Stantec

NIAGARA REGION WIND FARM

WATER ASSESSMENT AND WATER BODY REPORT

Appendix C

Field Notes



Stantet				
Station #	Project Name Niagara Wind			
Watercourse Name_unknawn	Project # 1/004.58269			
Photos	Field Staff J. Velne, 1c. Clayten Time			
Weather conditions in previous 24 hrs				
GPS Coordinates (Zone)	N Datum Nad 8.			
Descriptive Location Not Rail Co	the and Greenlane with of			
And verys	and which directly the post of			
Water Quality	noacces			
	·			
Water Temperature (°C)	pHConductivity (μS/cm)			
Time in situ measurements taken	Air Temperature (°C)			
Time in situ measurements taken				
Watercourse Dimensions & Morphology				
Mean Watercourse Width (m)				
Mean Bankfull Width (m)	Mean Water Depth(cm)			
	% Run% Flat			
Evidence of eroding banks, Comments on ba	ank stability			
Substrate (% cover)				
	SandSiltMuck			
Boulder Gravel	SandSiltMuck ClayMarl Detritus			
	Detitus			
In-water Cover				
Cover Types Present (circle): Underco	tut Banks Deep Pool Watercress Aquatic Veg			
Overhanging Vegetation Woody Debris	Boulder Other			
Riparian Zone				
Riparian Cover (% of watercourse shaded, de	lominant vegetation, mature or early successional)			
Adjacent Land Use				
orchard				
Fish Habitat Potential Critical Habitat (spawning or nursery areas, g	groundwater upwellings)			
<u> </u>				
Migratory Obstructions (seasonal, permanent				
Note any fish observations no access				
Waterbody Notes Natural Watercourse Trapezoidal Characteristics Character	nannel Grassed Swale Buried Tile ut Pond Dominated by Aquatic Veg Dry			
Other Habitat Notes, Incidental Wildlife Ob	oservations, etc. <u>No access, seep frama</u>			
1/ 0/ 1/0-				
Field Notes Authored by Field	Id Notes QA/QCed by			





		1
Station #	Project Name Niagara W	ind
Watercourse Name unknown	Project # 160958269	
Photos	Field Staff J. Veene . V. Claut	9-1
Date June 22/12.	Time	
Weather conditions in previous 24 hrs	- ethumid ~32°C+	
GPS Coordinates (Zone) 17T E 621	130 N 478 1286	Datum Nad 83
Descriptive Location off of lange	street, East of	ThirtyRd
Water Quality		
	Conductivity (uS/cm)	
Water Temperature (°C)	Conductivity (μS/cm) Air Temperature (°C)	
Time in situ measurements taken	7 Tomporatore (o)	
Watercourse Dimensions & Morphology		
Mean Watercourse Width (m)	Maximum Pool Depth((cm)
Mean Bankfull Width (m)	Mean Water Depth((cm)
% Riffle % Poo		% Flat
Evidence of eroding banks, Comments on bank sta	ability	
Substrate (% cover)		
Bedrock 4 O Cobble	Sand 40 Silt	Muck
Boulder Gravel	Clay Mari	Detritus
In-water Cover Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris	iks Deep Pool Watercress Boulder Other	Aquatic Veg
Riparian Zone		
Riparian Cover (% of watercourse shaded, domina	nt vegetation, mature or early succession	onal)
Adjacent Land Use	natue	
residential, bushlot.	roads.	
Fish Habitat Potential		
Critical Habitat (spawning or nursery areas, ground	water upwellings)	
Migratory Obstructions (seasonal, permanent)	sen, foraging	
an-perched	culvert	
Note any fish observations		
Waterbody Notes		The second secon
Natural Watercourse Trapezoidal Channel	Grassed Swale Bu	ried Tile
Surficial Drainage (i.e. furrows) Dugout Pond		Dry
Other Ḥabitat Notes, Incidental Wildlife Observa	itions, etc. Channel is defined -	hos balles &
cobble over mygim yeg is	Sumar Winner cugary	rado, manto lo
maple, grape		
Field Notes Authored by K. C. (WHO) Field Notes	NAE	
ried Notes Additioned by The Control of the Control	QA/QCed by	



outside Project Lock Aug 26 mp.

REAX

Station # Project Name Nagara Wind Watercourse Name unknown Project Name Nagara Wind Project # 160958269 Field Staff Staff Time 0:46 Weather conditions in previous 24 hrs hat humid 132°C+ GPS Coordinates (Zone) 17T E 6220 6 N 478132 Datum Nad 83 Descriptive Location
Water Quality Dissolved Oxygen (mg/L) 8.00 pH 8.70 Conductivity (μS/cm) 835 Water Temperature (°C) 20.10 Air Temperature (°C) 25.00 Time in situ measurements taken 10.46
Watercourse Dimensions & Morphology Mean Watercourse Width(m)
Substrate (% cover) BedrockOCobbleSandOSiltMuckBoulderOGravelClayMarlDetritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder OtherA
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Hair Gray Note any fish observations
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observations, etc. Channel to lots of wedges abble Shaded by jewel weed walnuts of sugar made Fast side of Road's more open Field Notes Authored by K Many Field Notes QA/QCed by ME to soil falling in





Stantec

Station # 2-3	Brokest Name All'a or a 11200
Watercourse Name wnknown	Project Name Niagara Wind Project # 160950269
Photos	Field Staff Veone Clayton.
Date June 2/12.	Time
	humidar32°C
GPS Coordinates (Zone) 17T E 622	300 N 4781050 Datum Nad 83
Descriptive Location Off of Vone	theet east of 2-2
Water Quality	
Dissolved Oxygen (mg/L) pH	Conductivity (uS/om)
Water Temperature (°C)	Conductivity (μS/cm) Air Temperature (°C)
Time in situ measurements taken	All Temperature (*C)
Time III sita measurements taken	5
Watercourse Dimensions & Morphology - Oxy	γ
Mean Watercourse Width(m)	Maximum Pool Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth(cm)
% Riffle% Poo	/
Evidence of eroding banks, Comments on bank sta	ibility
Substrate (% cover)	
Bedrock 50 Cobble	Sand/OSiltMuck
Gravel	ClayMarlDetritus
In-water Cover	
Cover Types Present (circle): Undercut Ban	ks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	
Riparian Zone Riparian Cover (% of watercourse shaded, dominal	nt vogotation, mature or parly augagonianally
Tiparian cover (% or watercourse snaced, domina	ni vegetation, mature of early successionary
Adjacent Land Use	
Vesidential Road	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	water upwellings)
Spauning nursent for	raging.
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Twote arry fish observations	
Waterbody Notes	
Waterbody Notes Natural Watercourse Trapezoidal Channel	Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Sware buried Tile
Dayout Folk	d Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	itions, etc. Channel well do fined to cobble
& harlders, shaded by Sun	
1/ al .1	
Field Notes Authored by K. (1994) Field Notes	OA/OCed by MA





Station # 3-1	Project Name Niagara Wind
Watercourse Name unknown	Project Name Niagara Wind Project # 160950269 Field Staff Nogne, K. Clayton
Photos	Field Staff J. Vo ane, K. Clayton
Date June 21/12.	Time
Weather conditions in previous 24 hrs	ahumid ~32°C
GPS Coordinates (Zone) 17 E 6 30	2156 N 4780325 Datum Nad 83
Descriptive Location Off Man	Hainview Road, North of Mctood
Water Quality - Dr V	
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	M : / B 18 11
Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth(cm)
% Riffle% I Evidence of eroding banks, Comments on bank	Pool% Run% Flat
Evidence of eroding banks, Comments on bank	stability
Substrate (% cover) - all uca Bedrock Cobble	zetated
BedrockCobble	SandSiltMuck
BoulderGravel	Clay Marl Detritue
In water Cover	Typha
In-water Cover Cover Types Present (circle): Undercut E	Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dom	ninant vegetation, mature or early successional)
8570 Typha, ear	W
Adjacent Land Use	*
grape vine orchan	d, woodlot, Road.
	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, grounds	undwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Waterbody Notes Natural Watercourse Trapezoidal Channel	nel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout P	Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obse	
Road dominated by Typha & Pr	gragmites. on, west-side of Maintains
Channel Haw into Farent. J	haded by Willan, maple, grape etc
Field Notes Authored by K Clautan Field No	lotes QA/QCed by
cleid Notes Authored by / Link All VIV Link Held No	otes CA/CLed DV 1 * * C





~ -	
V 2	ntor
-740	nuc

Station # 3-2	Project Name Niagara Wind
Watercourse Name unknown	Project # 160950269
Photos see photo log Date June 2/12.	Field Staff J. Veene K. Clauten
Date June 2/12.	Time : 33
Weather conditions in previous 24 hrs	hat shumid 232°C+
GPS Coordinates (Zone) 17 E	(022170 N 4779879 Datum Nad 8=
Descriptive Location Offor	Maintain View Rd. NWest OF McCood
Acet	
Water Ovelity	DM A
Water Quality	Oceanies de la Colonia
Dissolved Oxygen (mg/L)	pH Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	y /
Mean Watercourse Width (m)	
Mean Bankfull Width (m)	
% Riffle	
Evidence of eroding banks, Comments on	
Evidence of croding banks, Comments of	Dank Stability
Substrate (% cover)	
BedrockCobb	leSandSilt Muck
Boulder Grave	
Overhanging Vegetation Woody Debr Riparian Zone Riparian Cover (% of watercourse shaded,	rcut Banks Deep Pool Watercress Aquatic Veg Boulder Other, dominant vegetation, mature or early successional)
Adjacent Land Use	
	21
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas	s groundwater upwellings)
Contider Flasher (oparining of haroof) aroac	s, ground vacor aptroximage)
Migratory Obstructions (seasonal, permand	ent) ched culvert -extreme doce
Note any fish observations	The same of the sa
. Tota any non-about anona	
Waterbody Notes Natural Watercourse Trapezoidal Countries Dug	Channel Grassed Swale Buried Tile
Other Helitat Blates Included 1989 1995	Observations as observation challes I for a
Other Habitat Notes, Incidental Wildlife	hing it.
§ /	
Field Notes Authored by K. C. M.	Field Notes QA/QCed by W

Maintainview. Mc/2001 Rd.





Station # 3 -3 Watercourse Name unknown Photos Date Dune 20/92 Weather conditions in previous 24 hrs GPS Coordinates (Zone) 171 E 022 Descriptive Location Descriptive Location	Project Name Niagara Wind Project # 160958269 Field Staff Scene Roads Time 12:00 8 N 477938 Datum Nad 83
Water Quality Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/cm) Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m)% Riffle% Pool Evidence of eroding banks, Comments on bank sta	
Substrate (% cover) BedrockCobbleBoulderGravel	Clay Marl Detritus ks Deep Pool Watercress Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, domina Adjacent Land Use	nt vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	lwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pone	
Other Habitat Notes, Incidental Wildlife Observation of the Habitat Notes, Incidental William Notes, I	next dow creating a bear next
Field Notes Authored by L. Clauda Field Notes	QA/QCed by



	I NO REASI.
Station #	Project Name Niagara Wind mp 3
Watercourse Name unknown	Project #160958269
Photos see photo (as	Field Staff Jileene, K. Clayton
Date June 20/12.	Time 2 : 1, 2
Weather conditions in previous 24 hrs	not a humid
GPS Coordinates (Zone) 17T E 6 3 3	208 N 478942 Datum Nad 83
Descriptive Location Offor Mo	untainview Rd, South of 3.3.
Water Quality	Dry
Dissolved Ovvgen (mg/L)	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C) Δ5
Time in situ measurements taken	y
Watercourse Dimensions & Morphology	· /
Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth(cm)
% Riffle % P	
Evidence of eroding banks, Comments on bank	stability
Substrate (% cover)	
BedrockCobble	Sand 80 Silt Muck
BoulderGravel	ClayMarl 2 O Detritus
In-water Cover	
Cover Types Present (circle): Undercut B	anks Deep Pool Watercress Aquatic Veq
Overhanging Vegetation Woody Debris	
Name of the state	Doddor Othor
Riparian Zone	
Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature or early successional)
	ypha, early
Adjacent Land Use	
grape VInis	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, grou	indivator unwallings)
Citical riabitat (spawning of fluisery areas, grou	illuwater upweilings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes	a 200 East
Natural Watercourse Trapezoidal Chann	nel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Po	
Light Side	Borninated by Aquatic Veg Bry
Other Habitat Notes, Incidental Wildlife Obser	rvations, etc. Small shallon channel it
aguatic veg (Tupha) 1	Mater Clauma on wed side worth
on pact latert ride icin	a bush of the inicia cuponox sumac
Walnut a avano	The state of the s
Field Notes Authored by K. C. Harris Field Notes	tes OA/OCed by M.F.



No longer in Project Lown MP.



Stantec				
0 " 5-1		D : N1		~ 1
Station #		Project Name	agara Wi	1 (0)
Watercourse Name unknown		Project # 1609	79767	
Photos June 20/12:			ere, 1cc	ayten
	()	Time 10 : 15	2000	`
Weather conditions in previous 24		t ghumid		1 10
GPS Coordinates (Zone) 171		N'4	and the second	atum Nad 8
Descriptive Location Office	T BAGE	Road East,	027+V+ IV	myrd
Water Quality				
Dissolved Oxygen (mg/L)	pH	Conductivity	/ (μS/cm)	
Water Temperature (°C)		Conductivity Air Temperature (°C	n'as'°C	
rime in situ measurements taken				
Watercourse Dimensions & Mo				
	(m)	Maximum Pool Dept		m)
Mean Bankfull Width/_	, ,			m)
	% Po		% Run	% Fla
Evidence of eroding banks, Comm	nents on bank s	tability		
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel		Siit Marl	Detritus
bodidci	aravcr	Olay	IVIQII	Dening (
n-water Cover			Al and a second and	
Cover Types Present (circle):	Undercut Ba	nks Deep Pool	Watercress	Aquatic Veg
Overhanging Vegetation Woo	ody Debris	Boulder Other		
Riparian Zone				
Riparian Cover (% of watercourse	shaded, domin		or early successio	nal)
Adjacent Land Use		1		
Residentia	Road			
	F			
Fish Habitat Potential Critical Habitat (spawning or nurse	onvarage group	dwatar upwallings)		
Childa Habitat (Spawiling of Hurse	Siy aleas, gioun	end foragmen		
Migratory Obstructions (seasonal,				
nigratory Obstructions (seasonal,	permanenty			
Note any fish observations				
Vaterbody Notes				
Vaterbody Notes Vatural Watercourse Transport	ezoidal Channe	el Grassed S	wale Bu	ried Tile
Surficial Drainage (i.e. furrows)		nd Dominated b	y Aquatic Veg defined Char	Dry
Other Habitat Notes, Incidental	Wildlife Ohsen		- AND 1	
Cobblet haddona N		of Road & Co		LOCKA TIN
			LLIMETOTIC TO	VIJIKIA <u>U</u> V
Chaded) Jatha	<u>.C/OV- 0 00</u>		000000000000000000000000000000000000000	146

Field Notes QA/QCed by



No longs in Project Locu mp

Station #	Project Name Niagara Wind
Watercourse Name unknown	Project #
Photos	Field Staff J Young K Clay
Date June 22/12.	Time (0 : 2)
	thumid ~ 32°C+
GPS Coordinates (Zone) 17T E 620	931 N 4780534 Datum Nad 83
Descriptive Location Off of Thirt	1 Rd. Nof Elm tree Rd Valentro
	The fact of the second of the
Water Quality	
	Orand att 9 (O/)
Dissolved Oxygen (mg/L) pH	Conductivity (µS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements takén	
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	Maximum Pool Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth(cm)
% Riffle% Poo	l% Run % Flat
Evidence of eroding banks, Comments on bank sta	bility
Substrate (% cover)	
Bedrock 50 Cobble	SandOSiltMuck
BoulderGravel	ClayMarlDetritus
In-water Cover	
Cover Types Present (circle): Undercut Bank	
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominar	nt vegetation, mature or early successional)
50% trees, mat	ure
Adjacent Land Use	
bushlot, orchard, Ro	ad
Figh Habitat Datastial	
Fish Habitat Potential	votor upwallings)
Critical Habitat (spawning or nursery areas, ground	valer upwerrings)
Migratory Obstructions (seasonal, permanent)	- nw. Aluliotti Ji
$\frac{\partial \mathcal{M}}{\partial \mathcal{M}} = \mathcal{D} \mathcal{L} \mathcal{M}$	they culted a geoplace.
Note any fish observations	
Waterbady Natas	/
Waterbody Notes Natural Watercourse Trapezoidal Channel	Crossed Swele Buried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale Buried Tile
Duyout Pond	Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	tions, etc. Alop, do Avad dannal
II TUDha hac collide & bail	donc or allenge in underlying of
Mannel over through avape	
	VIYV IN IN IN A + VI VI IV VIINATO +
partianof channel that ages through has	hot - arranded by Barn and walnut
partian of channel that goes through box	hot - surrainded by Bassinged, Walnut,
Field Notes Authored by K. Clayta Field Notes (Shot - surrainded by Bassingson, walnut, or bank grape etc -vent steep - or bedrock



Station # Watercourse Name Whotos Date Weather conditions in previous GPS Coordinates (Zone) 17 Descriptive Location	24 hrs 4 0 0 3 0 3	Project Name Nice Project # 16093 Field Staff July Time 2 48	8269 6 Folant 32°C 779250 Da	atum Nad 83
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements take	pH	Conductivity Air Temperature (°C)	(μS/cm) 25°C	
Watercourse Dimensions & Mean Watercourse Width Mean Bankfull Width % Riffle Evidence of eroding banks, Con	(m) (m) %Poo	shilita.	(cr (cr _% Run	n) % Flat
Substrate (% cover)Bedrock Boulder	CobbleGravel	Sand Clay	Silt Marl	Muck Detritus
In-water Cover Cover Types Present (circle): Overhanging Vegetation W			Watercress <	Aquatic Veg
Riparian Zone Riparian Cover (% of watercour	'se shaded, domina	nt vegetation, mature o	r early successior	nal)
Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu	, ,	rape vinus	Y	
Migratory Obstructions (season				
Note any fish observations				
Waterbody Notes Natural Watercourse Tr Surficial Drainage (i.e. furrows)	rapezoidal Channel Dugout Pond			ed Tile Dry
other Habitat Notes, Incidenta	al Wildlife Observa	t - lawn cu Mich channel	definition or than or ci	Scovoida but RCG
Field Notes Authored by K. Clayla	Field Notes	QA/QCed by		M.f.

