittent/Permanent	5	3	2	1	moderate	high turbidity	70	30	-	-	40	40	20	-	low	none	none	terrestrial grasses	defined channel
North Penetangore River	North Penetangore River	PN63	17T	455728	4891860	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	9.1	8.7	2.5	1.6	low	high Turbidity	turbidity to high for accurate measure	-	-	-	100	-	-	-	-	-	-	-	naturalized channel
North Penetangore River	North Penetangore River	PN2	17T	456770	4892285	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	7.1	5.4	0.9	0.6	moderate	low turbidity	-	70	20	10	30	30	30	10	moderate	100% terrestrial	-	-	naturalized define channel
North Penetangore River	Unnamed Tributary A	PN14	17T	462331	4890295	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	3.8	2.4	1	0.3	no vissible flow	low turbidity	100	-	-	-	-	-	-	100	low	100% terrestrial	-	deciduous trees	leaf litter covering channel bottom, naturalized channel
North Penetangore River	Unnamed Tributary A	PN23	17T	462557	4890447	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	3.4	2	1..3	0.4	no vissible flow	low turbidity	100	-	-	-	-	-	-	100	low	100% terrestrial grasses	-	terrestrial grasses and herbs	channelized
North Penetangore River	Unnamed Tributary B	PN3	17T	463724	4891565	coldwater		Y	26-Oct-11	3	100%	7	light rain	70.4 mm	n/a	Intermittent/Permanent	1.72	1.53	0.36	0.07	high	high turbidity	40	30	30	-	-	60	40	-	moderate	100% terrestrial grasses	tile drain	deciduous trees and terrestrial grasses	naturalized channel
North Penetangore River	Unnamed Tributary B	PN11	17T	463312	4890904	coldwater		Y	24-Oct-11	1	30%	14	none	70.4 mm	3.0 mm	Intermittent/Permanent	7	5	2	0.5	moderate	moderate turbidity	40	-	-	60	50	50	-	-	low	none	none	pasture, terrestrial grasses	good connectivity with flood plain
North Penetangore River	Unnamed Tributary C	PN5	17T	459323	4889123	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary C	PN6	17T	462192	4888626	coldwater		N	25-Oct-11	3	100%	10.3	moderate rain	70.4 mm	3.0 mm	Ephemeral	1.25	0.85	0.56	0.19	low	low turbidity	70	10	-	20	30	70	-	-	low	terrestrial grasses	none	terrestrial grasses/deciduous trees	terrestrial grasses throughout
North Penetangore River	Unnamed Tributary C	PN7	17T	461968	4888419	coldwater		Y	25-Oct-11	3	100%	8	moderate rain	70.4 mm	3.0 mm	Intermittent/Permanent	3	2.5	0.6	0.48	low	low turbidity	100	-	-	-	50	-	-	50	low	terrestrial grasses	none	terrestrial grasses/deciduous trees	naturalized channel
North Penetangore River	Unnamed Tributary C	PN24	17T	460179	4891306	coldwater		Y	23-Nov-11	2	20%	6	none	13.6 mm	0.6 mm	Intermittent/Permanent	4	3	0.8	0.31	low	clear	100	-	-	-	50	-	-	50	low	100% terrestrial grasses	none	terrestrial grasses and herbs	naturalized channel
North Penetangore River	Unnamed Tributary D	PN25	17T	457807	4890537	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary D	PN59	17T	457366	4890605	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary D	PN60	17T	456726	4890559	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral																			poorly defined channel
North Penetangore River	Unnamed Tributaty E	PN35	17T	463983	4889996	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral	no defined channel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	non-exsistent water body
North Penetangore River	Unnamed Tributary F	PN9	17T	464353	4890303	coldwater		Y	24-Oct-11	1	30%	14	none	70.4 mm	3.0 mm	Intermittent/Permanent	2	2	1	0.5	low	high turbidity	70	30	-	-	100	-	-	-	low	none	none	terrestrial grasses/sedges	channelized up stream through agricultural fields
North Penetangore River	Unnamed Tributary F	PN10	17T	463707	4890680	coldwater		Y	24-Oct-11	1	30%	14	none	70.4 mm	3.0 mm	Intermittent/Permanent	4	1	1	0.75	moderate	high turbidity	90	10	-	-	30	30	40		low	none	none	terrestrial grasses/sedges	defined channel
North Penetangore River	Unnamed Tributary F	PN30	17T	465659	4888739	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral	4.3	2.4	0.8	0.3	low	low turbidity	95	5	-	-	100	-	-	-	low	95% terrestrial 5% aquatic	-	terrestrial grasses, shurbs, trees	channelized ditch
North Penetangore River	Unnamed Tributary F	PN37	17T	464242	4890378	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2mm	Intermittent/Permanent	3.1	2.4	0.8	0.3	low	moderate turbidity	80	20	-	-	-	-	-	100	low	100% terrestrial	-	terrestrial grasses/shrubs	channelized up stream through agricultural fields