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc





Stantec Project Name Niagara Wind Station # Watercourse Name_unknoim Project # Photos __ Field Staff Time Date Weather conditions in previous 24 hrs Datum Mad GPS Coordinates (Zone) 17T E Descriptive Location **Water Quality** Dissolved Oxygen (mg/L)_ Conductivity (μS/cm) Water Temperature (°C) Air Temperature (°C) QS C Time in situ measurements taken **Watercourse Dimensions & Morphology** Maximum Pool Depth_ Mean Watercourse Width 🏂 Mean Bankfull Width (m) Mean Water Depth (cm) % Run % Riffle % Pool % Flat Evidence of eroding banks, Comments on bank stability Substrate (% cover) Sand Silt Muck Bedrock Cobble Marl Boulder Gravel Clay **Detritus** 80G **In-water Cover** Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ved Overhanging Vegetation Woody Debris Other Boulder Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 100% - trees, mature. Adjacent Land Use **Fish Habitat Potential** Critical Habitat (spawning or nursery areas, groundwater upwellings) ¿Dawning nursens foraa Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse ____ Trapezoidal Channel _____ Grassed Swale Surficial Drainage (i.e. furrows) ____ Dugout Pond ____ Dominated by Aquatic Veg Other Habitat Notes, Incidental Wildlife Observations, etc. REA water buch of wade fined channol undercut banks Field Notes QA/QCed by _______ Field Notes Authored by Y

Bushlot
REA
8-1



Stantec					, chama
9-1		Project Na	me Niago	ara Wir	<u>(d) </u>
Station # Watercourse Name_unknaum	_	Project #	160950	269	
- Andrewski		Field Staff	J. Veer	e, K.cl	auton.
Photos June 20/12.		Time	13:20		
Weather conditions in previous 24	hrs ho-	& humid			
GPS Coordinates (Zone) 171	F (2)90=		N 4 / /	5456 Da	tum Nad 83
Descriptive Location	I Ra H	northio	Funithi	le north	of Yourg
Descriptive Location	and now	th of You		· · · · · · · · · · · · · · · · · · ·	
		*	J-		
Water Quality	~LJ	^	onductivity (μS	/cm)	
Dissolved Oxygen (mg/L)	— pn_	O	erature (°C) $\underline{3}$	100	
Water Temperature (°C)		All rempe	rature (O)		
Time in situ measurements taken_					
Watercourse Dimensions & Mor	phology	<u></u>		/a=	~ \
Mean Watercourse Width	(m)		Pool Depth		•
Mean Bankfull Width 5-7	(m)	\	ter Depth		% Flat
% Riffle	% P		%	Run	/o i iat
Evidence of eroding banks, Comm	ients on bank :	stability —			
Substrate (% cover)	Orbbla		and	Silt	Muck
Bedrock	Cobble		ay		Detritus
Boulder	Gravel		ay	IVICII	
Overhanging Vegetation Woo	Undercut B ody Debris	Boulder			
Riparian Cover (% of watercourse	shaded, domi	inant vegetati A	on, mature or e	arry succession	<u> </u>
Adjacent Land Use					
farm land	SOY				
Fish Habitat Potential		indwater unw	ellings)		
Critical Habitat (spawning or nurse	HINDEN 1	Jan Jan 7	` 1		
Migratory Obstructions (seasonal,	, permanent)	¥	- remain		
Note any fish observations					
Waterbody Notes Natural Watercourse	1				
Waterbody Notes				. D.,	riad Tila
Natural Watercourse V N Trap	pezoidal Chani	nel	Grassed Swal	eBu	ned rile
Surficial Drainage (i.e. furrows)	Dugout P	ond	Dominated by A	quatic veg	Dry
Other Habitat Notes, Incidental	Wildlife Obse	ervations, etc			
-					
	*2		ME		
Field Notes Authored by K - Clauto	Field N	iotes QA/QCed by	V - C C		



7	ON	REA	2	
RM			WK-	

Stantec				4
Station #	Pro	iect Name 📈	agara Wi	nd
Watercourse Name unknown	Pro	ect #	158267 <u> </u>	
	Fie		~ L Clay	10/ ·
Photos Date June 20/12.	Tin	ne <u>B∶≲∂</u>	<u> </u>	
Weather conditions in previous 24 hrs	hotth			
GPS Coordinates (Zone) 17T E	1770	N 4		atum Nad 83
Descriptive Location Off Saut	h Grim	264 Rd	-North	ail Line
Water Quality \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			(0 /)	
Dissolved Oxygen (mg/L)	pH	Conductivity	y (μS/cm) :) _ <u>30°C</u>	
Water Temperature (°C)	Air	Temperature (°C	30 (
Time in situ measurements taken				
Watercourse Dimensions & Morphology	,		4.	
Mean Watercourse Width(m)		ximum Pool Dept		cm)
Mean Bankfull Width 2 - 5 (m)		an Water Depth_		cm)
% Riffle	_% Pool	\	% Run	% Flat
Evidence of eroding banks, Comments on	bank stabilit	у —		
Cubatrata (9/ aguar)				
Substrate (% cover) Bedrock Cobb	ام	Sand	Silt	Muck
				Detritus
bouldeldidve		· · · · · · · · · · · · · · · ·		
In-water Cover Cover Types Present (circle): Unde Overhanging Vegetation Woody Debri	rcut Banks is Bo	Deep Pool ulder Othe	Watercress r	Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded,	, dominant v	egetation, mature	or early succession	onal)
Adjacent Land Use Say	/			
Fish Habitat Potential Critical Habitat (spawning or nursery areas	s, groundwat	er upwellings)		
Migratory Obstructions (seasonal, perman	ent)			
Note any fish observations				
Waterbody Notes Natural Watercourse Trapezoidal Surficial Drainage (i.e. furrows) Dug	Channel^ jout Pond	Grassed S	Swale Buby Aquatic Veg	uried Tile
Other Habitat Notes, Incidental Wildlife	Observation	ns, etc.		
Field Notes Authored by K Clayton		QCed by ME		





	~				
Stantec	tribonile				1
Station # 11-2	TOVE	Project Name	Niago	ura Wi	nd
Watercourse Name water	wr	Project #	6095800	(69)	
Photos		Field Staff	INDOV.	. K. clau	ton
Date June 20/12	-	Time 3	: SS	,	
Weather conditions in previou	s 24 hrs հձ	ta humid			
GPS Coordinates (Zone) 1	7T E 6176		N		atum Nad 8.
Descriptive Location	ff of S.C	avinoshy ec	15 Sauth	of Rai	1 By walk
- YO	access	*			
Water Quality		cry pur prof _		. 10 <	and a
Dissolved Oxygen (mg/L)		8.58 Condu	uctivity (μS/d	m) <u> </u>	<u> </u>
Water Temperature (°C)		Air Temperatu	re (°C) <u><</u>	2 00	
Time in situ measurements ta	ken				
Watercourse Dimensions &		Massium Dan	I D th		
Mean Watercourse Width	<u>(m)</u>	Maximum Poo	Deptn		cm)
Mean Bankfull Width ~ 5	(III) % Po	Mean Water D	% R	<u> </u>	cm) % Flat
Evidence of eroding banks, C			Ew und		Tooks mos
Stable -	regerented	banks			
Substrate (% cover)	<i>y</i>				
Bedrock	Cobble Gravel	Sand	50	Silt	Muck
Boulder	Gravel	<u> </u>		Marl	Detritus
Cover Types Present (circle): Overhanging Vegetation			ool Wate Other	ercress 	Aquatic Veg
Riparian Zone Riparian Cover (% of waterco	urse shaded, domin		ature or ear	ly succession	onal)
Adjacent Land Use	111031110				ŧ.
Fish Habitat Potential Critical Habitat (spawning or n	oursery areas, grour	ndwater upwelling	s)		
Migratory Obstructions (seaso	(3)				
Note any fish observations		× 11			
Waterbody Notes Natural WatercourseSurficial Drainage (i.e. furrows					
Other Habitat Notes, Inciden					
	tuchid al	gu maling.			
· (Right fleater	· Kildoer	<u> </u>			
Field Notes Authored by K. Claud	- Addressed	es QA/QCed by^			
I IOIU INOLOS AUGIOTOU DY	I IGIO I VOLE	S arraced by			





Stantoc	

Station #		Project Name	liagara U	sind
Watercourse Name unknow		Project #l(oC	958269	w
Photos			Veene, K	-clayter
Duit	f	Time 14:5) D	8
Weather conditions in previous 2		& humid		
GPS Coordinates (Zone) 17		<u> </u>		<u>Datum Nad</u> 8
Descriptive Locationoff_	Crell:	Brimsby Ro	Lo Satthe	of 20 mils
Water Quality - dry	L			
Dissolved Oxygen (mg/L)	pH	Conductiv Air Temperature (°	rity (uS/cm)	
Water Temperature (°C)		Air Temperature (°	c) 327	
Time in situ measurements take	n	, , , , , , , , , , , , , , , , , , , ,		
Watercourse Dimensions & Me				
Mean Watercourse Width		Maximum Pool De	pth	_(cm)
Mean Bankfull Width	(m)	Mean Water Depth		_(cm)
% Riffle	% Po	ol \	% Run	% Flat
Evidence of eroding banks, Com	ments on bank st	ability		
Substrate (% cover)		ŧ		
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel	Clay	Marl	Detritus
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours	oody Debris	Boulder Othe	er	
Adjacent Land Use	-			
Fish Habitat Potential				
Critical Habitat (spawning or nurs	sery areas, ground	lwater upwellings)		
Migratory Obstructions (seasonal		. 5-7		
	, permanent)			
Note any fish observations				
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)	pezoidal Channel Dugout Pond	Grassed S	Swale E by Aquatic Veg_	Buried Tile
Other Habitat Notes, Incidental	Wildlife Observa	itions, etc.		-
Field Notes Authored by K. Clauter		8.		
rield Notes Authored by F LU LANA	Field Notes	QA/QCed by I/\/ \/		





GPS Coordinates (Zone) 17T E 616302	Project # 1609 Field Staff J. Ke Time 4:36	Pt2029	Datum Nad 83
Water Quality Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity Air Temperature (°C	y (μS/cm))? <i>O</i> * C -	
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m) % Riffle% Pool Evidence of eroding banks, Comments on bank sta			
Substrate (% cover) BedrockCobbleBoulderGravel	Sand Clay	Silt_ Marl	Muck Detritus
In-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, domina	Boulder Other	or early succes	Aquatic Veg Marsh marigot
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground Migratory Obstructions (seasonal, permanent)	dwater upwellings)	unna)
Note any fish observations			
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon Other Habitat Notes, Incidental Wildlife Observa	d Dominated b	y Aquatic Veg_	Dry
Field Notes Authored by K Clanton Field Notes			



				1	10NREAS
	WIND FARI	M WATERBOD	Y RAPID ASSESSI	MENT FORM	detression
Photos Date Weather cond GPS Coordina	Name_unknau itions in previous ates (Zone)17 ocationoff_co	24 hrs 10 + +	Project Name Nice Project # 16093 Field Staff N 45 N 45 Road Sautho	771895 Da	uter.
Water Temper	<i>f</i>	Marie and the second	Conductivity Air Temperature (°C)	(μS/cm) -3 Ο	
Mean Waterco Mean Bankfull	l Width <u> </u>		ol		
Substrate (%	cover) Bedrock Boulder	CobbleGravel	Sand Clay		Muck Detritus
	Present (circle):	Undercut Bar oody Debris	nks Deep Pool Boulder Other_	Watercress (Aquatic Veg Hupiu
Riparian Zone Riparian Cove			ant vegetation, mature o	or early succession	al)
Adjacent Land	I Use Residen	tial, sou	, woodlat	to N	
Fish Habitat F Critical Habita		sery areas, ground	dwater upwellings)		
Migratory Obs	tructions (seasona	al, permanent)			
Note any fish o	observations	necessitatististististististististististististist			
Surficial Draina	courseTransfer age (i.e. furrows)_	Dugout Por	I Grassed Swind Dominated by	Aquatic Veg	Dry
Field Notes Authore	ed by K Claud	Field Notes	s QA/QCed by		





Stantec	1
010110111	Project Name Niagara Wind
Station #	Project # 160950269
	Field Staff J. Reene V. Cayton.
Photos Date June 20/12.	Time 4:50
	thumid:
GPS Coordinates (Zone) 17 E 6170	15 N 4771275 Datum Nad 8
Descriptive Location Off of Tober	Rd Sarthof SmithvilleRoad South
/3-2	
W	
Water Quality	3.45 Conductive (10/20) 2884
Dissolved Oxygen (mg/L) 13.04 pH	Air Temperature (°C) 30°C+
	Air Temperature (°C)
Time in situ measurements taken \(\simeq \)	<u> </u>
Watercourse Dimensions & Morphology	
Mean Watercourse Width 3 (m)	Maximum Pool Depth 0,50 (cm)
Mean Bankfull Width(m)	Mean Water Depth(cm)
% Riffle% Poo	
Evidence of eroding banks, Comments on bank sta	ability
Substrate (% cover)	15 0 1 10 000
Bedrock Cobble Gravel	Sand 90 Silt Muck
BoulderGravel	So Clay Marl Detritus
In-water Cover	+41
Cover Types Present (circle): Undercut Ban	nks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	
Riparian Zone	ent vogatation, mature or early avagagaianal
Riparian Cover (% of watercourse shaded, domina	
Adjacent Land Use	arly
Adjacent Land Ose	,
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	
Stawaing, nu ser	y, foraging
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	Din-head YOUS.
Note any non-observations	
Waterbady Nata	
Waterbody Notes Netweel Wetersource National Channel	Crossed Swales Buried Tile
Surficial Proinces (i.e. furrows) Pugget Box	Grassed Swale Buried Tile d Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	ations, etc. Red wing BB.
· froge green.	J
. J U	
	· · · · · · · · · · · · · · · · · · ·
Field Notes Authored by Field Notes	QA/QCed by
Field Notes	UNIQUED BY TVUC





C4	
V/3	ntec
Ju	IILEC

Station #	Project Name	Niagara W	ind
Watercourse Name unknown	Project #	60958269	
	Field Staff	J. Keene & K.	Clayton
Photos Date June 0/12.	Time ?	.04	
Weather conditions in previous 24 hrs	hot shum	i d	
GPS Coordinates (Zone) 17 E		N4771492	Datum Nad 8
Descriptive Location, off of			Smithuill
Rd		· ·	
Water Quality - no water	2		
Dissolved Oxygen (mg/L)	pH Condu	ictivity (uS/cm)	
Water Temperature (°C)	Air Temperatu	uctivity (μS/cm) re (°C) <u>30 °C </u>	
Time in situ measurements taken	/ii Tomporatur	0(0)	
Watercourse Dimensions & Morpholo	CIV.		
Mean Watercourse Width (m)	Maximum Bool	l Donth (
Mean Watercourse Width(m) Mean Bankfull Width(m)	Maan Water D	Depth(
			cm)
Evidence of eroding banks, Comments of		% Run	% Flat
Evidence of eroding banks, Comments of	on bank stability		
Substrate (% cover)			
	oble Sand	1.211	Muck
Boulder Gra	obleSand_ velClay	SIR Mort	Nuck Detritus
In-water Cover Cover Types Present (circle): Und Overhanging Vegetation Woody Del Riparian Zone	oris Boulder (Other	Aquatic Veg
Riparian Cover (% of watercourse shade	d, dominant vegetation, ma	ature or early succession	onal)
Adjacent Land Use			
Say			
Fish Habitat Potential Critical Habitat (spawning or nursery area	as, groundwater upwellings	s)	
Migratory Obstructions (seasonal, perma	nent)		
Note any fish observations			
Waterbody Notes Natural Watercourse Trapezoida Surficial Drainage (i.e. furrows) Du	I Channel Grass ugout Pond Domina	sed Swale Buated by Aquatic Veg	uried Tile Dry
Other Habitat Notes, Incidental Wildlife	Observations, etc.	Sections,	
Field Notes Authored by K. Clay Hon.	Field Notes ON/OCed by WA	E	



	Jon
1 "	DEA

Stantec Project Name Niagara Wind Station # 15-1 Watercourse Name unknown Project #__160958269 Photos Field Staff Date Time / Weather conditions in previous 24 hrs & humid GPS Coordinates (Zone) 17T E Descriptive Location Carth of 13-Mithville Water Quality - no water Dissolved Oxygen (mg/L) _____ _____ Conductivity (μS/cm) _ Water Temperature (°C) Air Temperature (°C) ______?o ~ + Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width_____(m) Maximum Pool Depth____(cm) Mean Bankfull Width (m) Mean Water Depth ____(cm) % Riffle /% Pool % Flat Evidence of eroding banks, Comments on bank stability Substrate (% cover) Cobble _____ Bedrock _Sand____Silt Muck Boulder Gravel Clay Marl **Detritus In-water Cover** Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) no shading - Creve Adjacent Land Use **Fish Habitat Potential** Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse____ Trapezoidal Channel ____ Grassed Swale ___ Buried Tile_ Surficial Drainage (i.e. furrows)_____ Dugout Pond_____ Dominated by Aquatic Veg_____ Other Habitat Notes, Incidental Wildlife Observations, etc.





Station # 5 - 2	Project Name Niagara	wind
Watercourse Name unknown	Project # 160958269	
Photos	Field Staff Voone, Kelau	J. Anger
	Time 15:27	
Weather conditions in previous 24 hrs		
GPS Coordinates (Zone) 17T E (2017)		1 Datum Nad 83
Descriptive Location Off of Tob	er Dd N of sict	Cen Road
Water Quality - no water		
Dissolved Oxygen (mg/L) pH Water Temperature (°C)	Conductivity (μS/cm)	
Water Temperature (°C)	Air Temperature (°C)	
Time in situ measurements taken		
Watercourse Dimensions & Morphology		
Mean Watercourse Width(m)	Maximum Pool Depth	(cm)
Mean Bankfull Width(m)	Mean Water Depth	(cm)
% Riffle% Poo		
Evidence of eroding banks, Comments on bank sta	ıbility	
Substrate (% cover)		
BedrockCobble	SandSilt_	
BoulderGravel	ClayMari	Detritus
In-water Cover		
Cover Types Present (circle): Undercut Ban	ks Deen Pool Watercress	Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other	Aqualic Veg
	State	
Riparian Zone		
Riparian Cover (% of watercourse shaded, dominal	nt vegetation, mature or early succ	essional)
Allered Leville		
Adjacent Land Use		
Crept.		
Figh Habitat Detartial		
Fish Habitat Potential	······································	
Critical Habitat (spawning or nursery areas, ground	water upweilings)	
Migratory Obstructions (seasonal, permanent)		
day,		
Note any fish observations		
Waterbody Notes	M.P.	
Natural Watercourse Trapezoidal Channel	Grassed Swale	Buriod Tilo
Surficial Drainage (i.e. furrows) Dugout Pond		
Sumolar Dramage (i.e. lunows) Dugout Fond	Dominated by Aquatic Vec	J DIY
Other Habitat Notes, Incidental Wildlife Observa	tions, etc. ************************************	
Field Notes Authored by Cayter Field Notes	QA/QCed by	



No lorger in Proj. Loca m.P.

REAX

)	WIND FARM	WATERBODY	RAPID	ASSESSMENT	FORM

Station #	Project Name Niagara Wind	
Watercourse Name unknown	Project # 160958269	
Photos Field Staff J. Keene, K. Clayton		
Date <u>Oune 21/12</u> .	Time 9:34	
Weather conditions in previous 24 hrs GPS Coordinates (Zone) 171 E 6 1798	N 4770895 Datum Nad 8.	
Descriptive Location <u>Facing</u> West look:		
	THE REP. LOTT CA PAY DANION RE	
Water Quality		
Dissolved Oxygen (mg/L) 5.89 pH_7	7.95 Conductivity (μS/cm) 3236	
Water Temperature (°C)3_3	Air Temperature (°C)	
Time in situ measurements taken 9:39	7.11 Temperature (o)	
Watercourse Dimensions & Morphology	,	
Mean Watercourse Width (m)	Maximum Pool Depth < m (cm)	
Mean Bankfull Width (m)		
% Riffle % Poo		
Evidence of eroding banks, Comments on bank sta	DIIITY all vegetated - tarry stable.	
Substrate (% cover)		
BedrockCobble	60 Sand 40 Silt Muck	
BoulderGravel	So Clay Marl Detritus	
In-water Cover	ty	
Cover Types Present (circle): Undercut Ban	ks Deep Pool Watercress Aquatic Veg	
Overhanging Vegetation Woody Debris		
Riparian Zone		
Riparian Cover (% of watercourse shaded, dominal	nt vegetation, mature or early successional)	
53 RCB earl	7	
Adjacent Land Use	,	
Fish Habitat Potential		
Critical Habitat (spawning or nursery areas, ground		
Migratory Obstructions (seasonal, permanent)	traging	
permanen	nt.	
Note any fish observations 10+5 of Ca	201-lobig individuals.	
Waterbody Notes		
Natural Watercourse Trapezoidal Channel	Grassed Swale Buried Tile	
Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatic Veg Dry	
Other Habitat Notes, Incidental Wildlife Observa	tions, etc. Heron	
V Claulen	IO A TE	
Field Notes Authored by Field Notes	QA/QCed by	



& No longer in Projetoch up

Janes	None
Station # $16-2$	Project Name Niagara Wind wes
Watercourse Name unknown	Project # 160950269
	Field Staff). Voone, K. clayfon
Photos	Time 9:47
Weather conditions in previous 24 hrs	
GPS Coordinates (Zone) 171 E (6179	35 N 4770529 Datum Nad 83
	axidean Rd South of Mitheville Rd
Custo et 16:1	ANGON PA JAIN NOT IMITITIEVICE RE
Water Quality — Ory	
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)
Water Temperature (°C)	Conductivity (μS/cm) Air Temperature (°C)
Time in situ measurements taken	
Watersauman Dimensions & Maryhalami	
Watercourse Dimensions & Morphology	Maximum Book Double (aux)
Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth(cm)
% Riffle % Pool	
Evidence of eroding banks, Comments on bank sta	Dility
······································	
Substrate (% cover)	
BedrockCobble BoulderGravel	10 Sand 90 Silt Muck
BoulderGravel	<u>Clay</u> Detritus
In-water Cover	
Cover Types Present (circle): Undercut Ban	la Doop Rool Watergroop Aquatio Vog
Overhanging Vegetation Woody Debris	
	Boulder Other
Riparian Zone an east side ad.	
Riparian Cover (% of watercourse shaded, dominar	nt vegetation, mature or early successional)
0% on west side ac	Die on cast ride RAG, Early
Adjacent Land Use	
formand say.	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	water upwellings)
Migratory Obstructions (consend nervenent)	
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
TVOIC any non-observations	
Waterbody Notes	
Natural Watercourse Trapezoidal Channel	
Surficial Drainage (i.e. furrows) Dugout Pond	
La west sid	
Other Habitat Notes, Incidental Wildlife Observa	
In no area - caulable played this	
REA (cauldn'+ drive+hraigh, has ag	watic veg defined channel).
/	
11 May Has	a pour



No longer in Proj. Cocharl REA WIND FARM WATERBODY RAPID ASSESSMENT FORM

	_ / \
Station # $10-3$	Project Name Niagara Wind
Watercourse Name unknown	Project # 160950269
Photos	Field Staff J. Keene rely Clarker
Date June 21/12.	Time 9:54
Weather conditions in previous 24 hrs	
GPS Coordinates (Zone) 171 E 617	946 N. 4769975 Datum Nad 8.
	viden Road South of 16-2.
North of Sixteen	Rd
Water Quality - /	10 water
Dissolved Oxygen (mg/L) pH	Conductivity (uS/cm)
Water Temperature (°C)	
Time in situ measurements taken	Air Temperature (°C) 30°C
Watercourse Dimensions & Morphology	Main a David David
Mean Watercourse Width(m)	Maximum Pool Depth(cm)
Mean Bankfull Width 3 (m)	Mean Water Depth(cm)
% Riffle% Po	/01/00
Evidence of eroding banks, Comments on banks	tability
Substrate (% cover)	
BedrockCobble	20 Sand 40 Silt Muck
Boulder Gravel	
Graver	<u> </u>
In-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris	nks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domina	ant vegetation, mature or early successional)
Adjacent Land Llee	
Adjacent Land Use	farmland
13/02/11/01/7	TUANTUMA
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, groun-	dwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes	
Natural Watercourse Trapezoidal Channe	I Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Por	nd Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observ	ations, etc. <u>navar channel fullof</u>
Field Notes Authored by K. Clayda Field Notes	s QA/QCed by



west of	Side PDR
L	>5D-4
east	>REA

Station # \& -	Proied	t Name IN La a	ara Du	. (0)
Watercourse Name_unknawn	Projec	t Name <u>Niag</u> t # 160958 Staff <u>Voon</u>	269	
	Field	Staff Voon	2 K - (a	14-61
Photos	Time	18:00		
Weather conditions in previous 24 hrs				
GPS Coordinates (Zone) 17T E	17954	N 476	,9752 Da	atum Mad
Descriptive Location Off Of Po	A Day	don Roll	action	sixteen
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	pHAir Te	_ Conductivity (μS mperature (°C)	S/cm)	
		· ·		
Watercourse Dimensions & Morphology				
Mean Watercourse Width (m) Mean Bankfull Width (m)	Maxim	num Pool Depth	(C	n)
Mean Bankfull Width (m)	Mean	Water Depth	(CI	n)
% Riffle	% Pool	%	Run	% FI
Evidence of eroding banks, Comments on b	ank stability			
Substrate (% cover)				
Redrock Cobble	· 18	Sand HO	Cilt	Muck
BedrockCobble BoulderGravel	,		Siit Marl	
Graver		_Clay	wari	Detritus
In-water Cover				
	cut Banke	Doon Pool We	atororogo (Aguatia Voa
Cover Types Present (circle): Under	cut Banks			
Cover Types Present (circle): Under	cut Banks Boulde		atercress (
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris	cut Banks Boulde			
Cover Types Present (circle): Underdoverhanging Vegetation Woody Debris Riparian Zone	Boulde	er Other		
Cover Types Present (circle): Underdoverhanging Vegetation Woody Debris Riparian Zone	Boulde	er Other		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of cast), typha 1026 (%)	Boulde	er Other		
Riparian Zone	Boulde	er Other		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of cast), typha 1026 (%)	Boulde	er Other		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of the control of the contro	Boulde	er Other		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Cast), typha 1024 (1994) Adjacent Land Use Fish Habitat Potential	Boulde	tation, mature or ea		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Cast), typha 1024 (1994) Adjacent Land Use Fish Habitat Potential	Boulde	tation, mature or ea		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Cast), typha Jozeph Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas,	Boulde dominant vege Scrub,	tation, mature or ea		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of cast), typha 1026	Boulde dominant vege Scrub,	tation, mature or ea		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner	Boulde dominant vege Scrub,	tation, mature or ea		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations	Boulde dominant vege Scrub,	tation, mature or ea		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations	Boulde dominant vege Scrub,	tation, mature or ea		
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Cast Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations	Boulde dominant vege Scrub, groundwater u	tation, mature or each	arly succession	nal)
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Chaptage Coverage Coverag	Boulde dominant vege Cerub, groundwater unt)	tation, mature or each	arly succession	ed Tile
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Ch Surficial Drainage (i.e. furrows) Dugo	Bouldedominant vege	tation, mature or each	arly succession	nal)
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Ch Surficial Drainage (i.e. furrows) Dugo	Bouldedominant vege	tation, mature or each of the station of the statio	arly succession Buriuatic Veg	ed Tile
Cover Types Present (circle): Underdoverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Cart) typha 102 market of a large of the course of the course shaded, of Cart) typha 102 market of a large of the course	Bouldedominant vege	pwellings) Grassed Swale Dominated by Aquetc.	Buri	ed Tile
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Cart Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Che Surficial Drainage (i.e. furrows) Dugo Other Habitat Notes, Incidental Wildlife O	groundwater unt) nannelut Pond bservations, e	cr Other tation, mature or execution, mature or execution powellings) Grassed Swale Dominated by Aquetc. ** east Specific Power powe	arly succession Buriuatic Veg	ed Tile
Cover Types Present (circle): Underdoverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Chesurficial Drainage (i.e. furrows) Dugo Other Habitat Notes, Incidental Wildlife O	Bouldedominant vege	cr Other tation, mature or execution, mature or execution powellings) Grassed Swale Dominated by Aquetc. ** east Specific Power powe	Buri	ed Tile
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Chesurficial Drainage (i.e. furrows) Dugo Other Habitat Notes, Incidental Wildlife O	groundwater unt) nannelut Pond bservations, enter of change of cha	grassed Swale Dominated by Aquetc.	Buriuatic Veg	ed Tile
Cover Types Present (circle): Under Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, Migratory Obstructions (seasonal, permaner Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Chesurficial Drainage (i.e. furrows) Dugo Other Habitat Notes, Incidental Wildlife O	groundwater unt) nannelut Pond bservations, enter of change of cha	grassed Swale Dominated by Aquetc.	Buriuatic Veg	ed Tile





Sta	ntec
Ju	IIIEC

Station # 19-1	Project Name Niagara Wind
Watercourse Name unknown	Project # 160950269
The state of the s	Field Staff J. Koons V. Clayton
Photos	Time \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
	thurnid
GPS Coordinates (Zone) 17T E (al (a7)	
Descriptive Location off of Mc Collum Canc. 4.	Rd, South of Sixteen Rd, Nof
Water Quality — dm/	
	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Moon Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Bankfull Width(m)	Mean Water Depth(cm)
Mean Bankfull Width (m) % Poo	ol% Run% Flat
Evidence of eroding banks, Comments on bank sta	ubility
Substrate (% cover)	
Bedrock Cobble	10 Sand 10 Silt Muck
Boulder Gravel	Sand Silt Muck Clay Marl Detritus
	,
In-water Cover Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris	ks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domina	nt vegetation, mature or early successional)
Adjacent Land Use	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	water upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	itions, etc. see photo?
	tract M.P. large a reasof Surficial
- no agriation	Hey . Walnuge
Field Notes Authored by 6.69 Field Notes	QA/QCed by





WIND I AITIII WATE	.11000	I IIAI ID AGGEG	DIVILIAL I OLIVI	The state of the s
Stantec				
Station # 19 - 2		Project Name	agara W	ind
Watercourse Name unknow		Project #1(00°	158269	
Photos June 20/12.		Field Staff J Vo	me, k. cl	auton_
		Time \(\scale \) : < <	7	
Weather conditions in previous 24 hrs		<u>Ahumid</u>		
GPS Coordinates (Zone) 17 E		79 N 4		Datum Nad 8.
Descriptive Location off of C	onc.	7 , tast of	- Mc Collur	n voaa
Water Quality \ -no wa	Her	•		
	На	Conductivit	v (uS/cm)	
Dissolved Oxygen (mg/L) Water Temperature (°C)	1 	Air Temperature (°C	30°04	·····
Time in situ measurements taken		,,		
Watercourse Dimensions & Morpholog	y			
Mean Watercourse Width(m)	•	Maximum Pool Dep	th(cm)
Mean Bankfull Width(m)		Mean Water Depth_		cm)
	% Poc		% Run	% Flat
Evidence of eroding banks, Comments on	i bank sta	ability		
Substrate (% cover)				
	ole	Sand	Silt	Muck
Boulder Grave	el	Clay	Marl	Detritus
In-water Cover				
Cover Types Present (circle): Unde	ercut Ban	ks Deen Pool	Watercress	Aquatic Veg
Overhanging Vegetation Woody Debr				riquatio vog
Riparian Zone	ممائمت ا			
Riparian Cover (% of watercourse shaded	, dominai	nt vegetation, mature	or early succession	onal)
Adjacent Land-Use	Tree	J. J. Martos	(m southing	(C)) Cyrig
forcet, farm	Jan	d		0+
Fish Habitat Potential				
Critical Habitat (spawning or nursery areas	s, ground	water upwellings)		
Migratory Obstructions (seasonal, perman	ent)			
Note any fish observations				

Waterbody Notes Other Habitat Notes, Incidental Wildlife Observations, etc. Field Notes QA/QCed by ______





Station # 4-5	Project Name Niagara Wind				
Watercourse Name unknown	Project # 160958269				
Photos Date June 20/12	Field Staff J. Veane, K. Clayton				
Date <u>June 20/12</u> .	Time 4:22 pm				
weather conditions in previous 24 hrs	8 humid.				
GPS Coordinates (Zone) 17T E 6166	40 N 476762 / Datum Nad 8=				
Descriptive Location off of Conc	+ west of part Dalliton				
Water Quality - no water					
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)				
Water Temperature (°C)	Air Temperature (°C)				
Time in situ measurements taken	7 iii Tomporature (O)				
The state of the s					
Watercourse Dimensions & Morphology					
Mean Watercourse Width(m)	Maximum Pool Depth(cm)				
Mean Bankfull Width 25-3 (m)	Mean Water Depth(cm)				
% Riffle% Poo	ol% Run% Flat				
Evidence of eroding banks, Comments on bank st	ability				
/					
Substrate (% cover)					
BedrockCobble	Sand 40 Silt Muck SO Clay Marl Detritus				
BoulderGravel	SO Clay Marl Detritus				
In-water Cover	PC				
Cover Types Present (circle): Undercut Bar					
Overhanging Vegetation Woody Debris					
Troody Dobins	Suidoi Otrici				
Riparian Zone					
Riparian Cover (% of watercourse shaded, domina					
829. Typha grasses ea	rly				
Adjacent Land Use	į				
tarm land					
Fish Habitat Potential					
Critical Habitat (spawning or nursery areas, ground	Iwater upwellings)				
Minusters Obstructions (account name and					
Migratory Obstructions (seasonal, permanent)					
Note any fish observations					
Note any list observations					
Waterbody Notes					
Natural Watercourse Trapezoidal Channel					
Surficial Drainage (i.e. furrows) Dugout Pon	d Dominated by Aquatic Veg Dry				
Other Hebitet Notes Insidental Wildlife Observe	ations at				
Other Habitat Notes, Incidental Wildlife Observa					
- on Sutherde of conc 4 channel is deeply					
incised teroard banks. On	in that of Coad it is				
reavily office Ku					
Field Notes Authored by K. Claufar Field Notes	QA/QCed by				
Field Notes	CANCIO BY				

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc





Station # 19-4	Project Name <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	agara Wir	nd			
Watercourse Name unknown	Project # 160950269 Field Staff Years, V clayton					
notos Field Staff J. Verne, V. claytan Time 4:3 em						
	Time	OVA				
Weather conditions in previous 24 hrs		*				
GPS Coordinates (Zone) 17T E 616	320 N 4	767608 D	atum Nad 8.			
Descriptive Location off of conc	4, west of M	c Collum R	790			
Water Quality						
Dissolved Oxygen (mg/L) ph	1 Conductivity	(μS/cm)				
Water Temperature (°C) Air Temperature (°C)						
Time in situ measurements taken						
Watercourse Dimensions & Morphology						
Mean Watercourse Width(m)	Maximum Pool Depth)(CI	m)			
Mean Bankfull Width (m)	Mean Water Depth	(CI	m)			
% Riffle%	Pool	_% Run	% Flat			
Evidence of eroding banks, Comments on bank	k stability					
Substrate (% cover)						
Bedrock Cobble	Sand	Silt	Muck			
Boulder Gravel	Clay	Marl	Detritus			
	7					
In-water Cover Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris			Aquatic Veg			
Riparian Zone Riparian Cover (% of watercourse shaded, dom			nal)			
Adjacent Land Use residential, farm	Y					
Fish Habitat Potential	or and a superior and the superior					
Critical Habitat (spawning or nursery areas, gro	undwater upweilings)					
Migratory Obstructions (seasonal, permanent)						
Note any fish observations						
Waterbody Notes Natural Watercourse Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F	nnel Grassed Sv Pond Dominated by	vale Buri v Aquatic Veg	ed Tile			
Other Habitat Notes, Incidental Wildlife Obse	ervations, etc					
Field Notes Authored by Kaylan Field N	Notes QA/QCed by					





Station # 9-5 Watercourse Name unknown Photos Date une 20/12. Weather conditions in provious 24 hrs.	Project Name Niagara Wind Project #_ 160950269 Field Staff D. Voene K. Clayton
Weather conditions in previous 24 hrs hot GPS Coordinates (Zone) 17 E 6 17 4 Descriptive Location	Time 4:46. 4 humid 76 N 4767658 Datum Nad 83
water duality	Conductivity (µS/cm) Air Temperature (°C) 32°C
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m)% Riffle% Pooleting banks, Comments on bank sta	
Substrate (% cover)BedrockCobble Boulder Gravel	Sand (O Silt Muck So Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris	nks Deep Pool Watercress Aquatic Veg R
Riparian Zone Riparian Cover (% of watercourse shaded, domina	nt vegetation, mature or early successional)
Adjacent Land Use	
Critical Habitat (spawning or nursery areas, ground	water upwellings)
Migratory Obstructions (seasonal, permanent)	ng, fraging, nurser,
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Ponce	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
green trogs online	Month Side of road there is an bond on South side it is pooled as ent of them becomes any soft into side channel.
Field Notes Authored by Caytan Field Notes (QA/QCed by

reachoso	re	RE	A	264	~
					è



Station # 20-	Proje	ct Name <u>Nia</u>	garal	vind	- 54446
Station #	Proje	ct # 110095	<i>8</i> 269		000
Photos		Staff J. Veen	e, k.clo	wton	carell
					LEA
Weather conditions in previous 24 hrs					
GPS Coordinates (Zone) 17T E	61800S	N 476			
Descriptive Location off o	F R-1	avidon	Rd Sai	thot	16. Kodo
Water Quality - no water					
Dissolved Oxygen (mg/L)	pH	Conductivity ((μS/cm)		***************************************
Water Temperature (°C)	Air T	emperature (°C) _	30		***************************************
Time in situ measurements taken					
Watercourse Dimensions & Morpholog	ју	,			
Mean Watercourse Width(m)	Maxi	mum Pool Depth_		_(cm)	
Mean Bankfull Width(m)	Mear	n Water Deptn	0/ D.:-	(cm)	0/ 51-4
% Riffle					
Evidence of eroding banks, Comments o	T Dank Stability				
Substrate (% cover)	1 ~	1 1			
Bedrock Cob Boulder Gra	ble	Sand <i>(_0</i>	Silt		Muck
BoulderGra	vel <u> </u>	Clay	<u>Marl</u>		Detritus
In-water Cover Cover Types Present (circle): Und Overhanging Vegetation Woody Deb				The same of the sa	tic Veg
Riparian Zone Riparian Cover (% of watercourse shade	d, dominant veg	etation, mature o	r early succes	ssional)	
Adjacent Land Use					
Fish Habitat Potential Critical Habitat (spawning or nursery area	ıs, groundwater	upwellings)			
Migratory Obstructions (seasonal, perma	nent)				
Note any fish observations					
Waterbody Notes Natural Watercourse Trapezoida Surficial Drainage (i.e. furrows) Du	Channel	_ Dominated by			ile
Other Habitat Notes, Incidental Wildlife	Observations	etc East s	ide has a	acless.	ed Channel
Taguatic veg, can't a	rive thrau	gh it on	the west	side.	thoir
is a sortion real the culter	t that is c	hannalized	havevert	he chan	inel
disappears of the farmer	nas been c	triving thran	ahit -1	ats of	typha
/ / 1 / -				through	a calledon.
Field Notes Authored by Cayton	Field Notes QA/QCe	d by		**	





Station # 20-2 Watercourse Name unknown Photos Date June 2//2 Weather conditions in previous 24 hrs GPS Coordinates (Zone) 17T E 6187 Descriptive Location off of Conc 4	Time 10:4	158269 no Kicla 7	atum Nad 83
Water Quality Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity Air Temperature (°C	y (μ\$/cm) 	
Watercourse Dimensions & Morphology Mean Watercourse Width	Maximum Pool Dept Mean Water Depth_ ol ability		m) m) % Flat
In-water Cover Cover Types Present (circle): Undercut Bank	SandSandSandSandSandSandSandSandSand_Sand	Marl	MuckDetritus Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, dominar Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds)	nt vegetation, mature		nal)
Migratory Obstructions (seasonal, permanent) Note any fish observations			
Waterbody Notes Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observat	Dominated by	valeBuri Aquatic Veg Sqth Sid a RFA, a uto though M	ed Tile Dry Le of Canc-4 apped by MNR
Field Notes Authored by Field Notes O	A/QCed by WF		

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc





Station #	Project Name <u>Niagara Wind</u>
Watercourse Name unknown	Project # 160958269
Photos ,	Field Staff J. Voene, & Clayton
Date	Time 3:3
Weather conditions in previous 24 hrs	N 4765865 Datum Nad 83
GPS Coordinates (Zone) 17T E 6177	vidson Road just south of Silver Rd
Descriptive Location Off of Part Da	JIGUAN ROADA, JUST S RATIN CH STID
Water Quality Dissolved Oxygen (mg/L) pH	8·19 Conductivity (μS/cm) 547
Water Temperature (°C) 24 25	Air Temperature (°C) 32°C
Time in situ measurements taken 3	30
Watercourse Dimensions & Morphology	
Mean Watercourse Width (m)	Maximum Pool Depth (cm)
Mean Bankfull Width (m)	Mean Water Depth O O (cm)
% Riffle% Position Evidence of eroding banks, Comments on banks	~ · · · · · · · · · · · · · · · · · · ·
Evidence of eroding banks, Comments on banks	stability 54200 1911
Substrate (% cover)	
Bedrock Cobble	Sand SO Silt Muck
Boulder Gravel	<u>40</u> Clay <u>Marl</u> Detritus
In-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris	anks Deep Pool Watercress Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature or early successional)
Adjacent Land Use	wheat
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou	ndwater unwellings)
Chilical Habitat (spawning of hursery areas, grou	nursen A feraging
Migratory Obstructions (seasonal, permanent)	,
Dermane	A TO THE RESERVE TO THE PARTY OF THE PARTY O
Note any fish observations Fish Co	ming to surface for air
Waterbody Notes Natural Watercourse Trapezoidal Chann	el Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Po	ond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obser	lots of ducknowled on East side of DDE
Field Notes Authored by K. Claydan Field No	tes QA/QCed by



Von-	REA	Z	M
IVOVI	1		

Station # $\propto 4^{-1}$		Project Name	agara WII	(0)
Watercourse Name unkna	<u> </u>	Project #1(009	50269	
Photos Date June 21/12		Project Hame 1009 Field Staff 1009	La Kiclar	Han
Date Oune 21/12				
Weather conditions in previous	24 hrs		3à°C+	
GPS Coordinates (Zone)	T E 61716	<u> </u>	<u> 16 4866 </u>	atum Nad 83
Descriptive Location off	of Yaugh	n ed A Por	+ Dawids	<u>nater</u> s
501+	<u> </u>			·······
Water Quality Dissolved Oxygen (mg/L) Water Temperature (90)	no wat	-C-V		
Dissolved Oxygen (mg/L)	nH	Conductivity	(uSlom)	
Dissolved Oxygen (mg/L) Water Temperature (°C) Time in city mass removes to be	Pi '	Air Temporature (°C)	(μο/σιι)	
Time in situ measurements take	en .	All reinbelature (C)	$-\mathcal{O}\mathcal{A}$	
Watercourse Dimensions & N		And the state of t		
Mean Watercourse Width	(m) /	Maximum Pool Depti	n(cr	n)
Mean Bankfull Width	· (m) /	Mean Water Depth	(cr	n)
% Riffle	% Poo		_% Run`	% Flat
Evidence of eroding banks, Cor	nments on bank sta	hilih.		
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel	Clav	Marl	Nack Detritus
	/			
In-water Cover	,			
Cover Types Present (circle):	Undercut Bank	s Deep Pool	Watercress (Aquatic Veq
Overhanging Vegetation W	oody Debris			
		_		
Riparian Zone	a a alacada at at at at		_	
Riparian Cover (% of watercours	se snaded, dominan	t vegetation, mature of	or early succession	al)
Adjacent Land Use		7		
Adjacent Land Ose	and read	intal		
	$\alpha \alpha$, $\alpha \alpha$	CYTTCL!		
Fish Habitat Potential				
Critical Habitat (spawning or nur	reery areas aroundy	rator unwallings)		
Constant (opawing or nar	sory areas, grounds	vater upweilings)		
Migratory Obstructions (seasona	al. permanent)			
	, p			
Note any fish observations	Was constituted by .			
Note any fish observations	Spengerated 9			
	dinascreed*			
Waterbody Notes	Stranger of 1			
Waterbody Notes Natural Watercourse Tra	apezoidal Channel _	Grassed Sw	rale Burie	ed Tile
Waterbody Notes Natural Watercourse Tra	apezoidal Channel _ Dugout Pond	Grassed Sw	rale Burie	ed Tile
Surficial Drainage (i.e. furrows)_	Dugout Pond	Dominated by	Aquatic Veg	
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)_ Other Habitat Notes, Incidenta	Dugout Pond_ I Wildlife Observat	Dominated by	Aquatic Veg	
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)_ Other Habitat Notes, Incidenta	Dugout Pond	Dominated by	Aquatic Veg	
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidenta	Dugout Pond I Wildlife Observati Apple but	Dominated by	Aquatic Veg	
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)_ Other Habitat Notes, Incidenta	Dugout Pond I Wildlife Observati Apple but	Dominated by	Aquatic Veg	
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidenta Channe A Channe The	Dugout Pond I Wildlife Observat Appel, but I dran 2000 A 24-1 Flav	Dominated by ons, etc.	Aquatic Veg	
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidenta	Dugout Pond I Wildlife Observati Apple but	Dominated by ons, etc.	Aquatic Veg	
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)_ Other Habitat Notes, Incidenta Channe A Part Dan Channe A Part Dan	Dugout Pond I Wildlife Observati A A A A A A A A A A A A A A A A A A A	Dominated by ions, etc. July Sindistrict Sinto A/QCed by	Aquatic Veg	Dry Dry a Cornidor