North Penetangore River	Unnamed Tributary F	PN38	17T	464237	4890446	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	4.2	2	1.1	0.3	low	low turbidity	70	20	10	-	100	-	-	-	low	100% terrestrial	-	terrestrial grasses	defined channel
North Penetangore River	Unnamed Tributary F	PN39	17T	463876	4890625	coldwater		Y	Based on PN39 observation (18-Nov-11)	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	4.2	2	1.1	0.3	low	low turbidity	70	20	10	-	101	-	-	-	low	100% terrestrial	-	terrestrial grasses	natural channel down stream
North Penetangore River	Unnamed Tributary F	PN8	17T	463528	4890709	coldwater		Y	Based on adjacent observation (24-Oct-11)	-	-	-	-	-	-	Intermittent/Permanent	-	-	-	-	moderate	moderate turbidity	70	5	-	25	-	-	-	-	low	100% terrestrial grasses	-	-	defined channel
North Penetangore River	Unnamed Tributary G	PN12	17T	463319	4890343	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	1.2	1	0.6	0.2	low	low turbidity	95	5			30	20		50	low	100% Terrestrial Grasses	none	terrestrial grasses/sedges	defined channel
North Penetangore River	Unnamed Tributary G	PN34	17T	463807	4889686	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	5.4	3.1	1.4	0.6	moderate	high turbidity	30	30	-	40	40	40	-	20	low	100% terrestrial	-	terrestrial grasses, shurbs, deciduous trees	channelized through agricultural fields
North Penetangore River	Unnamed Tributary G	PN36	17T	463713	4889984	coldwater		Y	Based on PN34 observations on 18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	5.4	3.1	1.4	0.6	moderate	high turbidity	30	30	-	40	40	40	-	20	low	100% terrestrial	-	terrestrial grasses, shurbs, deciduous trees	channelized through agricultural fields
North Penetangore River	Unnamed Tributary G	PN49	17T	463452	4889823	coldwater		Y	-	-	-	-	-	-	-	Intermittent/Permanent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	defined channel
North Penetangore River	Unnamed Tributary H	PN15	17T	460459	4892024	coldwater	White Sucker, Etheostoma species (genus of Darters), Rock Bass, Herrings, Creek Chub, Emerald Shiner, Rainbow Darter, Central Mudminnow, Pumpkinseed, Common Carp	N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral	no defined channel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	poorly defined channel
North Penetangore River	Unnamed Tributary I	PN18	17T	458801	4893220	coldwater		Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	2	1.1	0.65	0.48	moderate	low turbidity	80	-	-	20	40	30	-	30	low	terrestrial grasses	none	terrestrial grasses and coniferous trees	poorly defined channel
North Penetangore River	Unnamed Tributary I	PN19	17T	459044	4893649	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral	2.1	1.7	0.75	0.3	no vissible flow	high turbidity	100	-	-	-	-	-	-	100	low	100% terrestrial grasses	-	terrestrial grasses and herbs	channelized
North Penetangore River	Unnamed Tributary I	PN22	17T	458863	4893430	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	5.3	3.8	1.8	0.9	no vissible flow	high turbidity	100	-	-	-	-	-	-	100	low	100% terrestrial grasses	-	terrestrial grasses and herbs	piped underground downstream
North Penetangore River	Unnamed Tributary I	PN58	17T	459117	4893203	coldwater		Y	-	-	-	-	-	-	-	Intermittent/Permanent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	natural meanderng channel
North Penetangore River	Unnamed Tributary J	PN27	17T	465542	4890729	coldwater		Y	23-Nov-11	2	20%	6	none	13.6 mm	0.6 mm	Intermittent/Permanent	5.5	0.3	0.6	0.12	low	low turbidity	100	-	-	-	100	-	-	-	low	100% terrestrial	-	terrestrial grasses and shrubs	channelized ditch

North Penetangore River	Unnamed Tributary J	PN40	17T	464708	4891283	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	1.2	0.4	0.4	0.12	low	low turbidity	30	40	30	-	100	-	-	-	low	100% terrestrial	-	terrestrial grasses	channelized ditch
North Penetangore River	Unnamed Tributray K	PN31	17T	463776	4888316	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	4.2	3.6	1.3	0.6	low	moderate turbidity	60	40	-	-	100	-	-	-	low	100% terrestrial	-	terrestrial grasses	channelized ditch
North Penetangore River	Unnamed Tributary L	PN53	17T	460063	4890422	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	3.2	2.4	0.8	0.3	low	moderate turbidity	90	10	-	-	-	-	-	100	low	100% trerrestrial	-	-	defined channel
North Penetangore River	Unnamed Tributary L	PN54	17T	459874	4890529	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	11.2	10	0.9	0.4	low	moderate turbidity	20	80	-	-	-	-	-	100	low	80% aquatic 20% terrestrial	-	terrestrial grasses and shrubs	duck weed present, large manmade pond upstream of road
North Penetangore River	Unnamed Tributary L	PN55	17T	459567	4890403	coldwater		Y	Based on adjacent observation (28-Oct-11, 18-Nov-11)	-	-	-	-	-	-	Intermittent/Permanent	-	-	-	-	Moderate	Low turbidity	70	-	-	30	-	-	-	-	Low	100% terrestrial	-	-	channelized through agricultural fields
North Penetangore River	Unnamed Tributary L	PN56	17T	459175	4890925	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	1.4	0.8	1.2	0.5	moderate	moderate turbidity	70	10.00		20	40	40		20	low	100% tettestrial	-	Terrestrial grasses	naturalized
North Penetangore River	Unnamed Tributary M	PN57	17T	459612	4893006	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	upstream 18	10	no access	no access	no vissible flow	moderate turbidity	100	-	-	-	-	-	-	100	low	100% terrestrial	-	-	small lake upstream of road
																	downstream 3	1.2	0.8	0.3	low	low turbidity	60	-	-	40	100	-	-	-	low	100% terrestrial	-	-	
North Penetangore River	Unnamed Tributary N	PN65	17T	457320	4891998	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary O	PN61	17T	455767	4891185	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary O	PN62	17T	455450	4891271	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral	3.2	1.9	1	0.3	no vissible flow	low turbidity	100	-	-	-	-	-	-	100	low	100% terrestrial		terrestrial grasses and trees	poorly defined channel
North Penetangore River	Unnamed Tributary O	PN46	17T	456978	4891178	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary P	PN13	17T	463259	4890274	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary Q	PN1	17T	465460	4890159	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary Q	PN28	17T	465633	4889687	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary Q	PN29	17T	465479	4889682	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary R	PN17	17T	460120	4891523	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary S	PN21	17T	458094	4891977	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributray T	PN32	17T	463469	4888488	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributray T	PN33	17T	463010	4888126	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary U	PN45	17T	464588	4892517	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary V	PN44	17T	465166	4892191	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary W	PN43	17T	465005	4891807	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary X	PN42	17T	464940	4891693	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary Y	PN41	17T	464849	4891532	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary Z	PN46	17T	456978	4891178	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary AA	PN47	17T	462829	4892697	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary BB	PN50	17T	460888	4892505	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
North Penetangore River	Unnamed Tributary CC	PN64	17T	456414	4892485	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Penetangore River Tributary	Unnamed Tributary A	P2	17T	458971	4889291	coldwater	Brook Trout, Rainbow Trout, Smallmouth Bass, Chinook Salmon	Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	4.2	2.4	1.3	0.4	low	low turbidity	70	30	-	-	80	-	-	20	low	100% terrestrial	-	terrestrial grasses/herbs, trees	channel braided upstream
Penetangore River Tributary	Unnamed Tributary A	P4	17T	460934	4888617	coldwater		N								Ephemeral																			no defined channel
Penetangore River Tributary	Unnamed Tributary A	P5	17T	459323	4889123	coldwater		Y	24-Oct-11	1	30%	14	0	70.4 mm	3.0 mm	Intermittent/Permanent	4	2	2	0.5	Low	high Turbidity	90	10	-	-	50	50	-	-	low	none	none	pasture, terrestrial grasses	defined channel
Penetangore River Tributary	Unnamed Tributary A	P7	17T	461968	4888419	coldwater		N								Ephemeral																			no defined channel