	11, 1200
Station # $23-$	Project Name Niagara Wind Project # 160950269
Watercourse Name unknown	Project # 160958269
Photos	rield Staff Color
Date June 21/12.	Time
Weather conditions in previous 24 hrs	ot thurnid
GPS Coordinates (Zone) 17 E (ol(a	0013 N 4764798 Datum Nad 83
Descriptive Location off of Vaughn	KODA 10814-0+24-1
no no	water
Water Quanty	
	I Conductivity (μS/cm) Air Temperature (°C)3 2°C
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	- no real channe
Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Watercourse Width(m) Mean Bankfull Width(m)	Mean Water Depth(cm)
% Riffle%	Pool% Run% Flat
Evidence of eroding banks, Comments on bank	stability
/	
Substrate (% cover)	
Bedrock Cobble	SandSiltMuck
BoulderGravel	Clay <u>Marl</u> Detritus
In-water Cover	Base Bask Watersteen Agustic Von
Cover Types Present (circle): Undercut I	Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, dom	ninant vegetation, mature or early successional)
100%, RCG, Ear	
Adjacent Land Use	
demonstrated by a grant	
Fish Habitat Potential	unduster unwellings)
Critical Habitat (spawning or nursery areas, gro	undwater upwenings)
Migratory Obstructions (seasonal, permanent)	
dv4	
Note any fish observations	
Waterbody Notes	
Natural Material Chan	nnel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout F	Pond Dominated by Aquatic Veg Dry
Sufficial Draffage (i.e. fullows) Dugout 1	Dominated by Aquatio veg Diff
Other Habitat Notes, Incidental Wildlife Obse	ervations, etc.
Red Canan grass vig	ht by road walittle channel
definition thather	on no change (Clom)
ee so	
Field Nation Authorized by K. C. A. Attico	lotes ON/OCod by ME



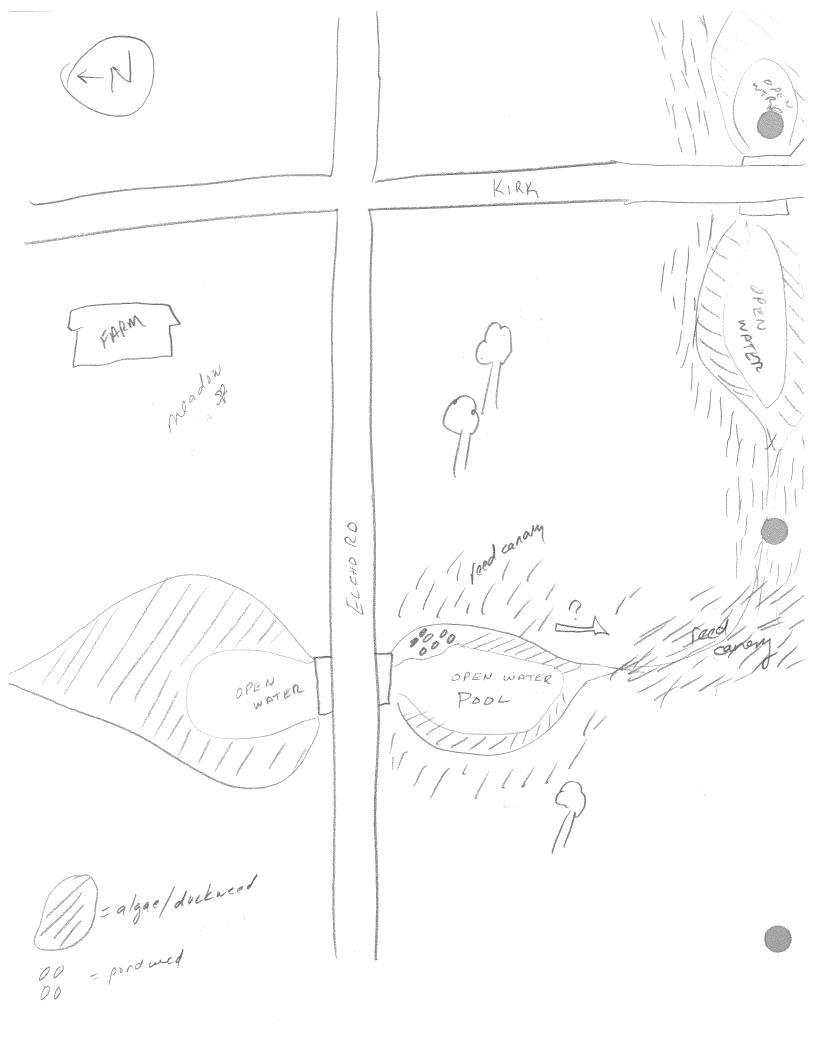
WIND FARM WATERBODY RAPID ASSESSMENT FORM, Non READ No side

Station #	Project Name Niagara Wind Project # 160950269 Field Staff Vere Clayton Time 19: 19 An unid 945 N 476588 Datum Nad 8
Water Quality Dissolved Oxygen (mg/L) 4.10 pH_ Water Temperature (°C) 23.82 Time in situ measurements taken 14.22	8.18 Conductivity (µS/cm) 674 Air Temperature (°C) 30 °C+
Watercourse Dimensions & Morphology Mean Watercourse Width	ool% Run% Flat
Substrate (% cover) BedrockCobble BoulderGravel	Sand Go Silt Muck So Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris Riparian Zone	anks Deep Pool Watercress Aquatic Veg Boulder Other agae
Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground potential)	ndwater upwellings)
Migratory Obstructions (seasonal, permanent) Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Poi	el Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observation	vations, etc. Sa. Nan eff - SD Walth ed Channel, aguatic utg.
Field Notes Authored by // Clayter Field Note	s QA/QCed by

REA



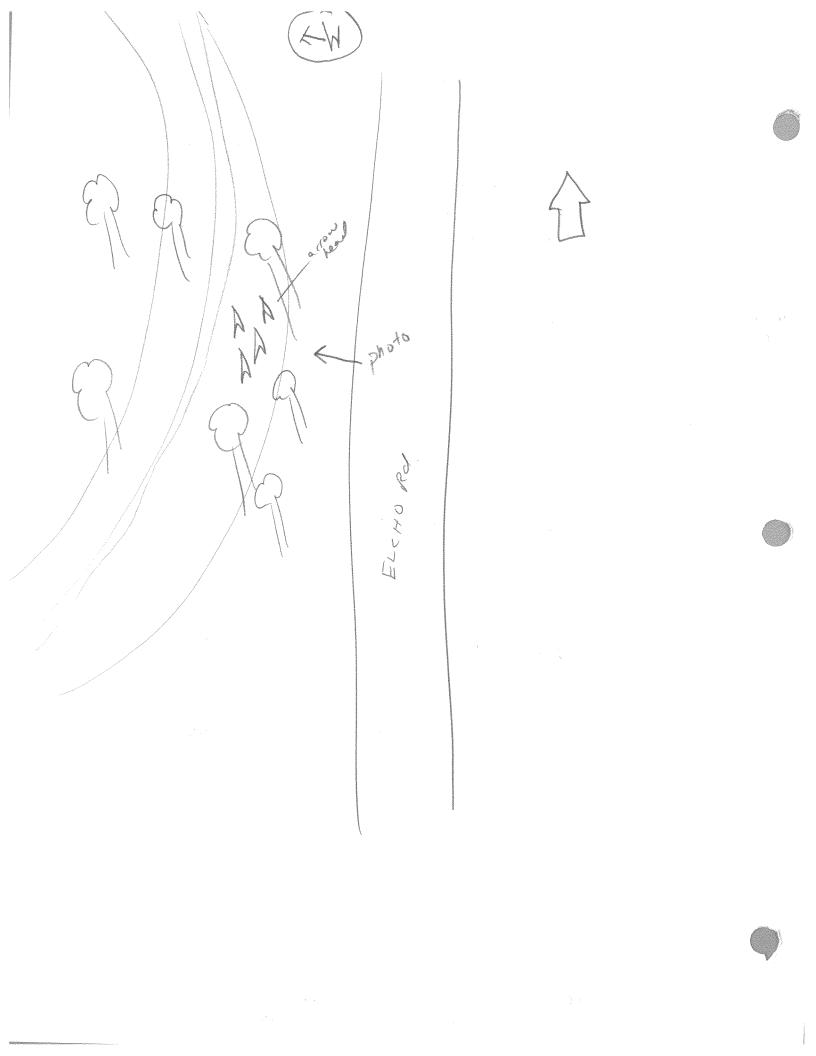
Station # 26-1	Project Name Niagara Wind
Watercourse Name Un Known	Project #_//00950269
	Field StaffME_MF
Photos See photo Log Date 2012 06 18	Time
Weather conditions in previous 24 hrs	(O(CCID
GPS Coordinates (Zone) 17 E 0617	-964 N 4763459 Datum NAO8:
Descriptive Location On Elcho Rd -	- 70 m east of Port Davidson Rd.
Water Quality	
Dissolved Oxygen (mg/L) 017 pH_	9 03 Conductivity (μS/cm) 436 Air Temperature (°C) 30°2
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken / 4:1)	
Watercourse Dimensions & Morphology	
Mean Watercourse Width / 5 (m)	Maximum Pool Depth <u>► 165</u> (¢m)
Mean Watercourse Width /5 (m) Mean Bankfull Width ~ 25 (m)	Mean Water Depth(cm)
% Riffle% Po	ool% Run% Flat
Evidence of eroding banks, Comments on bank s	tabilityobserved
Substrate (% cover)	
BedrockCobble	Sand 40 Silt 40 Muck 20 Clay Marl Detritus
Boulder Gravel	20 Clay Marl Detritus
Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris	
Riparian Zone Riparian Cover (% of watercourse shaded, domina	ant vegetation, mature or early successional)
Adjacent Land Use	
Faim buildings meadow fields.	
We do not have a second of the	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	dwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
14016 any listi observations	
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pone	Grassed Swale Buried Tile d Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	tions, etc. Jumping fish sp
·	
	,
Field Notes Authored by Field Notes	QA/QCed by







)ind
Datum NAS
1
SOUTH
<u>(cm)</u>
(cm)
%
Muck
Detri
essional)
,
~(U5)
A. ~
acuss
·
Buried Tile_ g/? Dry_
Buried Tile_ g/? Dry_
Buried Tile_ g/? Dry_

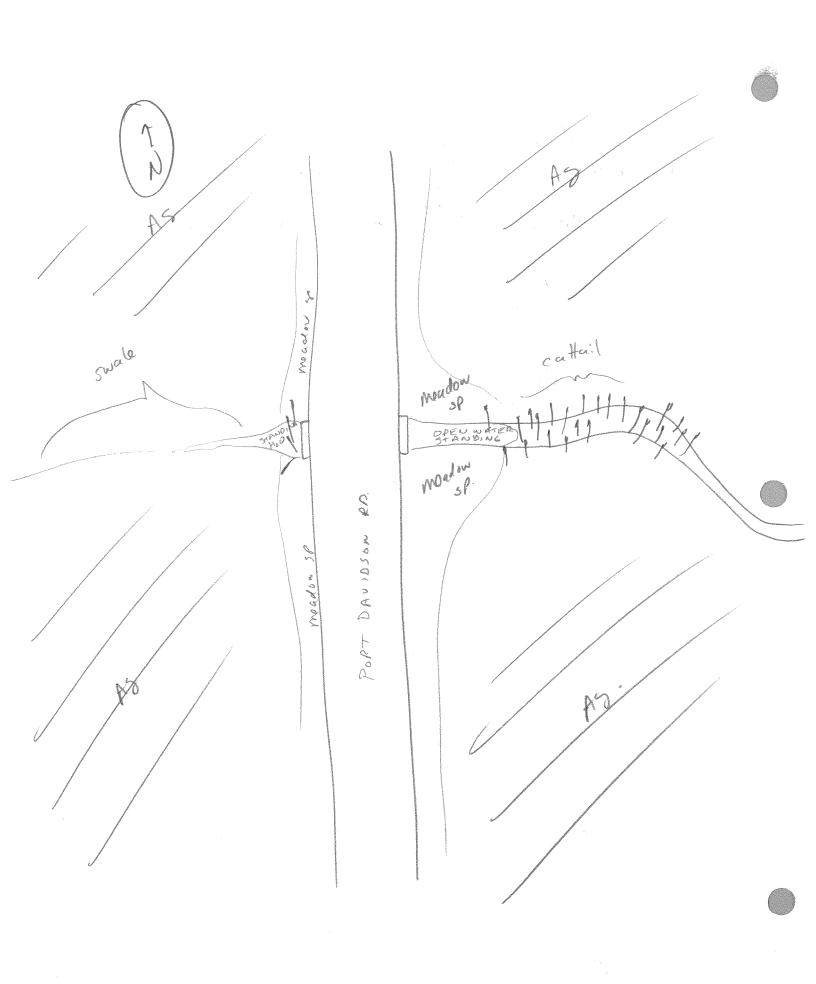




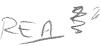


WIND FARM WATERBODY RAPID ASSESSMENT FORM
REA dis but partial REA vis thear culvert only

Station # 28-1		Project Nam	e Niago	a ra Li)ind	
Watercourse Name on Know	n	Project #	1100950	1269		
Photos See photo log. Date 2012 06 19		Field Staff	MEM)F		
Date 2012 06 19		IIMA AG	- 'A 11			
Weather conditions in previous 2	4 hrs <u>wanor</u>	oreci D				
Weather conditions in previous 2. GPS Coordinates (Zone)	E 0617	877	N 476	, 2295	Datur	n NDA-D 9
Descriptive Location On Poch	Davidson R	d ~ 400 N	, north o	P ZUN	nslein	N.
Water Quality						
Dissolved Oxygen (mg/L) 4.49 Water Temperature (°C) 23.82	nH =	78 Con	ductivity (C/	nna) / 4.44	·	
Water Temperature (°C) 23.97	P'	Air Temperat	uro (°C)	лп) <u>тос</u>))	·····
Time in situ measurements taken		Air Temperat	uie (°C)			
Watercourse Dimensions & Mon	rphology					
Mean Watercourse Width 20	(m)	Maximum Po	ol Depth	5.0	(cm)	
Mean Watercourse Width 2.0 Mean Bankfull Width 2.5	(m) [.]	Mean Water I	Depth	7.0	(cm)	
	55 % P00	1	% D	l im		% Fla
Evidence of eroding banks, Comm	nents on bank sta	bility None	- DOSKIVE	<u>人</u> .		
Substrate (% cover)						
Bedrock	Cobble	20 Sand	40	Silt "	30	Muck
Boulder	Gravel	10 Clay		Om Marl	26/	Detritus
Riparian Zone Riparian Cover (% of watercourse	shaded, dominan	t vegetation, m	ature or early	/ successi	ional)	
Adjacent Land Use						
Fish Habitat Potential Critical Habitat (spawning or nurser	y areas, groundw	rater upwellings	s)			
Migratory Obstructions (seasonal, p	permanent)					
ary atimes	,					
Note any fish observations	V -					
Waterbody Notes /						····
	zoidal Chamal	•			7	
Surficial Drainage (i.e. furrows)	zoidal Channel _ Dugout Pond_	Grass Domina	ed Swale\ ted by Aquati	Bu c Veg	ried Tile	
Other Habitat Notes, Incidental W						-
		T ,	/ 0			
	·			<u> </u>		
IWW/						
eld Notes Authored by	Field Notes QA	QCed by	LE			







WIND FARM WATERBODY RAPID ASSESSMENT FORM Road side accessionly. Project Name Niagara Wind Station #

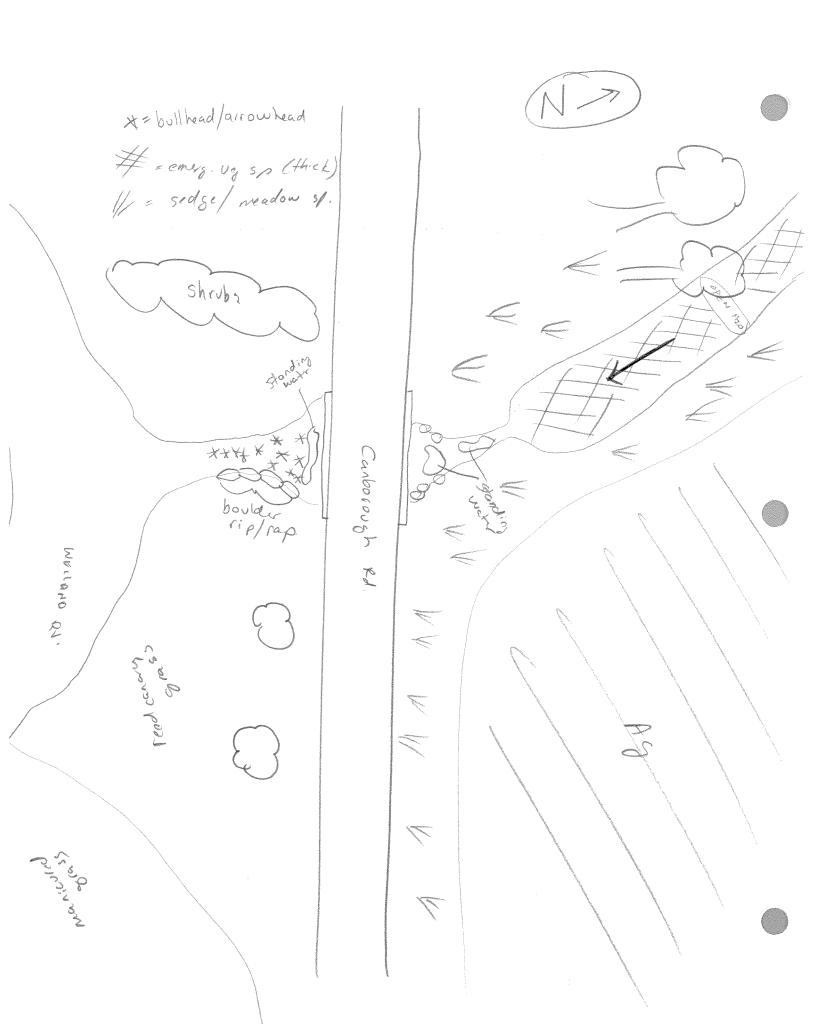
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Water Quality Water Outer Dimensions & Morphology Mean Watercourse Width % Riffle Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Boulder Gravel In-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetable) Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the situation of the seasonal, permanent) Migratory Obstructions (seasonal, permanent) Note any fish observations	Conductive mperature (°	city (μS/c	m) Ly Ly lin U+5.	Datur GADOS (cm) (cm)	002
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width % Riffle % Pool Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Bedrock Gravel In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Adjacent Land Use Migratory Obstructions (seasonal, permanent) Migratory Obstructions (seasonal, permanent)	Conductive mperature (° mum Pool De Water Depth	pth β	m) Ly Ly Ly Ly Silt	_(cm) _(cm)	002
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width Mean Bankfull Width Mean Bankfull Width Width Substrate (% cover) Bedrock Boulder Boulder Gravel In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater up and the stability of the stability	Conductive mperature (conductive mperature (conductive mperature)	pth β	m) Ly Ly Ly Ly Silt	_(cm) _(cm)	002
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) Mean Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Cobble Boulder Gravel Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation to the comment of	Conductive mperature (conductive mperature mperature (conductive mperature m	pth β	m) Ly Ly Ly Ly Silt	_(cm) _(cm)	<u> </u>
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean % Riffle % Pool Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Gravel Boulder Gravel In-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetalian cover (% of watercourse shaded).	Conductivemperature (° num Pool De Water Depth	pth β - % Ru	m) Ly in J+5	_(cm) _(cm)	
Dissolved Oxygen (mg/L) pH Water Temperature (°C) Air T Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean	num Pool De Water Depth	pth Ru	Silt_	_(cm)	9
Water Temperature (°C) Air T Time in situ measurements taken	num Pool De Water Depth	pth Ru	Silt_	_(cm)	
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Mean Bankfull Width (m) Mean % Riffle % Pool Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Cobble Boulder Gravel In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Cover (% of watercourse shaded, dominant vegetation) Wigratory Obstructions (seasonal, permanent) Migratory Obstructions (seasonal, permanent) Note any fish observations	num Pool De Water Depth	pth B	in	_(cm)	%
Mean Watercourse Width (m) Mean Bankfull Width (m) Mean Bankfull Width (m) Mean Mean Mean Mean Mean Mean Mean Mean	Water Depth	MRUNAUC	in	_(cm)	
Mean Watercourse Width (m) Mean Bankfull Width (m) Mean Bankfull Width (m) Mean Mean Mean Mean Mean Mean Mean Mean	Water Depth	MRUNAUC	in	_(cm)	9
Mean Bankfull Width	Water Depth	MRUNAUC	in	_(cm)	9
Substrate (% cover) Bedrock Cobble Boulder Gravel In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Land Use Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the company of the co	Sand	% Ru	in (∪∤ s _Silt		9
Substrate (% cover)	Sand	unduc	_Silt_	40	7
Bedrock Gravel Gravel Boulder Gravel Gravel Gravel In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Cover (% of watercourse shaded) (% of watercourse	_Sand	3 <i>0</i>		40	
Bedrock Gravel Gravel Boulder Gravel Gravel Gravel In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Cover (% of watercourse shaded) (% of watercourse	_Sand Clay	30		40	
In-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Land Use Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the company of	_Sand Clay	<i>50</i>		40	
In-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Common	Clay		Man		_Mu
Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Bould Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation Communication Communi		•	IVIGII		_Det
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vege Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the company) Migratory Obstructions (seasonal, permanent)					•
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vege Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the company) Migratory Obstructions (seasonal, permanent)	Deen Pool	Water	oroco	A	_4!_ \
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vege Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the company) Migratory Obstructions (seasonal, permanent) Note any fish observations	or Othe		U 699	Aqua	auc v
Riparian Cover (% of watercourse shaded, dominant veget Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the control of the contro	ou lo	'			
Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the control of the co					
Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the control of the co	ation, mature	or early	success	ional)	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the control of the contro					
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater under the control of the contro					
Critical Habitat (spawning or nursery areas, groundwater under the number of the numbe					
Critical Habitat (spawning or nursery areas, groundwater under the number of the numbe					
Migratory Obstructions (seasonal, permanent) Any Note any fish observations	wallaas)				
Migratory Obstructions (seasonal, permanent)	weilings)	•			
Waterbody Notes					
·························/			/		
Natural Watercourse Trapezoidal Channel		vale 🗸		uried Til	
Surficial Drainage (i.e. furrows) Dugout Pond		Maio A	Bu		
	Grassed St	V Aquatic	-)ry <u>/</u>
Other Habitat Notes, Incidental Wildlife Observations, e	Grassed Son Dominated by	y Aquatio			
The state of the s	Grassed Son Dominated by	y Aquatio			
	Grassed Son Dominated by	y Aquatio			
	Grassed Son Dominated by	y Aquatio			
	Grassed Son Dominated by	y Aquatio			
ield Notes Authored by Field Notes QA/QCed b	Grassed Son Dominated by	y Aquatio			