Penetangore River Tributary	Unnamed Tributary A	P9	17T	459821	4889204	coldwater		Y	23-Nov-11	2	20%	6	none	13.6 mm	0.6 mm	Intermittent/Permanent	5.1	4.5	0.9	0.5	low	low turbidity	100	-	-	-	60	-	-	40	low	-	-	herbs, shurubs, trees	naturalized channel
Penetangore River Tributary	Unnamed Tributray B	P11	17T	457726	4889986	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm		Ephemeral																			no defined channel
Penetangore River Tributary	Unnamed Tributary C	P12	17T	457116	4890211	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral	8.3	3	1.2	0.4	low	moderate turbidity	30	30	-	40	30	-	-	70	low	50% terrestrial 50% aquatic	-	-	possible wetland
Penetangore River Tributary	Unnamed Tributary D	P1	17T	461186	4889056	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Penetangore River Tributary	Unnamed Tributary D	P3	17T	460912	4889042	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Penetangore River Tributary	Unnamed Tributary D	P6	17T	462192	4888626	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Penetangore River Tributary	Unnamed Tributary D	P13	17T	461285	4888945	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Penetangore River Tributary	Unnamed Tributary E	P8	17T	460207	4889285	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Penetangore River Tributary	Unnamed Tributary F	P10	17T	458658	4889492	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained

Saugeen Teeswater Willow Creek	Willow Creek	STW11	17T	466411	4897033	warmwater/cool water		Y	27-Oct-11	2	100	3	very light rain	70.4 mm	n/a	Intermittent/Permanent	2.1	2.1 (at bank full	0.44	0.44	moderate	low turbidity	70	-	-	30	-	80		20	low	terrestrial grasses	none	terrestrial grasses	defined channel
Saugeen Teeswater Willow Creek	Willow Creek	STW25	17T	465899	4898840	warmwater/cool water		Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	10.8	9.8	1.8	1.3	moderate	high turbidity	20	20	60	-	50	-	-	50	low	cattails and terrestrial grasses	none	terrestrial grasses and herbs	natural meandering channel
Saugeen Teeswater Willow Creek	Unnamed Tributary A	STW2	17T	466510	4894506	warmwater/cool water		N	27-Oct-11	2	100	3	very light rain	70.4 mm	n/a	Ephemeral	2.7	1.6	0.5	0.21	moderate	high turbidity	80	-	-	20	80	-	-	20	low	terrestrial grasses	none	terrestrial grasses/herbs, deciduous trees	Tile Drain, Not present
Saugeen Teeswater Willow Creek	Unnamed Tributary A	STW29	17T	466489	4894260	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary A	STW41	17T	466504	4894469	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary B	STW7	17T	465289	4896805	warmwater/cool water		Y	27-Oct-11	1	100	8	light rain	70.4 mm	n/a	Intermittent/Permanent	1.4	1.2	0.4	0.3	low	High turbidity	50	10	-	40	70	20	10		low	terrestrial grasses	none	terrestrial grasses and herbs	defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributary B	STW9	17T	465877	4896960	warmwater/cool water		Y	27-Oct-11	2	100	3	very light rain	70.4 mm	n/a	Intermittent/Permanent	5	4.1	1.14	0.78	moderate	high turbidity	80	20	-	-	10	80		10	low	terrestrial grasses	none	terrestrial grasses, herbs and shurbs	defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributary B	STW38	17T	466235	4897024	warmwater/cool water		Y	-	-	-	-	-	-	-	Intermittent/Permanent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	defined channel
Saugeen Teeswater Willow Creek	Unnamed Tibutary C	STW10	17T	466378	4896986	warmwater/cool water		Y	26-Oct-11	3	100	7	0	70.4 mm	n/a	Intermittent/Permanent	4.5	4.25	0.91	0.66	moderate	moderate turbidity	100	-	-	-	40	50	10	-	low	terrestrial grasses	none	herbs and terrestrial grasses	defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributary D	STW12	17T	466920	4896986	warmwater/cool water		N	27-Oct-11	2	100	3	very light rain	70.4 mm	n/a	Ephemeral	1.92	2 (Channel Flooded)	0.61	0.63	very low	high turbidity	70	10	-	20	70	-	-	30	low	terrestrial grasses	none	terrestrial grasses	poorly defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributary D	STW13	17T	467286	4896846	warmwater/cool water		N	27-Oct-11	2	100	3	very light rain	70.4 mm	n/a	Ephemeral	2.3	1.76	0.65	0.24	moderate	low turbidity	60	20	20	-	20	70		10	low	terrestrial grasses	tile drain	-	poorly defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributary D	STW23	17T	467752	4896623	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary D	STW39	17T	467623	4896687	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributarty E	STW18	17T	467713	4894210	warmwater/cool water		N	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Ephemeral	2	0.8	no access to defined channel	-	very low	moderate turbidity	-	-	-	-	30	-	-	70	low	terrestrial grasses	none	terrestrial grasses and herbs	tile outlet flowing into Greenock Swamp
Saugeen Teeswater Willow Creek	Unnamed Tributray F	STW20	17T	465933	4894095	warmwater/cool water		N	28-Oct-11	2-3	100%	7	0	71.4 mm		Ephemeral	4	2.8	1.28	0.4	moderate	low turbidity	80	10	-	10	60	20		20	low	Terrestrial grasses and soft stemed bullrush	none	terrestrial grasses and herbs	poorly defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributray F	STW42	17T	466527	4894514	warmwater/cool water		N								Ephemeral																				poorly defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributary G	STW21	17T	467177	4895704	warmwater/cool water		Y	18-Nov-11	2	40%	-1	none	13.4 mm		Intermittent/Permanent	1.9	1.33	0.42	0.19	moderate	Clear	100	-	-	-	70	-	-	30	low	terrestrial grasses	tile drain	terrestrial grasses and herbs	defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributary G	STW30	17T	466851	4894961	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary G	STW31	17T	466660	4894612	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary G	STW37	17T	467104	4895803	warmwater/cool water		Y	Based on STW21 observation (18-Nov-11)	2	40%	-1	none	13.4 mm		Intermittent/Permanent	1.9	1.33	0.42	0.19	moderate	Clear	100	-	-	-	70	-	-	30	low	terrestrial grasses	tile drain	terrestrial grasses and herbs	defined channel
Saugeen Teeswater Willow Creek	Unnamed Tributary H	STW1	17T	466664	4894579	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary I	STW24	17T	466743	4898369	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary J	STW3	17T	466249	4895263	warmwater/cool water	Common Carp, Northern Pike, Central Mudminnow, Pumpkinseed, Rock Bass	N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary J	STW27	17T	466709	4895439	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary J	STW33	17T	466886	4895924	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary K	STW15	17T	466970	4898244	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary K	STW28	17T	466691	4898568	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary K	STW36	17T	466863	4897967	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary K	STW43	17T	465013	4896033	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary L	STW35	17T	466430	4896177	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary M	STW4	17T	466321	4895953	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary M	STW32	17T	465998	4895392	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary N	STW34	17T	466152	4896329	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary O	STW8	17T	465815	4896515	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary P	STW14	17T	468244	4896396	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary P	STW19	17T	468408	4896479	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary P	STW40	17T	468279	4896449	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary Q	STW5	17T	464789	4895962	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary R	STW6	17T	465058	4896018	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary R	STW22	17T	464957	4896172	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary R	STW44	17T	466650	4898880	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tributary S	STW16	17T	467557	4898831	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained

Saugeen Teeswater Willow Creek	Unnamed Tiributary T	STW17	17T	465725	4899883	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tiributary T	STW45	17T	465337	4899743	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tiributary T	STW46	17T	465413	4899756	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tiributary T	STW47	17T	465742	4900128	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Saugeen Teeswater Willow Creek	Unnamed Tiributary U	STW26	17T	465610	4899003	warmwater/cool water		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Lorne Creek	Unnamed Tributary A	LO1	17T	459699	4897033	coldwater	Rainbow Trout, Fathead Minnow, Blacknose Dace, Brook Stickleback	N	27-Oct-11	2	100	3	very light rain	70.4 mm	n/a	Ephemeral	4.8	4.2	0.67	0.52	low	high turbidity	70	30	-	-	30	-	-	70	low	terrestrial grasses and shrubs	none	shrubs and grasses	tile drain non exsisting