No access, Rd side vicou





Field Staff Time O 3 4 5 Weather conditions in previous 24 hrs Marie Post Post Pesent (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Watercress Pover Types Present (circle): Undercut Banks Deep Pool Water Pove	<u> </u>
GPS Coordinates (Zone) TE Dod O75 N 476 (297 Dat Descriptive Location On Canbacough Rd Name and A Kind Rd	
Dissolved Oxygen (mg/L) pH Conductivity (µS/cm) Water Temperature (°C) Air Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth 2.0 (cm) Mean Bankfull Width 6.0 (m) Mean Water Depth 9.00 (cm) % Riffle 100 % Pool Evidence of eroding banks, Comments on bank stability Manager Panks 100 (cm) Bedrock 20 Cobble Sand 30 Silt 30 Boulder Gravel 20 Clay Marl In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successiona (circle): (um N M
Water Jemperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm) % Riffle 100 % Pool Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock 20 Cobble Sand 30 Silt 30 Boulder Gravel 20 Clay Marl In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover Marks (in mature in mature of early successional Cover Mature (in mature of early successional Cover Mature (in mature of early successional Cover Mature (in mature of early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded, dominant vegetation, mature or early successional Cover (% of watercourse shaded) Cover (% of wat	
Watercourse Dimensions & Morphology Mean Watercourse Width	
Watercourse Dimensions & Morphology Mean Watercourse Width 36 (m) Maximum Pool Depth 0.20 (cm) Mean Bankfull Width 60 (m) Mean Water Depth 0.10 (cm) % Riffle 100 % Pool % Run Evidence of eroding banks, Comments on bank stability hilds Substrate (% cover) Bedrock 20 Cobble Sand 30 Silt 30 Boulder Gravel 20 Clay Marl In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional 10 / mature / in mature /	
Mean Watercourse Width	
Mean Bankfull Width 6 (m) Mean Water Depth 7 (cm % Riffle 100 % Pool % Run Evidence of eroding banks, Comments on bank stability Minor variety banks of bank	
Substrate (% cover) Substrate (% cover) Bedrock 20 Cobble Sand 30 Silt 30 Boulder Gravel 20 Clay Mari In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercess Average Cover Types Present (circle): Undercut Banks Deep Pool Watercess Average Cover Types Present (circle): Undercut Banks Deep Pool Watercess Average Cover Types Present (circle): Undercut Banks Deep Pool Watercess Average Cover Types Cover Types Average Cover Types Cover T	
Evidence of eroding banks, Comments on bank stability hilds hilds	
Substrate (% cover) Bedrock 20 Cobble Sand 30 Silt 30 Boulder Gravel 20 Clay Marl In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress According Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional Color Market In mature for early successional Color Mature In mature f	%
Bedrock 20 Cobble Sand 30 Silt 30 Boulder Gravel Z0 Clay Marl In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Overhanging Vegetation Woody Debris Boulder Other	0 6
Boulder Gravel Zo Clay Mari	
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Acoverhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercourse shaded, dominant vegetation, mature or early successional Modern Cover (% of watercou	Mud Deta
Cover Types Present (circle): Undercut Banks Deep Pool Watercress Action Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional Company of the State	
Adjacent Land Use Tish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried	
Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried	
Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried	
Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried	
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried	
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried	
Natural Watercourse / Trapezoidal Channel Grassed Swale Buried	
Natural Watercourse Trapezoidal Channel Grassed Swale Buried	
Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg. 🗸	Tile
Sufficial Diamage (i.e. luttows) Dugout Folid Dominated by Aduatic Veg	Dry_
Other Habitat Notes, Incidental Wildlife Observations, etc.	
Song bilds	





Could not properly assess as area is off Row Row = Non REA



Sta	n	te	C

Photos See photo log Date June 20/12.		Project Name Nice Project #	58269	
Weather conditions in previous 24 GPS Coordinates (Zone) 171 Descriptive Location On Color	- E 06	22345 N 4	761279 D	atum Na
Water Quality Dissolved Oxygen (mg/L)	pH_		(μS/cm)	
Water Temperature (°C) Time in situ measurements taken	and the same of th	Air Temperature (°C)		
Watercourse Dimensions & Mo	rphology			
Mean Watercourse Width	(m)	Maximum Pool Depth		m)
Mean Bankfull Width	(m) % F	Mean Water Depth	% Ron	m) %
Evidence of eroding banks, Comm				
Substrate (% cover)				
Bedrock		Sand	Silt	Muc
Boulder	Gravel	Clay	Marl	Detr
Cover Types Present (circle): Overhanging Vegetation Woo			Watercress	Aquatic V
	ody Debris	Boulder Other_		
Overhanging Vegetation Woo	ody Debris	Boulder Other_		
Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use	ody Debris	Boulder Other_		
Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential	shaded, domi	Boulder Other_nant vegetation, mature		
Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use	shaded, domi	Boulder Other_nant vegetation, mature		
Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential	shaded, domi	Boulder Other_nant vegetation, mature		
Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse	shaded, domi ery areas, groupermanent)	Boulder Other_nant vegetation, mature		
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal,	shaded, domi ery areas, groupermanent)	Boulder Other_nant vegetation, mature		
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Note any fish observations Waterbody Notes	shaded, domi ery areas, grou permanent)	nant vegetation, mature of the details of the detai	or early succession	nal)
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Note any fish observations Waterbody Notes Natural Watercourse Trap	ery areas, groupermanent)	nant vegetation, mature of mant vegetation, mature of ma	or early succession	nal)
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Note any fish observations Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows)	ery areas, groupermanent) Dezoidal Chann Dugout Po	nant vegetation, mature of mant vegetation, mature of ma	vale Bur	nal) ried Tile Dry_
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Note any fish observations Waterbody Notes Natural Watercourse Trap	ery areas, groupermanent) Dezoidal Chann Dugout Po	nant vegetation, mature of mant vegetation, mature of ma	vale Bur	nal) ried Tile Dry_
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Note any fish observations Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows)	ery areas, groupermanent) Dezoidal Chann Dugout Po	nant vegetation, mature of mant vegetation, mature of ma	vale Bur	ried Tile





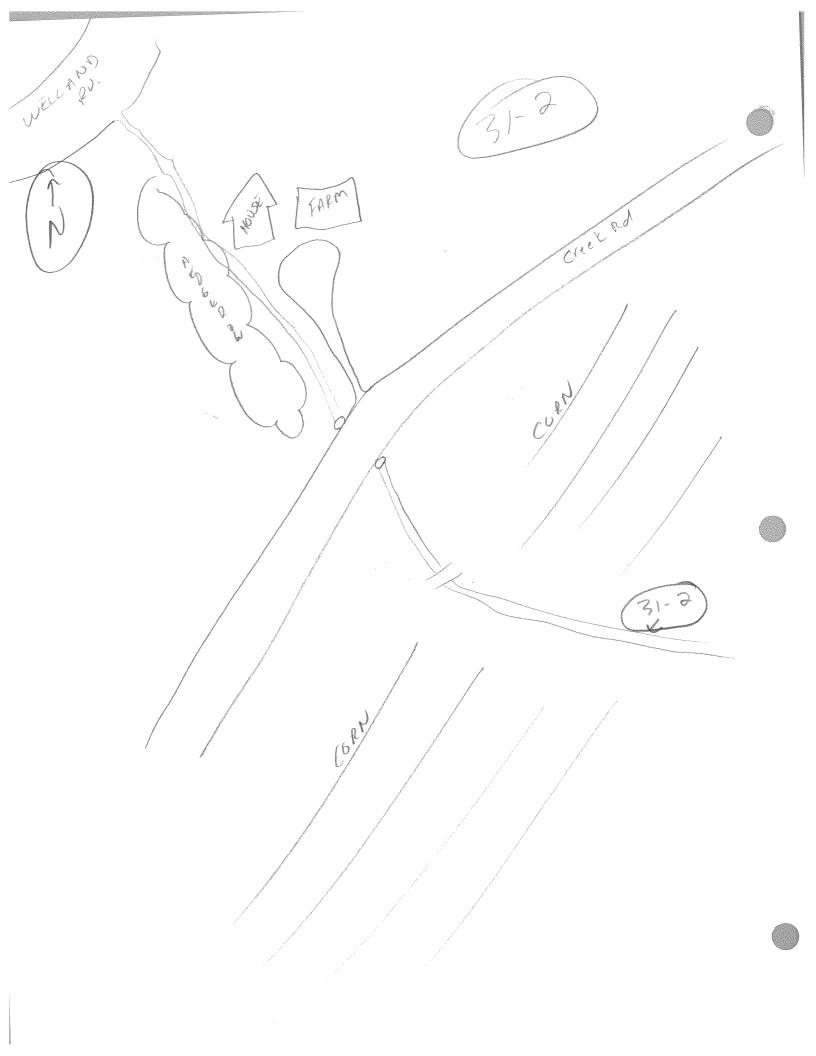
Field Notes Authored by _____

WIND FARM WATERBODY RAPID ASSESSMENT FORM

REA	
Dey	
1 1 01	

Stantec	
Staintet	- defined channel 0/5+ Project Name Niagara Wind
Station #	Project Name N a car a la) in ch
Watercourse Name unknown	
Photos Sen photo 106	Field Staff MEMP
Date June 21/12.	Time 10° 11.0
Weather conditions in previous 24 hrs	Na cipilation
GPS Coordinates (Zone)	22462 N 4761306 Datum Nad 8
Property On Creek Rd ~	- 2.4 km east of Krik Rd on Hardy
Water Quality	
Dissolved Oxygen (mg/L)	pH Conductivity (μS/cm)
(Vater / emperature (°C)	Air Temperature (°C)
ime in situ measurements taken	/ iii comperature (C)
Watercourse Dimensions & Morphology	
Mean Watercourse Width 0.25 (m)	
Mean Bankfull Width 20 (m)	Mean Water Depth (cm)
% Riffle	% Pool% Run % Fla
Evidence of eroding banks, Comments on ba	nk stability some undercut banks + scour
Substrate (% cover)	
BedrockCobble	
BoulderGravel	Sand 30 Silt 30 Muck 30 Clay Marl Detritus
-water Cover	Detilius
	t Banks Deep Pool Watercress Aquatic Veg
oral rypod resent (chele) Ondercu	t Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Overhanging Vegetation Woody Debris	Section 2 Sectio
Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do	Boulder Other
Riparian Cover (% of watercourse shaded, do	Section 2 Sectio
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% = d/5 + 2% = 0/5 matrice to discount Land Use	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% - d/5 + 2% - v/5 - matrice to disparent Land Use	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% = d/5 + 2% = 0/5 matrice to Adjacent Land Use Tish Habitat Potential	minant vegetation, mature or early successional) mes + shrups d 5 reed canary 6)5.
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% = 415 + 2% = 115 Adjacent Land Use Adjacent	minant vegetation, mature or early successional) mes + shrubs d s reed conseq b) 5.
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% = 45 + 2% = 15 + 15 + 15 + 15 + 15 + 15 + 15 + 15	minant vegetation, mature or early successional) mes + shrups of 5 reed canary 1/5. oundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% 20% 20% 20% 20% 20% 20% 20% 20% 20% 2	minant vegetation, mature or early successional) mes + shrubs d s reed canary w s. oundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% = d 5 + 2% = 1/2	minant vegetation, mature or early successional) mes + shrups d s reed canary 6)5. oundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% 2 do 4 2% 20% 30% 20% 20% 20% 20% 20% 20% 20% 20% 20% 2	minant vegetation, mature or early successional) mes + shrups of 5 reed canary b.
ish Habitat Potential ritical Habitat (spawning or nursery areas, gradingratory Obstructions (seasonal, permanent)	minant vegetation, mature or early successional) mes + shrubs d s reed canary w/s. oundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% 2 db 4 2% 20% 20% 20% 20% 20% 20% 20% 20% 20%	minant vegetation, mature or early successional) nes + shrups d s reed canary w)s. oundwater upwellings)
iparian Zone iparian Cover (% of watercourse shaded, do 30% 20% 20% 20% 20% 20% 20% 20% 20% 20% 2	minant vegetation, mature or early successional) mes + shrups of s reed canary 1/5. oundwater upwellings) Times Grassed Swale Buried Tile
ish Habitat Potential ritical Habitat (spawning or nursery areas, gradingratory Obstructions (seasonal, permanent) ote any fish observations aterbody Notes Trapezoidal Characterists Woody Debris	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% 2 db 4 2% 20% 20% 20% 20% 20% 20% 20% 20% 20%	minant vegetation, mature or early successional) mes + shrups d s reed canage b) oundwater upwellings) hnel Grassed Swale Buried Tile Pond Dominated by Aquatic Veg Dry