Lorne Creek	Unnamed Tributary A	LO2	17T	456928	4898154	coldwater		Y	25-Oct-11	3	100	10.3	moderate rain	70.4 mm	3.0 mm	Intermittent/Permanent	3.6	3.2	0.44	0.09	high	moderate turbidity	70	30	-	-	60	30	10	-	low	terrestrial grasses	none	terrestrial grasses and deciduous trees	channelized ditch
Lorne Creek	Unnamed Tributary A	LO4	17T	456825	4898247	coldwater		Y	23-Nov-11	2	20%	6	none	13.6 mm	0.6 mm	Intermittent/Permanent	4.1	2.5	0.9	0.3	low	low turbidity	70	-	-	30	100	-	-	-	low	90% terrestrial 10% Aquatic	-	-	channelizd ditch, 10+ sickle back observed
Lorne Creek	Unnamed Tributary A	LO5	17T	459293	4897383	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Lorne Creek	Unnamed Tributary A	LO7	17T	457031	4898175	coldwater		Y	Based on LO2 observaions	-	-	-	-	-	-	Intermittent/Permanent	3.6	3.2	0.44	0.09	high	moderate turbidity	70	30	-	-	60	30	10	-	low	terrestrial grasses	none	terrestrial grasses and deciduous trees	channelized ditch
Lorne Creek	Unnamed Tributary A	LO9	17T	458908	4897540	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Lorne Creek	Unnamed Tributary A	LO12	17T	459956	4896968	coldwater		N	Based on adjacent observation (27-Oct-11)	-	-	-	-	-	-	Ephemeral					High	Moderate turbidity	70	30.00							low	Terrestrial Grasses		Terrestrial Grasses and Deciduous trees	poorly defined channel
Lorne Creek	Unnamed Tributary B	LO3	17T	456727	4897796	coldwater		N	25-Oct-11	3	100	10.3	moderate rain	70.4 mm	3.0 mm	Ephemeral	2.5	2.25	0.5	0.06	moderate	high turbidity	70	30.00			40	60			low	terrestrial Grasses	none	Terrestrial Grasses and Herbs	poorly defined channel
Lorne Creek	Unnamed Tributary B	LO8	17T	456933	4897771	coldwater		N	23-Nov-11	2	20%	6	none	13.6 mm		Ephemeral	4.2	2.7	0.7	0.5	low	low turbidity	50	20.00		30	60			40	low	100% terrestrial			channelized ditch
Lorne Creek	Unnamed Tributray B	LO10	17T	458420	4896670	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm		Ephemeral	3.4	1.2	1.1	0.18	low	low turbidity	70	10.00	20					100	low	100% terrestrial			channelized ditch
Lorne Creek	Unnamed Tributray C	LO6	17T	457181	4898750	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Lorne Creek	Unnamed Tributray D	LO11	17T	457789	4895541	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Andrew's Creek	Andrew's Creek	A2	17T	463455	4897318	coldwater	Rainbow Trout, Longnose Dace, Brook Stickleback, Rainbow Darter, White Sucker, Creek Chub, Mottled Sculpin, Lake Chub, Bluntnose Minnow, Pearl Dace, Brown Trout, Northern Redbelly Dace, Johnny Darter, Fathead Minnow, Blacknose Dace,	N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Andrew's Creek	Andrew's Creek	A5	17T	460009	4899510	coldwater		Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	3.8	3.7	0.62	0.22	moderate	moderate turbidity	70	10	10	10	40	30		30	low	terrestrial grasses	none	terrestrial grasses	channelized ditch
Andrew's Creek	Andrew's Creek	A6	17T	461715	4898363	coldwater		Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	2.95	2.15	0.73	0.53	moderate	low turbidity	100	-	-	-	90	10			low	herbs and terrestrial grasses	none	herbs and terrestrial grasses	channelized drainae ditch
Andrew's Creek	Andrew's Creek	A8	17T	461276	4898961	coldwater		Y	Based on A6 observations	-	-	-	-	-	-	Intermittent/Permanent	2.95	2.15	0.73	0.53	moderate	low turbidity	101	-	-	-	90	10			low	herbs and terrestrial grasses	none	herbs and terrestrial grasses	channelized drainae ditch
Andrew's Creek	Unnamed Tributary A	A1	17T	460686	4897425	coldwater		Y	27-Oct-11	1	100	5	no rain	70.4 mm	n/a	Intermittent/Permanent	5	1.8	1.28	0.44	low	moderate turbidity	70	10	-	20	70	30	-	-	Low	terrestrial grasses	none	herbs and terrestrial grasses	channelized drainae ditch
Andrew's Creek	Unnamed Tributary A	A3	17T	461108	4897299	coldwater		Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	4	2.6	1.5	0.5	moderate	moderate turbidity	70	10	-	20	70	30	-	-	low	herbs and terrestrial grasses	none	herbs and terrestrial grasses	non-exsistent up stream, channelized ditch down stream