Field Notes QA/QCed by ______

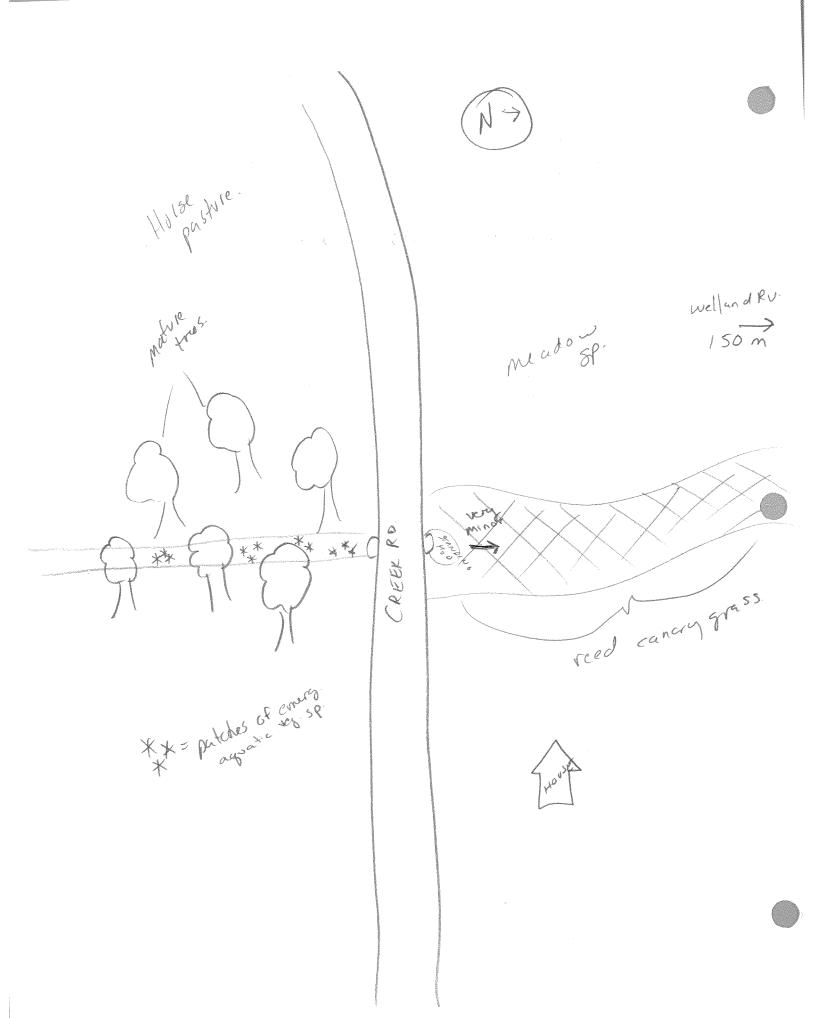




REA

STANDING WATER ONLY STAGE

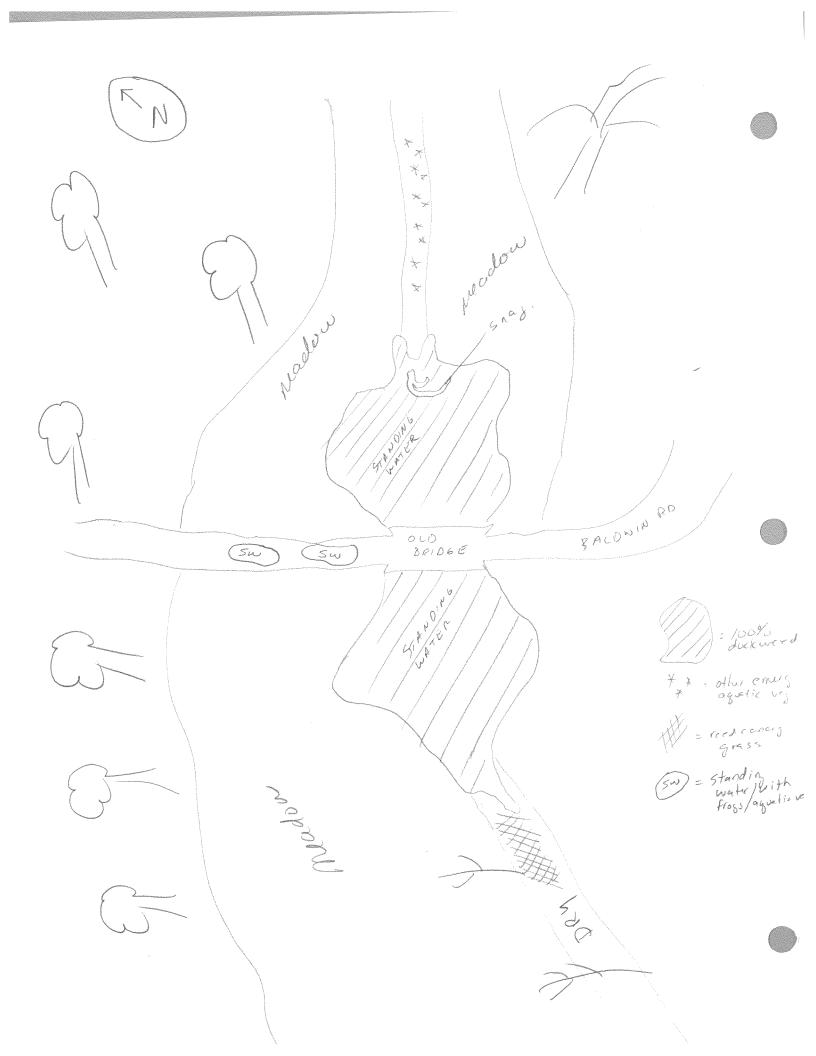
Water Course Name Photos Sec 10 20 20 20 20 20 20 20 20 20 20 20 20 20	Station # 3d - \				
Photos Service to the			Project Name	Niagara	Wind
Field Staff			Project # //	095026	29
Weather conditions in previous 24 hrs Weather conditions in previous 24 hrs GPS Coordinates (Zone) Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width Mean Bankfull Width Mean Water Depth Water Commensions & Morphology Mean Watercourse Width Mean Water Depth Water Cover Watercourse Width Mean Water Depth Water Cover Water Cover Bedrock Gravel Gravel Cobble Boulder Gravel In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic V Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Zone Riparian Cover Soft Manna Soft Manna Migratory Obstructions (seasonal, permanent) Waterbody Notes Vaterbody Notes Vaterbody Notes Vaterbody Notes Vaterbody Notes Vater Habitat Notes, Incidental Wildlife Observations, etc.			Field Staff	MEINE	
GPS Coordinates (Zone) Descriptive Location Creat R 250 m usest of Welland part Rd Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width 12 (m) Mean Bankfull Width 25 (m) Mean Water Depth 2 (cm) Riffle 10 % Pool		19			
Descriptive Location	vveather conditions in previous	24 hrs	nul pricip		
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width 12 (m) Mean Bankfull Width 25 (m) Mean Bankfull Width 25 (m) Mean Water Depth 2 (cm) Mean Bankfull Width 25 (m) Mean Water Depth 5 (cm) Mean Bankfull Width 25 (m) Mean Water Depth 6 (cm) Substrate (% cover) Substrate (% cover) Bedrock Cobble 7 Sand 30 Silt 40 Muc Boulder Gravel 20 Clay Marl Det In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic V Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Solve manufaction (seasonal, permanent) More any fish observations Trapezoidal Channel Opminated by Aquatic Veg Dry Waterbody Notes Trapezoidal Channel Dominated by Aquatic Veg Dry Wither Habitat Notes, Incidental Wildlife Observations, etc.	GPS Coordinates (Zone) 13	T E 06	$\alpha \alpha \beta \beta \alpha \beta \beta \beta \gamma $	N 42/100	n Detroit
Dissolved Oxygen (mg/L) Water Temperature (°C) Water Temperature (°C) Air Temperature (°C) Maculary Macular	Descriptive Location	seek Rd ~		the second secon	
Watercourse Dimensions & Morphology Mean Watercourse Width 12 (m) Maximum Pool Depth 5 (cm) Mean Water Depth 12 (m) Mean Water Depth 5 (cm) % Riffle 10 % Pool 7 % Run % Riffle 10 % Pool 8 % Run % Riffle 10 % Pool 8 % Run % Riffle 10 % Pool 9 % Run % Riparlan Cover (% cover) Bedrock Cobble 10 Sand 30 Silt 40 Muc Gravel 20 Clay Mari Detr In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Voverhanging Vegetation Woody Debris Boulder Other Riparlan Zone Riparlan Zone Riparlan Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Soft Maril 10 % Pool 10 % Represent (a fact of the pool 10 % Re	Dissolved Oxygen (mg/L) Water Temperature (°C)			ctivity (μS/cm) _	
Mean Watercourse Width 12 (m) Mean Water Depth 2 (cm) Mean Bankfull Width 25 (m) Mean Water Depth 2 (cm) % Riffle 100 % Pool Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Cobble 10 Sand 30 Silt 40 Much Debt Mark Debt	Time in situ measurements take	ən	Tomperatur	3(0)	
Mean Watercourse Width 12 (m) Mean Water Depth 2 (cm) Mean Bankfull Width 25 (m) Mean Water Depth 2 (cm) % Riffle 100 % Pool Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Cobble 10 Sand 30 Silt 40 Much Debt Mark Debt	Watercourse Dimensions & M	lorphology			
Mean Bankfull Width 2 (m) Mean Water Depth 2 (cm) % Riffle 2 (m) Mean Water Depth 2 (cm) % Riffle 2 (m) Mean Water Depth 2 (cm) % Riffle 2 (m) Mean Water Depth 2 (cm) % Riffle 2 (m) % Pool	Moon Malakanana 1441 tt		Maximum Deal		
**Riffle	Mean Bankfull Width 25	· /	Maar W.A. D	Depth5_	(cm)
Substrate (% cover) Bedrock Gravel Gravel Jo Sand Jo Silt Ho Muc Gravel Jo Clay Marl Detr In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic V Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Solve Marl Detr Adjacent Land Use Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Trapezoidal Channel Grassed Swale Waterbody Notes Latural Watercourse Latural Watercourse Journal Observations Trapezoidal Channel Dominated by Aquatic Veg Dry Wher Habitat Notes, Incidental Wildlife Observations, etc.		· /	mean water De		(cm)
Substrate (% cover)	Evidence of eroding banks Con	nmonto en had		% Run	%
Bedrock Cobble / D Sand 30 Silt 40 Muc Boulder Gravel 20 Clay Marl Detroit In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Voverhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Solve manufacture of the successional of th		mments on bank	stability	observed	
Boulder Gravel 20 Clay Marl Det In-water Cover In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Voverhanging Vegetation Woody Debris Boulder Other RIparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Wote any fish observations Vaterbody Notes Latural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Substrate (% cover)				
Boulder Gravel Zo Clay Marl Detail	Bedrock	Cobble	/D Sand	~ ~ ~	
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic V Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Solo manual of location of the shaded of the sh	Boulder		Sanu		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Naterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Cover Types Present (circle): Overhanging Vegetation Wo	oody Debris	Boulder O	ther	Aquatic V
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Vatural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Buried Tile Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercourse Solve manda @ 1/2 \ > \ >	oody Debris	Boulder O	ther	Aquatic V
Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Vaterbody Notes Vaterbody Notes	Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercourse Solo manda @ vis lo Adjacent Land Use	e shaded, domin	Boulder O	ther	Aquatic V
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Maried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc	Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercourse 50% manual @ 1/5 10. Adjacent Land Use	e shaded, domin	Boulder O	ther	Aquatic V
Other Habitat Notes, Incidental Wildlife Observations, etc	Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Output South	e shaded, doming control of the cont	Boulder On material of the second sec	ther_ ure or early succ	Aquatic V
Other Habitat Notes, Incidental Wildlife Observations, etc	Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Output State S	e shaded, domin cation of the ery areas, ground, permanent)	Boulder On material states of the state of t	ure or early succ	Aquatic V
	Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Output State S	e shaded, domin cation of the ery areas, ground, permanent)	Boulder On material states of the state of t	ure or early succ	Aquatic V
	Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercourse Solve manual of the course Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Vaterbody Notes Latural Watercourse Trap Furficial Drainage (i.e. furrows)	e shaded, domine cation of the	Boulder On material Crassed Dominated	Swale MA	Aquatic V essional) Buried Tile Dry
eld Notes Authored by MY	Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercourse Solve manual of the course Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Vaterbody Notes Latural Watercourse Trap Furficial Drainage (i.e. furrows)	e shaded, domine cation of the	Boulder On material Crassed Dominated	Swale MA	Aquatic V essional) Buried Tile Dry
ald Notes Authored by MY	Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercourse Solve manual of the course Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Vaterbody Notes Latural Watercourse Trap Furficial Drainage (i.e. furrows)	e shaded, domine cation of the	Boulder On material Crassed Dominated	Swale MA	Aquatic V essional) Buried Tile Dry
eld Notes Authored by	Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercourse Solve manual of the course Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Vaterbody Notes Latural Watercourse Trap Furficial Drainage (i.e. furrows)	e shaded, domine cation of the	Boulder On material Crassed Dominated	Swale MA	Aquatic V essional) Buried Tile Dry
Hd Notes Authored by	Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercourse Solve manual of the course Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Vaterbody Notes Latural Watercourse Trap Furficial Drainage (i.e. furrows)	e shaded, domine cation of the	Boulder On material Crassed Dominated	Swale MA	Aquatic V essional) Buried Tile Dry
	Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercourse Solve manual of the course Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Migratory Obstructions (seasonal, Vaterbody Notes Latural Watercourse Trap Furficial Drainage (i.e. furrows)	e shaded, domine cation of the	Boulder On material Crassed Dominated	Swale MA	Aquatic V essional) Buried Tile Dry



REA



Station #		Project Name <u>Niago</u>	ura Wina	1
Watercourse Name unknown		Project # <u>1160958</u> 2	169	
Photos See photo log.		Field Staffme, m	F	
Date June 20/12.		Time <u>09 : 10</u>		
Weather conditions in previous 24				
GPS Coordinates (Zone) 17		7 N 4762	726 Datu	<u>m Nad</u> 8
Descriptive Location On un ma	THE NOW (OR O	E Baldwin ~ 800,	<u> </u>	
Water Quality				
Dissolved Oxygen (mg/L) 2.40		<u>}</u> Conductivity (μS/c	m)401	
Water Temperature (°C)23.14	<u></u>	Air Temperature (°C)	2902	
Time in situ measurements taken_	09:15			
Watercourse Dimensions & Mor Mean Watercourse Width 20		And the second second second		
Mean Bankfull Width 3.5		Maximum Pool Depth ~ /s	<u>, O . O (cm)</u>	
% Riffle		Mean Water Depth		0/ 5 1 1
Evidence of eroding banks, Comm	ents on bank stabi	lity Manar Scoul ale	un	% Flat
Substrate (% cover)	Ochble	• • • • •		
Bedrock Boulder	Cobble Gravel	Sand <i>SO</i>	Silt <i>50</i> Marl	Muck Detritus
Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse solutions and large descriptions of the solutions	shaded, dominant	oulder Othervegetation, mature or early		
Adjacent Land Use	**			
\$				
Fish Habitat Potential Critical Habitat (spawning or nurser	v areas aroundws	ter upwellings)		
foray, spawn, hursery	y aroas, groundwa	ter apwenings)		
Migratory Obstructions (seasonal, plack of flows / water	permanent)			
Note any fish observations Many	Ed. Corchi	01 0.000 -11	1 1 1 E A	
water in stream VIS of	9/51. 4 Ca	p curasses	nt bridg. M	Jo
Waterbody Notes /				
Natural Watercourse Trape	zoidal Channel	Grassed Swale	Buriod	Tilo
Surficial Drainage (i.e. furrows)	Dugout Pond	Dominated by Aqua	Buried tic Vea	Dry V
Other Habitat Notes Incidental W	lildlifa Obaamiatia	///a/cc @ /A	_	<i></i>
Other Habitat Notes, Incidental W	DALLA COVO F	olding air	11dg 0119.	
Man gicen frogs, lappord	Frogs. 0	, 0		
Field Notes Authored by	Field Notes QA/	QCed by		



Landowner has possibly removed colvert which has consed old stream to pool east of potential collector rable. Pool is being used by cows and has altered the banks and inlet. Inlet is a non-RED.

No culvert found under Bydain NON

WIND FARM WATERBODY RAPID ASSESSMENT FORM

NON

Stantec

		Project Name 1\	1 71 64 /1 4 1	
Station # 34-2 Watercourse Name_unkno	. ~	Project Name	<u>Jagara i</u>	VITO
Photos State Of the Control of the C	W/\	Project #(o	2958269	
Photos See proto 100 Date June 20/12		Field Staff	EIME	
Westbor conditions in			32	
Weather conditions in previous	s 24 hrs	TCIP.		
GPS Coordinates (Zone) 1	TE 06	01124 N	4762268	Datum N
Descriptive Location	in maintained	Rd of Baldwin A	400 m not	th of
Canborough Rd				
Water Quality				
Dissolved Oxygen (mg/L)	/ pH_	Conduction	with the Clare	
Water Temperature (°C)	/ P.I		vity (μS/cm)	
Time in situ measurements take	cen	Air Temperature (°C)	
Watercourse Dimensions &	Morbuology			
Mean Watercourse Width	(m)	Maximum Pool De	pth	(cm)
Mean Bankfull Width		Mean Water Depti	1	_(cm)
% Riffle	% P	òol <u>/</u>	% Run	
Evidence of eroding banks, Co	mments on bank s	stability		
Cook at the Action of the Acti				
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Mu
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Gravel	Clay	Mari	Det
In-water Cover Cover Types Present (circle): Overhanging Vegetation	Undercut Ba		Watercress	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation W Riparian Zone	Undercut Ba Voody Debris	nks Deep Pool Boulder Oth	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation N Riparian Zone Riparian Cover (% of watercount)	Undercut Ba Voody Debris	nks Deep Pool Boulder Oth	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation W Riparian Zone	Undercut Ba Voody Debris	nks Deep Pool Boulder Oth	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use	Undercut Ba Voody Debris	nks Deep Pool Boulder Oth	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential	Undercut Ba Voody Debris rse shaded, domin	ant vegetation, matur	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential	Undercut Ba Voody Debris rse shaded, domin	ant vegetation, matur	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun	ant vegetation, matur	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun	ant vegetation, matur	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent)	ant vegetation, matur	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent)	ant vegetation, matur	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent)	ant vegetation, matur	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation W Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons) Note any fish observations	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent)	ant vegetation, matur	Watercress er	Aquatic
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons Note any fish observations Waterbody Notes	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent)	ant vegetation, matur	e or early succes	Aquatic sional)
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons Note any fish observations Waterbody Notes Natural Watercourse Tr	Undercut Ba Voody Debris rse shaded, dominarsery areas, grounal, permanent)	ant vegetation, matur	e or early succes	Aquatic sional)
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons Note any fish observations Waterbody Notes Natural Watercourse Tr	Undercut Ba Voody Debris rse shaded, dominarsery areas, grounal, permanent)	ant vegetation, matur	e or early succes	Aquatic sional)
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons Note any fish observations Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows)	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent) apezoidal Channel Dugout Pon	dwater upwellings) Grassed S Dominated	e or early succes SwaleE by Aquatic Veg	Aquatic sional) Buried Tile
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons Note any fish observations Waterbody Notes Natural Watercourse Tresurficial Drainage (i.e. furrows)_ Other Habitat Notes, Incidental	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent) apezoidal Channel Dugout Pon	dwater upwellings) Grassed S Dominated ations, etc. Meado	e or early succes SwaleE by Aquatic Veg	Aquatic sional) Buried Tile
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons Note any fish observations Waterbody Notes Natural Watercourse Tr	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent) apezoidal Channel Dugout Pon	dwater upwellings) Grassed S Dominated ations, etc. Meado	e or early succes SwaleE by Aquatic Veg	Aquatic sional) Buried Tile
In-water Cover Cover Types Present (circle): Overhanging Vegetation Riparian Zone Riparian Cover (% of watercount Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nu Migratory Obstructions (seasons Note any fish observations Waterbody Notes Natural Watercourse Tresurficial Drainage (i.e. furrows)_ Other Habitat Notes, Incidental	Undercut Ba Voody Debris rse shaded, domin rsery areas, groun al, permanent) apezoidal Channel Dugout Pon	dwater upwellings) Grassed S Dominated ations, etc. Meado	e or early succes SwaleE by Aquatic Veg	Aquatic sional) Buried Tile

TEARM The state of the s Canborough Rd 1717 01/21 g (a3e / LOW'S BALDWIN RO of white Porn HEDSEROW g(038 | 600 m



R	EAON
	0/1

	Station #35-		Project Name	Nigag	- 1)ca.	٦
	Watercourse Name	WN	Project #/(o	1950	1/00/1/0	-1
	Photos See Moto 100		Field Staff	ME ME	(0-)	
	Date 708 08 18		Time)6:0			
	Weather conditions in previou		0 C+10			
W	GPS Coordinates (Zone)		o'24 N		८३ Date	um NA
~ Pu		Collver Rd - 30,	n southor	Frence Ro		
O CO	Water Quality					
\ o'	Dissolved Oxygen (mg/L)					
W.O.	Water Temperature (°C)	pH	Conduct	ivity (μS/cm)		
F	Time in situ measurements tak	ten	Air Temperature	(°C)3 ₀	0	
	Watercourse Dimensions & I					
	Mean Watercourse Width 3	On.	Massian			
	Mean Bankfull Width	No.	Maximum Pool De	pth3 <u></u>	(cm)	
	% Riffle	% Pool	Mean Water Dept	h/5	(cm)	
	Evidence of eroding banks, Co	mments on bank stat		% Run		% F
				3 2 3 3 4 7 7 7		
	Substrate (% cover)					
	Bedrock	Cobble	Sand	50 s	ilt 50	Muck
•	Boulder	Gravel	Clay		lari	Muck Detritu
- 	n-water Cover	•	-	•		
	Cover Types Present (circle):			da.		
(Undercut Banks oody Debris E	Deep Pool Soulder Othe		ss Aqu	atic Veg
5	Riparian Zone	_	odidor Out	31 <u> </u>		
F	Riparian Cover (% of watercour	بالسباب المامطة مع				
_	Riparian Cover (% of watercours	se shaded, dominant	vegetation, mature	or early suc	cessional)	
	djacent Land Use					
	houses ag field	, 5 .				
	/					
F	ish Habitat Potential					
C	ritical Habitat (spawning or nurs	sery areas, groundwa	ter upwellings)			
NA.	igratory Obstructions (seasonal	Ny.				
101	Juck of water	i, permanent)				
N	ote any fish observations	The.			•	
-	"					
W	aterbody Notes					
Na	atural Watercourse Trap	pezoidal Channel	Gracead C	wale /	D	•
Sı	rficial Drainage (i.e. furrows)	Dugout Pond	Dominated b	v Aquatio Va	Buried Til	
)ry
Ot	her Habitat Notes, Incidental	Wildlife Observation	s, etc.			
4-1-1-1-1						

Field	Notes Authored by	Field Notes QA/QC	Ced by MET	•		
	7 70	Field Notes QA/Q0	Ced by MEE	,		
	d Notes Authored by	Field Notes QA/QC	Cled byCAForm 02 Wind Farm Wi	aterbody Rapid A	ssessment Form	doc

0002 Freure Rd



REA

Station #	Project Name Niagara Wind
Station # 50-2 Watercourse Name Trib of Welland M	Ry Project # 1/0/09/50 2/09
Photos See photo 104 Date 2012 06 18	Field Staff ME, MF
Date 2012 06 18	Time
Weather conditions in previous 24 hrs	623682 N 4762560 Datum NMD8
GPS Coordinates (Zone) 177 E O	623682 N 4762560 Datum AMDS
Descriptive Location On R R 2 23 ~	40m north of Canbornin Rs.
Water Quality	
Discolard Ongress/mg/L)	
Dissolved Oxygen (mg/L)	pHConductivity (μS/cm) Air Temperature (°C) 30 %
Time in situ measurements taken	Air Temperature (°C) 30 %
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	Maximum Pool Depth 7 / 0 (cm) Mean Water Depth 5 (cm)
Mean Bankfull Width(m)	Mean Water Depth 50 (cm)
% Riffle / <i>O</i> O	% Pool % Run % Fla
Evidence of eroding banks, Comments on ba	ank stability none observed.
Substrate (% cover)	
BedrockCobble	Sand 40 Silt 20 Muck 20 Clay Marl Detritus
BoulderGravel	20 Clay Marl Detritus
in-water Cover	•
	ut Banks Deep Pool Watercress Aquatic Veg
Sorbi Typod i Luboni (circio). Circioi	di Danks (Deep Fooi) Watercless (Aquatic veg
Overhanging Vegetation \ \ Woody Debris	Boulder Other
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, de	Boulder Other ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% ash se, willow se	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% ash se willow se	Boulder Otherominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, do 30% ash sp, will ow sp. Adjacent Land Use business, house, cds.	Boulder Other ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% ash se, willow se. Adjacent Land Use	Boulder Other ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% ash se, willow se Adjacent Land Use Positives house, cds. Fish Habitat Potential Critical Habitat (spawning or nursery areas, g	Boulder Other ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% ash se, will ow se Adjacent Land Use Positives of the se and see a se	Boulder Other ominant vegetation, mature or early successional) proundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% as hos positions (seasonal, permanent	ominant vegetation, mature or early successional) proundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% as hos positions (seasonal, permanent	ominant vegetation, mature or early successional) proundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% as hos positions (seasonal, permanent	Boulder Other ominant vegetation, mature or early successional) proundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% as how see a shaded, de	Boulder Other ominant vegetation, mature or early successional) proundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% as how see a shaded, de	Boulder Other ominant vegetation, mature or early successional) groundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30% as how see a shaded, de	ominant vegetation, mature or early successional) proundwater upwellings)
Riparian Zone Riparian Cover (% of watercourse shaded, de 30 %	Boulder Other ominant vegetation, mature or early successional) groundwater upwellings) annel Grassed Swale Buried Tile t Pond Dominated by Aquatic Veg Dry servations, etc
Riparian Zone Riparian Cover (% of watercourse shaded, de 30 %	Boulder Other ominant vegetation, mature or early successional) groundwater upwellings) t) annel Grassed Swale Buried Tile t Pond Dominated by Aquatic Veg Dry
Riparian Zone Riparian Cover (% of watercourse shaded, de 30 %	Boulder Other ominant vegetation, mature or early successional) groundwater upwellings) annel Grassed Swale Buried Tile t Pond Dominated by Aquatic Veg Dry servations, etc



WIND FARM WATERBODY RAPID ASSESSMENT FORM Welland RV

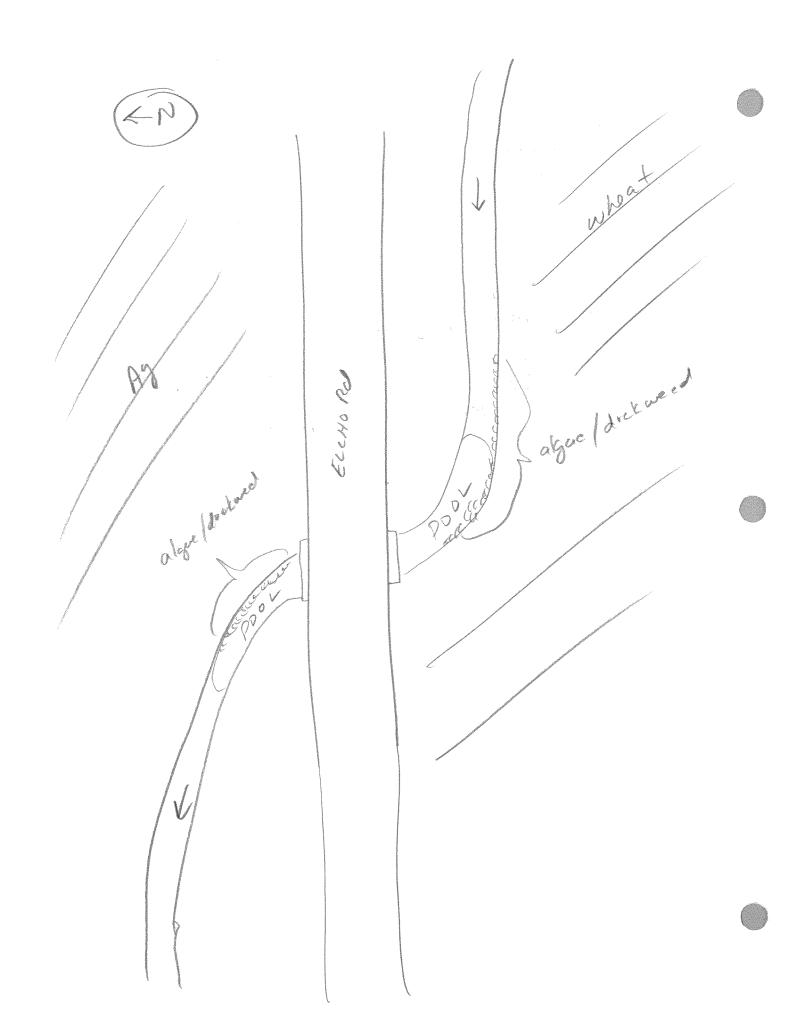
Station # 35 - 3	Project Name Niagara Wind	
Watercourse Name \\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	Project #_1/00950269	
Photos See photo log	Field Staff MEME	
Date 2012 06 18		
Weather conditions in previous 24 hrs	11110 10.40	
GPS Coordinates (Zone)	724 N 4762460 Datum (14082	
Descriptive Location On Pivers 14 100	724 N 4762460 Datum NAD 83 - 40m South OF Canborough Rd.	
The second of th	40m South Ut Canborough Rd.	
Water Quality		
Dissolved Oxygen (mg/L) pH	Conductivity (O/-)	
Water Temperature (°C)		
Time in situ measurements taken	Air Temperature (°C)	
Watercourse Dimensions & Morphology		
Mean Watercourse Width 30 (m)	Maximum Pool Donth	
Mean Bankfull Width 40 (m) flood pl	Maximum Pool Depth // (cm) Mean Water Depth // (cm)	
% Riffle% Po	Mean Water Depth (cm) > / 0	
Evidence of eroding banks, Comments on bank st		
	ability none observed	
Substrate (% cover)		
	Sand 30 3 Sile Sp 3 Musle	
Boulder Gravel	Sand 30 3 Silt 50 2 Muck Clay Marl Detritus	
Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, domina	Boulder Other	
2010 flee 30, seed canas arg	ss willow sp.	
,,, , , , , , , , , , , , , ,		
1-10 uses, 1d5		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	water upwellings)	
Migratory Obstructions (seasonal, permanent)		
Note any fish observations		
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale Ruriod Tile	
	· · · · · · · · · · · · · · · · · · ·	
Field Notes Authored by Field Notes C	WQCed by WEE	

29120-10-51. Rd. Rivers Side

REA



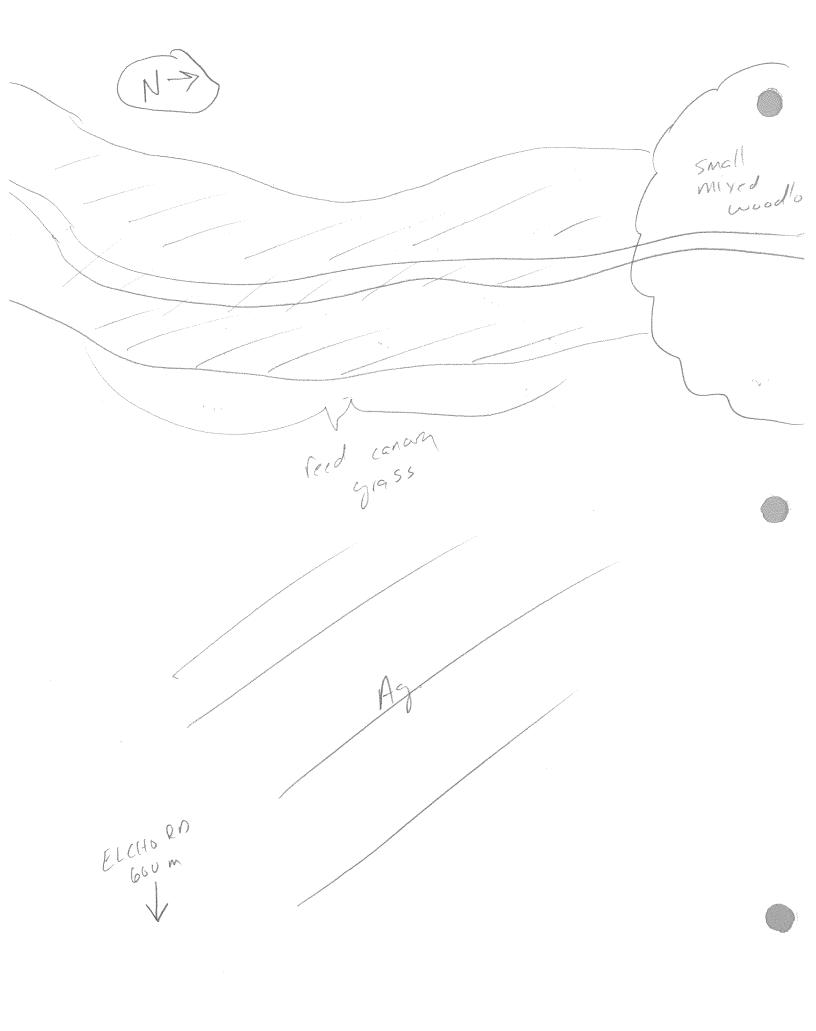
Station # 36-1	Project Name Niagara Wind
Watercourse Name	Project #_//00950269
Photos See photo 106: Date 20 87 66 18	Time
Weather conditions in previous 24 hrs	
GPS Coordinates (Zone) F E	0621414 N 4763625 Datum NAD83
Descriptive Location On Elcho	Rd - 2km west of Roy Rd 27.
	NA ALM SOJA SI ROJEMAN.
Water Quality	
Dissolved Oxygen (mg/L) 7.13	pH 7.98 Conductivity (μS/cm) 48
Water Temperature (°C) 23 14	Air Temperature (°C) % *
	7 Tomporatars (3)
Watercourse Dimensions & Morpholo	av
	Maximum Pool Depth ~ 8 0 (cm)
Mean Bankfull Width 5.5 (m)	Mean Water Depth 50 (cm)
	% Pool% Run% Flat
Evidence of eroding banks, Comments of	
Substrate (% cover)	· ·
	obleSand <u>45</u> Silt <u>39</u> Muck
BoulderGra	vel 35 Clay Mart Detritus
Cover Types Present (circle): Und Overhanging Vegetation Woody Deb Riparian Zone	lercut Banks Deep Pool Watercress Aquatic Veg oris Boulder Other
Riparian Cover (% of watercourse shade	d, dominant vegetation, mature or early successional)
do reed conory grass	
Aujacent Land Use	
Pag	
Find Hobitat Detended	
Fish Habitat Potential	
Critical Habitat (spawning or nursery area	is, groundwater upweilings)
Migratory Obstructions (seasonal, permar	
Note on fich charactions	
140te arry fish observations	
Waterbody Notes	
. /	Channel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows)	gout Pond Dominated by Aquatic Veg Dry
	50017 0114 5011111111111111111111111111111111
Other Habitat Notes, Incidental Wildlife	Observations, etc. Barn Swallow
-	
Field Notes Authored by	Field Notes QA/QCed by MEE



REA



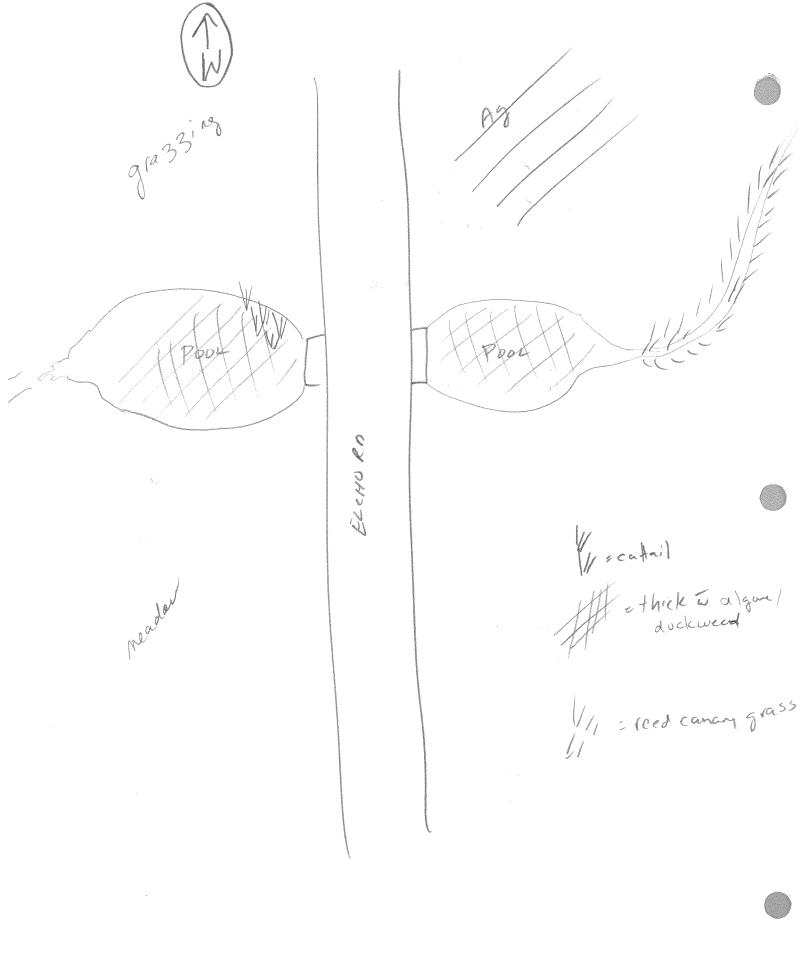
Water Quality Dissolved Oxygen (mg/L) pH_ Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m)% Riffle % P Evidence of eroding banks, Comments on banks	Air Temperature Maximum Pool D Mean Water Dep	epthN		Da
Mean Watercourse Width 2 0 (m) Mean Bankfull Width 3 0 (m) % Riffle% P	Mean Water Dep			
Evidence of electing burner, comments on burner			(cr (cr	n) \bigcirc \wedge
O. L. A. A. A. (0)				
Substrate (% cover)BedrockCobble	Sand	30 9	Silt 7	○ Muc
BoulderGravel	Clay	<u> </u>	/larl	Det
Riparian Zone Riparian Cover (% of watercourse shaded, domin 30% (ecd canon a cass)	ant vegetation, matu	•		al)
Adjacent Land Use				,
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groun	dwater upwellings)			
Migratory Obstructions (seasonal, permanent)				•
Note any fish observations None - Dry				
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Por	nd Dominated	d by Aquatic \	/eg	Dry_
Other Habitat Notes, Incidental Wildlife Observ	ations, etc. <u>IV 0 h</u>	<u> </u>		



REA



Station # 36-3		Project	ot Nama	N1 A	(1:- 1	
Watercourse Name	000		ct Name _ ct #// ₀	0950		UMA	
Photos See photo		Field		WE WE	2009		
Date 2012 97 06-1	1	Time		46		****	
Weather conditions in previous		100 200		7.0			
GPS Coordinates (Zone)		101 000	-	1/1-1/2	. بر		
Descriptive Location On E		3KM			2766	Datur	n MAD&S
	LRU NA 3	JEIY\	NEST O'	K. K.	- 2 t		
Water Quality							
Dissolved Oxygen (mg/L) 7.1	a9 nH	0 109	Conduc	dissibate Colo		100	
Water Temperature (°C)	1.65	Air To	Conduc	uvity (µ3/0	;m)	6 T D	
Time in situ measurements take	9n13:49	All 16	mperature	(-0)	502		
Watercourse Dimensions & M	lombology		. *	< %			
Mean Watercourse Width / D	/m)	Mavim	um Pool F	lanth	7 -	()	
Mean Watercourse Width /.D Mean Bankfull Width / D	(m) Flood pla	Mean!	Mater Dor	ebui	TU_	_(cm)	
% Riffle	% Po		water Det	% Ri		_(cm)	0/ Et
Evidence of eroding banks, Con	nments on bank s	oui tahilih	105 m 6				% Fla
			TONE (DI SUVCE	7		
Substrate (% cover)							5
Bedrock	Cobble		Sand	40	Silt	40	Muck
Boulder	Gravel	70	Clay	70	Siit Marl	/ -	_wuck Detritus
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use	oody Debris se shaded, domina	Boulde	r Ot	her	rcress / succes:		atic Veg
Fish Habitat Potential							
Critical Habitat (spawning or nurs		dwater up	wellings)				
<u>Σραψη</u> Migratory Obstructions (seasonal	I, permanent)						
lack of water.	-					•	
Note any fish observations	ne						
Waterbody Notes Natural Watercourse Trap Burficial Drainage (i.e. furrows) Other Habitat Notes, Incidental	pezoidal Channel Dugout Pond	d	Grassed Dominated	Swale_ I by Aquati	B c Veg	uried Til	e)ry
							·····
ield Notes Authored by	Field Notes (QA/QCed by	NATA				

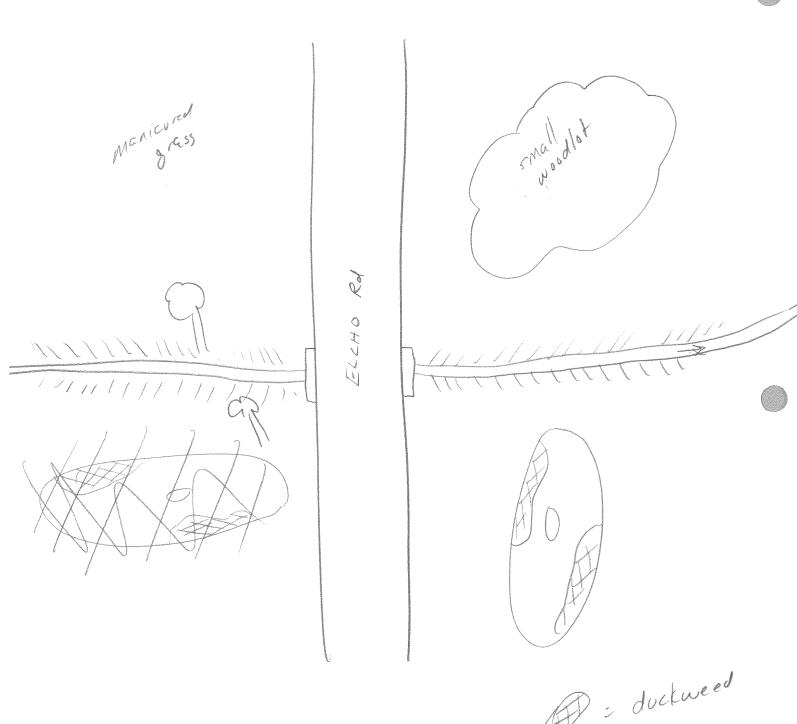






Station # 39-	Project Name Niagara Wind
Watercourse Name Unknown	Project # 160950269
Photos See photo 100	Field Staff F
Photos Sec 20040 109 Date 2012 06 18	Time 12:40
Weather conditions in previous 24 hrs	ninor orccioitation
GPS Coordinates (Zone) 177 E	0622 571 N 4763682 Datum NAD83
Descriptive Location 60 m west	of Regional Rd 27 on Elcho Rd.
Crosses under Elcho Rd.	
Water Quality	
Dissolved Oxygen (mg/L) 3.73	pH <u> 7.57</u> Conductivity (μS/cm)/534
Water Temperature (°C) 2180	Air Temperature (°C)
Time in situ measurements taken	:45
Watercourse Dimensions & Morphology	у
Mean Watercourse Width / / O (m)	Maximum Pool Depth ~ 70 (cm)
Mean Bankfull Width 3.0(m)	Maximum Pool Depth 70 (cm) Mean Water Depth 30 (cm) % Pool% Run% Fla
% Riffle	% Pool% Run 7 0% Fla
Evidence of eroding banks, Comments on	bank stability none, well vegtion
Substrate (% cover)	
	olo Cond //> Out by said
Boulder Graye	el <u>20</u> Clay Silt & Muck
Adjacent Land Use	dominant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas,	groundwater upwellings)
Spawn, Waxim Invisery	
Migratory Obstructions (seasonal, permane	int)
Note any fish observations Fish 30	
Waterbody Notes Natural Watercourse Trapezoidal C	hannel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugo	out Pond Dominated by Aquatic Veg Dry
	bservations, etc.
Frog ap.	
0 01	
Field Notes Authored by Fie	eld Notes QA/QCed by





duckweed

| duckweed

| red canangeras



		sware, plants,	1/2/1/-	REA ROST
WIND FARM WA	ATERBODY F	RAPID ASSESSM	ENT FORM	Side of Rou
\circ				Non PEA UN

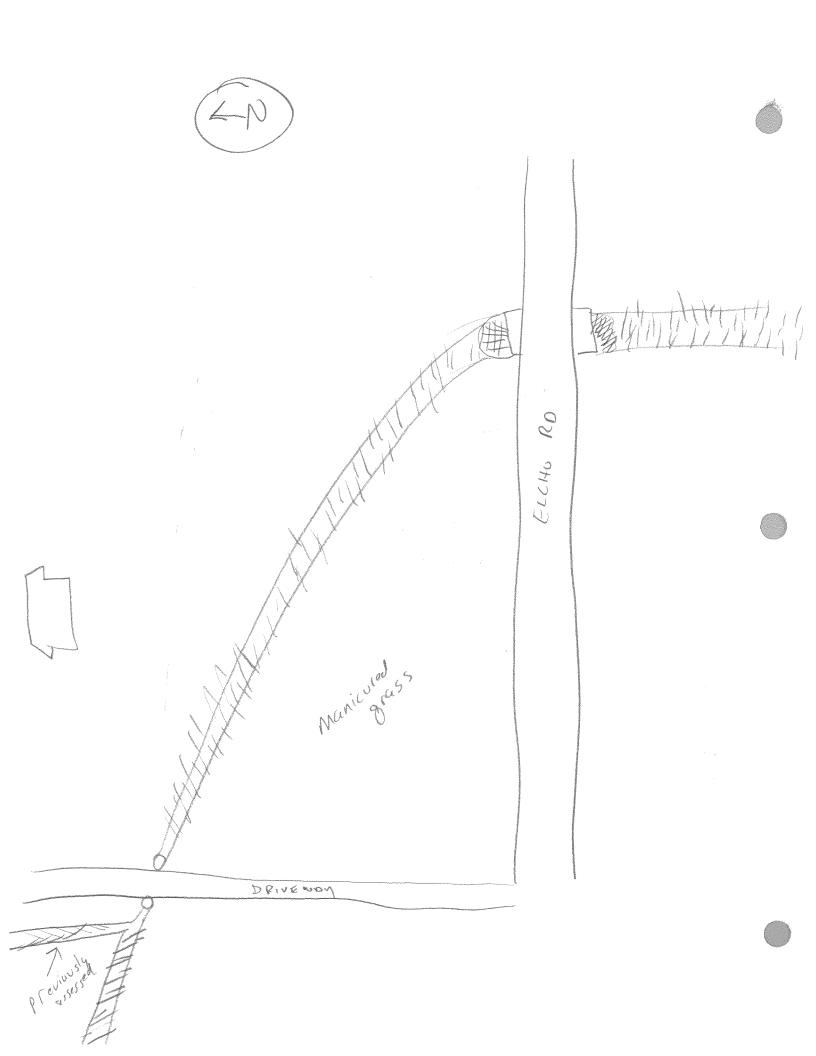
W Pr Da W GI De Wa Tir	ration #	1 hrs	Proje Field Time	N 47	18269 MF -64173	Ninc	
W Pr Da W GI De Wa Tir	atercourse Name unknown ater Quality solved Oxygen (mg/L)	1 hrs	Proje Field Time	ct #1609S Staff	18269 MF -64173		<u> </u>
W Pr Da W GI De Wa Tir	atercourse Name unknown ater Quality solved Oxygen (mg/L)	1 hrs	Proje Field Time	ct #1609S Staff	18269 MF -64173		
Pr Da W GI De W Wa Tir	eather conditions in previous 24 PS Coordinates (Zone) 171 escriptive Location 0 ater Quality escolved Oxygen (mg/L)	1 hrs	Proje Field Time	ct #1609S Staff	18269 MF -64173		
Da W GI De W Wa Tir	eather conditions in previous 24 PS Coordinates (Zone) 171 escriptive Location ater Quality ssolved Oxygen (mg/L)	1 hrs	Field Time	Staff <u>ME 11</u> 1 2 2 3	m F -64173	Datus	
W GI De W Wi Di: Wi Tir	eather conditions in previous 24 PS Coordinates (Zone) 171 escriptive Location 2 ater Quality ssolved Oxygen (mg/L)	E 062	recipital 12266	N 47	-64173 F Elcha	Datus	
GI De W W Dis Tir	PS Coordinates (Zone) 171 escriptive Location 0 ater Quality ssolved Oxygen (mg/L)	E 062	12266	N 43	-64173 F Eliha 6	Datus	
De Wa Dis Va Tir	ater Quality ssolved Oxygen (mg/L)				-64173 FELLAR	Datus	
Wa Wa Dis Wa Wa	ater Quality ssolved Oxygen (mg/L)	K.K. at	~ 600 i	m north o	P Elcha G	<u> </u>	n Nad8
Value Dis Wa Tir Wa	ssolved Oxygen (mg/L)				. — (Sear to 60 P	Rd.	
Wa Tir W a	ssolved Oxygen (mg/L)						
Wa Tir W a		рН		Conductivity (uS/cm)	and the same of th	
Tir W a	ater Temperature (°C)	<u> </u>		emperature (°C)		0 2	600 Carino Charles Carino Company
Wa	me in situ measurements taken		7.11. 10				
	atercourse Dimensions & Mor	phology		\wedge			p/@
Me	ean Watercourse Width 0,40		Maxin	num Pool Depth_	20	_(cm) \	/ lvert
Me	ean Bankfull Width/,©	(m)	Mean	Water Depth	70	(cm)	Donn
	% Riffle	% F	Pool		% Run	\\/	% Flat
Ev	idence of eroding banks, Comm	nents on bank	stability	minor under			
Su	bstrate (% cover)						
	Bedrock	Cobble		Sand 40	Silt	30	Muck
	Boulder	Gravel	30	Clay	Siit Marl		_iviuck Detritus
				@ cu)0			_Detritus
	water Cover						
00	ver Types Present (circle):	Undercut B	`		Natercress	Aqu	atic Veg
Ov	erhanging Vegetation Woo	dy Debris	Boulde	er Other		.~	
Rip	oarian Zone						
Rip	parian Cover (% of watercourse	shaded, domi	nant vege	tation, mature or	early succes	sional)	
$\overline{\Delta}$	acent Land Use						
Auj	oc Abld						
	V () ()						
Fis	h Habitat Potential						
	tical Habitat (spawning or nurse	rv areas arou	ındwatar u	nwollings)			
N	15N	iy arcas, grou	iliuwatei u	pweiiirigs)			
Mig	gratory Obstructions (seasonal, p	permanent)	h lo: 1				
Not							
	terbody Notes				/		
Nat	ural Watercourse Trape	zoidal Chann	el	Grassed Swal	le 🗸 📑	Buried T	ile /
Sur	ficial Drainage (i.e. furrows)	Dugout Po	ond	Dominated by A	quatic Veg_		Dry
	er Habitat Notes, Incidental W						-
	The state of the s	maine Obser	vations, e	ic. respector 1	0) 2 2 (con	Y1055	