Andrew's Creek	Unnamed Tributary A	A4	17T	459320	4898278	coldwater		Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	2.6	2	0.57	0.17	moderate	moderate turbidity	90	-	-	10	-	80	10	10	low	terrestrial grasses	none	terrestrial grasses and herbs	channelized ditch
Andrew's Creek	Unnamed Tributary B	A7	17T	460128	4899721	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Andrew's Creek	Unnamed Tributary B	A9	17T	460167	4899724	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Tiverton Creek	Tiverton Creek	T1	17T	460411	4900197	coldwater	Rainbow Trout, Brown Trout, Common Shiner, Brook Stickleback, White Sucker, Northern Redbelly Dace, Rainbow Darter, Blacknose Dace, Creek Chub	Y	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Intermittent/Permanent	3.5	3	0.48	0.25	moderate	low turbidity	90	-	-	10	40	60	-	-	low	grasses and herbs	none	terrestrial grasses and herbs	channelized ditch
Tiverton Creek	Unnamed Tributary A	T2	17T	460676	4900651	coldwater		N	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Ephemeral	2.9	2.4	1.57	0.27	moderate	low turbidity	70	30	-	-	70	20	-	10	low	terrestrial grasses	none	terrestrial grasses, and deciduous Trees	poorly defined channel
Tiverton Creek	Unnamed Tributary B	T4	17T	462182	4899197	coldwater		N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral	3	2	0.8	0.3	low	moderate turbidity	60	-	-	40	100	-	-	-	low	100% terrestrial grasses	-	terrestrial grasses	poorly defined channel
Tiverton Creek	Unnamed Tributary C	T3	17T	461989	4898865	coldwater		N								Ephemeral																						poorly defined channel
Little Sauble Tributary	Unnamed Tributary A	L3	17T	462858	4900367	coldwater	Rainbow Trout, Brook Trout, Brown Trout, White Sucker, Blacknose Dace, Longnose Dace, Creek Chub, Brook Stickleback, Rainbow Darter, Rock Bass, Johnny Darter, Emerald Shiner, Spottail Shiner, Bluntnose Minnow, Fathead Minnow, Iowa Darter, Northern Redbelly Dace, Brassy Minnow, Common Shiner, Pearl Dace, Bullhead, Horneyhead Chub	N	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Ephemeral	4.2	3.1	1.1	0.3	low	moderate turbidity	60	40	-	-	100	-	-	-	low	100% terrestrial grasses	-	terrestrial grasses	channelized
Little Sauble Tributary	Unnamed Tributary A	L2	17T	462695	4900642	coldwater		N	28-Oct-11	2-3	100%	7	0	71.4 mm	n/a	Ephemeral	3.65	3.15	0.95	0.25	moderate	moderate turbidity	30	40	-	30	30	50	-	-	low	terrestrial grasses	none	terrestrial grasses	poorly defined channel
Little Sauble Tributary	Unnamed Tributary B	L1	17T	463079	4901055	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Little Sauble Tributary	Unnamed Tributary B	L4	17T	461604	4901262	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Kincardine Creek	PNK13	17T	458981	4894998	coldwater		Y	23-Nov-11	2	20%	6	none	13.6 mm	0.6 mm	Intermittent/Permanent	11.2	6.4	0.7	0.3	low	low turbidity	100	-	-	-	30	30	-	40	low	100% terrestrial	-	Trees, shurbs and grasses	naturalized channel
Kincardine Creek (North Penetangore River Tributary)	Kincardine Creek	PNK22	17T	460198	4895681	coldwater		Y	28-Oct-11	2-3	100%	7	none	71.4 mm	n/a	Intermittent/Permanent	3.5	3.5 (at bank full)	0.68	0.68	moderate	high turbidity	100	-	-	-	50	50	-	-	low	terrestrial grasses	none	terrestrial grasses	defined channel
Kincardine Creek (North Penetangore River Tributary)	Kincardine Creek	PNK25	17T	459595	4895342	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	7.1	3.1	1.2	0.1	low	moderate turbidity	80	20	-	-	100	-	-	-	low	100% terrestrial	-	-	defined channel
Kincardine Creek (North Penetangore River Tributary)	Kincardine Creek	PNK26	17T	457223	4894555	coldwater		Y	18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	7	6.1	0.85	0.3	low	high turbidity	60	40	-	-	100	-	-	-	low	100% terrestrial	-	-	defined channel
Kincardine Creek (North Penetangore River Tributary)	Kincardine Creek	PNK28	17T	457151	4894477	coldwater		Y	Based on PNK26 observations on 18-Nov-11	2	40%	-1	none	13.4 mm	2.2 mm	Intermittent/Permanent	7	6.1	0.85	0.3	low	high turbidity	60	40	-	-	101	-	-	-	low	100% terrestrial	-	-	defined channel

Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK2	17T	465535	4893161	coldwater	Brook Trout, Rainbow Trout, Smallmouth Bass	N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK3	17T	465062	4893577	coldwater		Y	26-Oct-11	3	100	7	light rain	70.4 mm	n/a	Intermittent/Permanent	2.05	1.93	0.64	0.45	modearte	high turbidity	50	10	-	40	70	30	-	-	low	herbs and grasses	none	herbs and terrestrial grasses	channelized drainae ditch
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK4	17T	463887	4893964	coldwater		Y	-	-	-	-	-	-	-	Intermittent/Permanent	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	defined channel
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK7	17T	463404	4894437	coldwater		Y	26-Oct-11	3	100	7	light rain	70.4 mm	n/a	Intermittent/Permanent	2	4.1 (channel Flooded	0.62	0.84	moderate	high turbidity	50	40	-	10	70	30	-	-	low	terrestrial grasses	none	herbs, terrestrial grasses, and deciduous trees	very turbid water
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK8	17T	462930	4894311	coldwater		Y	26-Oct-11	3	100	7	light rain	70.4 mm		Intermittent/Permanent	4.3	5.4 (channel Flooded)	0.7	0.84	moderate	high turbidity	70	30	-	-	-	90	10	-	low	herbs and terrestrial grasses	none	herbs and terrestrial grasses	very turbid water
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK9	17T	462603	4894460	coldwater		Y	26-Oct-11	3	100	7	light rain	70.4 mm		Intermittent/Permanent	1.7	2.7 (channel flooded)	0.47	0.58	high	high turbidity	70	30	-	-	-	60	40	-	low	herbs and terrestrial grasses	none	pasture, terrestrial grasses	very turbid water
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK10	17T	462115	4894798	coldwater		Y	26-Oct-11	3	100	7	light rain	70.4 mm		Intermittent/Permanent	4	5 (channel Flooded)	1.05	1.3	moderate	high turbidity	70	30	-	-	50	50	-	-	low	herbs and terrestrial grasses	none	herbs and terrestrial grasses	very turbid water
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK12	17T	464656	4893903	coldwater		Y	9-Dec-11	3	100	-1	snow	72.6 mm		Intermittent/Permanent	2.4	1.38	0.55	0.145	moderate	moderate turbidity	95			5	90	10			low	5% aquatic vegitation	none		Channelized ditch
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK16	17T	463175	4894306	coldwater		Y	23-Nov-11	2	20%	6	none	13.6 mm	0.6 mm	Intermittent/Permanent	5.5	0.6	1.3	0.12	low	low turbidity	80	20	-	-	100	-	-	-	low	100% terrestrial	-	herbs and terrestrial grasses	channelized through agricultural field
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary A	PNK17	17T	462075	4894885	coldwater		Y	28-Oct-11	2-3	100%	7	none	71.4 mm	n/a	Intermittent/Permanent	No defined Channel	1.75	-	0.07	low	Clear	80	-	-	20	100	-	-	-	low	terrestrial grasses	none	Willow and terrestrial grasses	channelized through agricultural field
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary B	PNK6	17T	462689	4893606	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary C	PNK5	17T	463739	4893729	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary C	PNK24	17T	463570	4893874	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary D	PNK15	17T	463741	4894460	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary D	PNK23	17T	464191	4894502	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary E	PNK14	17T	464859	4893873	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary F	PNK11	17T	463264	4895094	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary F	PNK18	17T	462506	4895650	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary G	PNK1	17T	463344	4896270	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary G	PNK19	17T	462514	4896022	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary G	PNK20	17T	462736	4896051	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary G	PNK21	17T	463734	4896196	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Kincardine Creek (North Penetangore River Tributary)	Unnamed Tributary H	PNK27	17T	456400	4893151	coldwater		N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained
Teeswater River	Unnamed Tributary A	TW1	17T	466930	4891060	n/a	n/a	N	Screened out based on air phot interpretation	-	-	-	-	-	-	Ephemeral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	channel non existent, tile drained

P3, P13 and P26 all had previous survey locations