Field Notes QA/QCed by ______

ス.ス.ロナ MONA Row Row Med Los

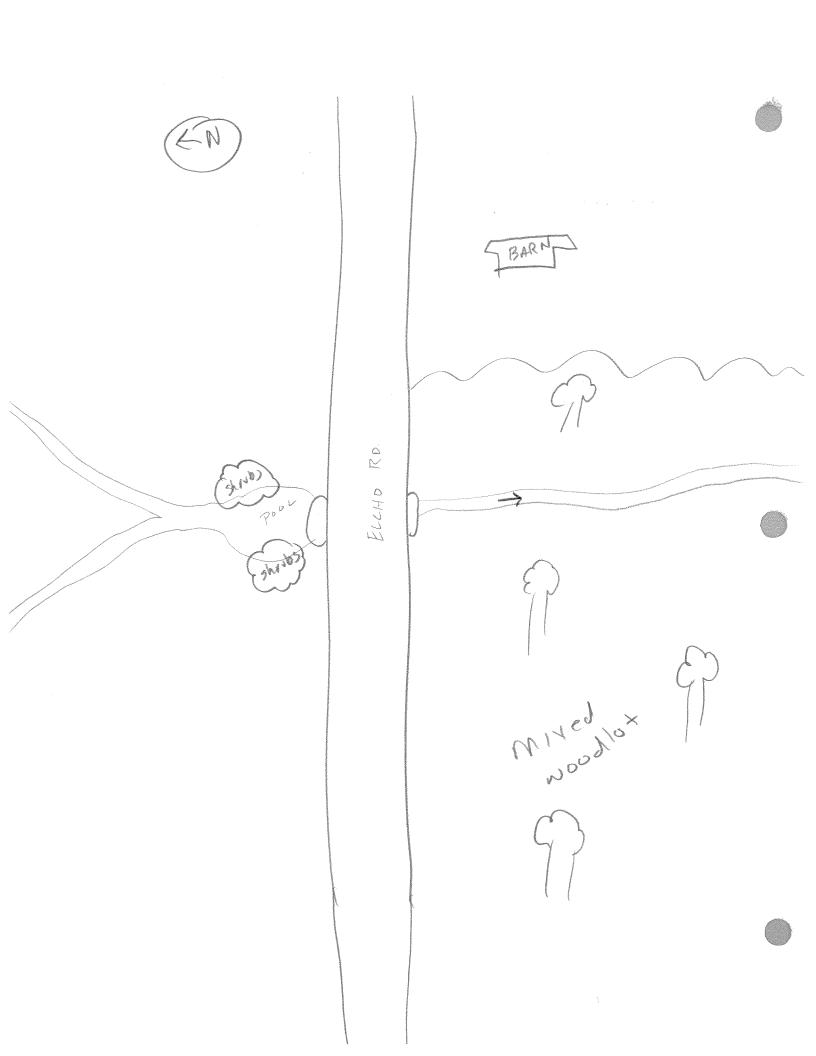


Station #38-	Project Name Nice Car and Nice of
Watercourse Name unknown	Project Name Nagara Wind Project # 160950269
	Field Staff ME ME
Photos See photo logo Date 2012 06 18	Time 14:32
Weather conditions in previous 24 hrs	
GPS Coordinates (Zone) 131 E	0623441 N 4763744 Datum NAD 8
Descriptive Location On Elcho R	d ~400 m east of RR #27
Water Quality	
Dissolved Oxygen (mg/L) 83	pH 8 1/6 Conductivity (uS/cm) 2926
Water Temperature (°C) 22.43	pH 8 // b Conductivity (μS/cm) 292 b Air Temperature (°C) 30° c
Time in situ measurements taken	:45
Watercourse Dimensions & Morphology	
Mean Watercourse Width / (m)	Maximum Pool Depth (cm)
Mean Bankfull Width 3.0 (m)	Maximum Pool Depth(cm) Mean Water Depth(cm)
% Riffle	_% Pool% Run% Fla
Evidence of eroding banks, Comments on b	pank stability minor under cut
Code Amada (O)	
Substrate (% cover)	• !! .m. • !! .m.
BedrockCobble	Sand 40 Silt 40 Muck Clay Marl Detritus
BoulderGravel	2DClayMarlDetritus
Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, of	dominant vegetation, mature or early successional)
Adjacent land land	
Adjacent Land Use	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, o	groundwater upwellings)
foraging	
Migratory Obstructions (seasonal, permanen	ıt)
Note any fish observations Fish so	
*	
Waterbody Notes	
Natural Watercourse Trapezoidal Ch	annel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugou	t Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, incidental Wildlife Ob	oservations, etc
Prog 50	
Ø *	
	•
Field Notes Authored by Field	d Notes QA/QCed by
	,





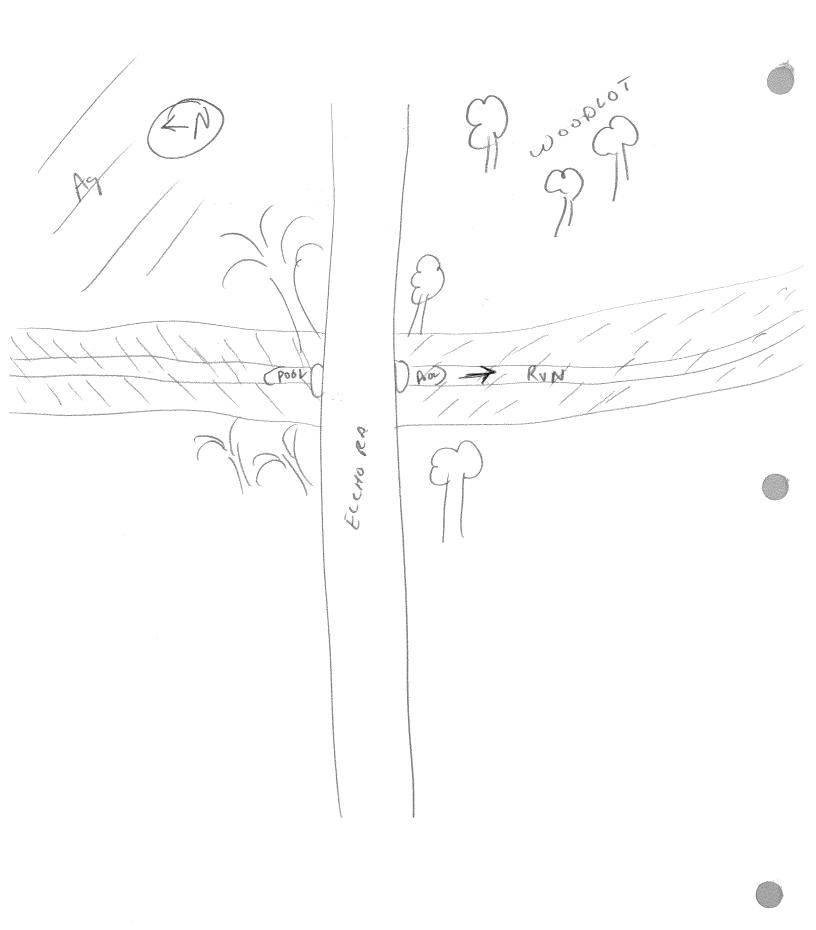
Station # 58-4	Project Name Niagara Wind
Watercourse Name Unknown	Project #_160950269
Photos See photo 105	Field Staff ME, ME
Date 2012 06 18	Time 14:49
Weather conditions in previous 24 hrs	NI NOY DOCKIA
Weather conditions in previous 24 hrs GPS Coordinates (Zone) F E	624426 N 4763786 Datum NAD83
Descriptive Location On Elcho Rd -	650m east of Colluer Rd
Water Quality	
•	OH 9 13 Conductivity (Story) (3.60
Water Temperature (°C) 19.59	pH 9.13 Conductivity (μS/cm) 1798
Time in situ measurements taken 4.55	Air Temperature (°C) 3002
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width 10 (m)	Maximum Pool Depth3 (cm)
Mean Bankfull Width 2.0 (m)	Mean Water Depth /5 (cm)
% Riffle	
Evidence of eroding banks, Comments on ba	nk stability none observed
Substrate (V agree)	
Substrate (% cover) Bedrock Cobble	//) Cond 7.0 000 0
BedrockCobble_ Boulder Gravel	Ont - Middle
	30 Clay Marl Detritus
30% matur + Immatur 69	minant vegetation, mature or early successional)
Adjacent Land Use	
ag land	
0	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, gr	oundwater upweilings)
Migratory Obstructions (seasonal, permanent)	
Migratory Obstructions (seasonal, permanent)	,
Note any fish observations Species observations	•
Note any fish observations <u>Species ob su</u>	rved
Vaterbody Notes	
Vatural Watercourse Transpoidal Chai	nnel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows)	Pond Dominated by Aquatic Veg_ Dry
Duyout	Polid Dominated by Aquatic Veg_V Dry
Other Habitat Notes Incidental Wildlife Obe	ervations, etc.
	er valions, all.
	· •
eld Notes Authored by MF Field N	Inter OA/OCcal by MA EEE







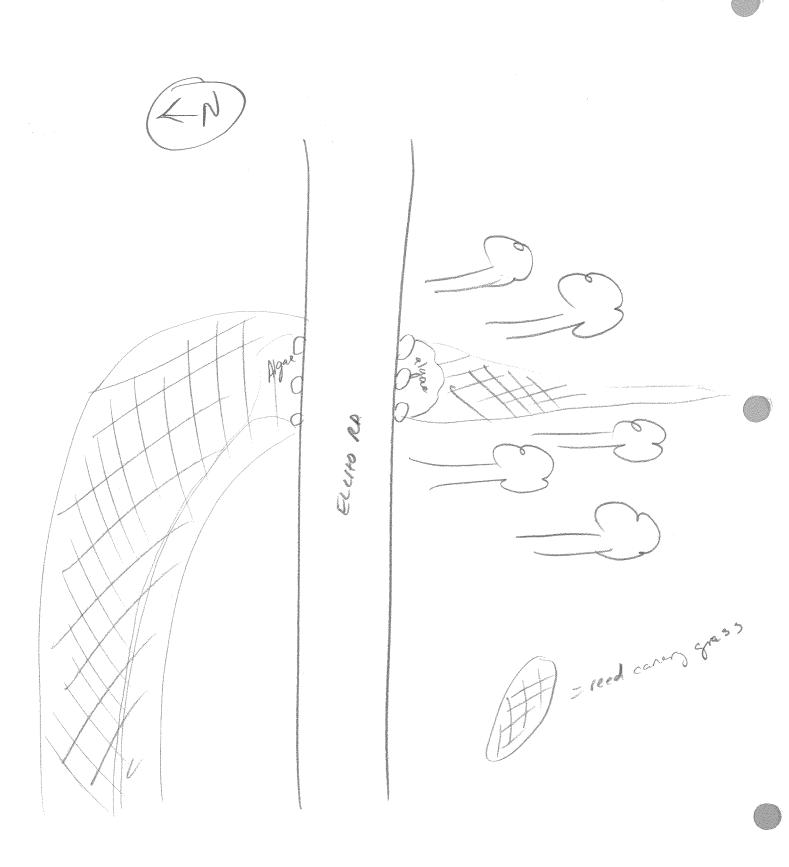
Watercourse Name
PhotosQe
Time
Weather conditions in previous 24 hrs GPS Coordinates (Zone) Descriptive Location Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width Mean Water Depth Mea
GPS Coordinates (Zone) The E Coordinates (Zon
Water Quality Dissolved Oxygen (mg/L)
Water Quality Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
Mean Watercourse Width 3.5 (m) Maximum Pool Depth (cm) Mean Bankfull Width 3.0 (m) Mean Water Depth / 0 (cm) Mean Water Depth / 0 (cm)
Mean Watercourse Width 3.5 (m) Maximum Pool Depth (cm) Mean Bankfull Width 3.0 (m) Mean Water Depth / 0 (cm) Mean Water Depth / 0 (cm)
Mean Bankfull Width 3.0 (m) Mean Water Depth 70 (cm) % Pun %0 % Fla
V/ Dima // // // // // // // // // // // // //
Evidence of eroding banks, Comments on bank stability Minor 32007.
Substrate (% cover) Bedrock Cobble Sand 30 Silt 40 Muck
Boulder Gravel 30 Clay Marl Detritus
In-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
5% red canny cyrass
Adjacent Land Use
ag fields
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)
Migratory Obstructions (seasonal, permanent)
Note any fish observations
Note any fish observations
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc
Field Notes Authored by MF Field Notes QA/QCed by MFE







Station #		Project Name N	a 0 a = 1)c	
Watercourse Name	n	Project #_/(o)	agara Coli	<u> </u>
Photos sa mate 105		Field Staff ME. A	130209	
Date 2012 NO 18		Time 15:22	/1 P	
Weather conditions in previous 2	4 hrs	precip.	5.	
GPS Coordinates (Zone)	F 10621	- V - M / I	21-70-6	
Descriptive Location Do	Icho Rd ~	DOM West	F. Gee Rd	atum NAO3
	· ·			
Water Quality				
Dissolved Oxygen (mg/L)		0		
Water Temperature (°C)	P''	Conductivity	(μS/cm)	
Time in situ measurements taken		Air Temperature (°C)	30°_	
<u>-</u>				
Watercourse Dimensions & Mor	phology			
Mean Watercourse Width / O	(m)	Maximum Pool Depth	(cr	n)
Mean Bankfull Width 2.5	(m) ⁻	Mean Water Depth	<u> </u>	
% Riffle	<u> 100</u> % Poo		% Run	% Fla
Evidence of eroding banks, Comm	ients on bank sta	bility none or	orge week.	/ 7 7 10
Substrate (% cover)				
Bedrock	Cobble	Sand3	Silt 40	Muck
Boulder	Gravel3	Clay	Marl	Muck Detritus
Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of waters				The second secon
Riparian Cover (% of watercourse s	snaded, dominan	t vegetation, mature or	early successiona	ni)
Adjacent Land Use	minature / v	natur Mixed	woodlot.	
woodlot, rdiag.				
,				
Fish Habitat Potential				
Critical Habitat (spawning or nurser	y areas, groundw	ater upwellings)		
JAWA 1		<u> </u>		
Migratory Obstructions (seasonal, p				
Note any fish observations	uf comp	VAUL	•	
140te any list observations	V. 1	/		
Waterbody Notes				
Natural Watercourse Trapez	oidal Channel	Grassed Swale	Ruried	Tila
Surficial Drainage (i.e. furrows)	_ Dugout Pond_	Dominated by Ac	uatic Veg	Dry
			, —	DI y
Other Habitat Notes, Incidental Wil	dlife Observation	ns, etc. <u>krou</u> 5	0.	
		· ·		
ield Notes Authored by		-confiden-	,	
City Holes Additioned by	Field Notes QA/	QCed byMEE	-	





/ 1 0 1	
Station #	Project Name Niagara Wind
Watercourse Name UNCADWN	Project #_160950269
Photos <u>see photo log</u>	Field Staff ME, MF
Date 1012 00 19	Time 15:34
Weather conditions in previous 24 hrs	NY764069 Datum NAD83
GPS Coordinates (Zone) 177 E 6293/	
Descriptive Location On Browne Rd ~ 20	m South or Condocaugh Ra
Channel pro west side.	
Water Quality	
Dissolved Oxygen (mg/L) 6.83 pH 9	637 Conductivity (µS/cm) 819
Water Temperature (°C) 24.04	Air Temperature (°C) 30°c
Time in situ measurements taken	
Watercourse Dimensions & Morphology	Maximum Pool Depth(cm)
Mean Watercourse Width (m)	Mean Water Depth (cm)
Mean Bankfull Width (m)	0/ 51-4
% Riffle% Poo	70 1 (31)
Evidence of eroding banks, Comments on bank sta	ability Manage 3000
Substrate (% cover)	
Bedrock Cobble	20 Sand 30 Silt 20 Muck
Boulder Gravel	20 Sand 30 Silt 20 Muck 30 Clay Marl Detritus
BoulderCravor	
In-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris	
Riparian Zone Riparian Cover (% of watercourse shaded, domina 37. Yerd Covery State State Adjacent Land Use DASTUCE MOUSES (ds)	ant vegetation, mature or early successional)
Mastoret Mouses, to	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	dwater upwellings)
Migratory Obstructions (seasonal, permanent)	
manol	
Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	ations, etc
	3
Field Notes Authored by Field Notes	
	s\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc
W:\resource\internal info and Teams\Aquatic Resources\rield Sheets	

Concession Boyle Rd seed canary grass.



Stantec				
Station # 43-\ Watercourse Name unknown Photos Date June 1/2. Weather conditions in previous 24 hrs GPS Coordinates (Zone) 171 E Co Descriptive Location 04-04 Vaugho	Project Field STIME LANGE	Staff 1606 Staff 560 NU	one, Kidayt	nd ntum Nad 8 =
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	pHAir Te	_ Conductivity	/(μS/cm) <u>44</u> 2) <u>30°</u> C	
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) ———————————————————————————————————	Mean ' % Pool	water Depth_ Vege fate	0.45 (cr	•
Substrate (% cover)BedrockCobbleBoulderGravel		_Sand	∫ Silt Marl	Muck
In-water Cover Cover Types Present (circle): Undercu Overhanging Vegetation Woody Debris	ut Banks Boulde		Watercress (Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, do Adjacent Land Use Crapland		ration, mature		al)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, g	M. formain	owellings)		,
Migratory Obstructions (seasonal, permanent Note any fish observations	:)	~		
Waterbody Notes Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugou	annel t Pond	Grassed Sv Dominated by	vale Burie / Aquatic Veg	ed Tile
Other Habitat Notes, Incidental Wildlife Ob	turbid we			ae Norths & Sarth
Field Notes Authored by Kayfar Field	i Notes QA/QCed b	by ME		

Vauchn Road

Comment of the second





	1.1.200
Station # 44 -	Project Name Niagara Wind Project # 160950269
Watercourse Name_unknawn	Project # 160958269
Photos	Field Staff O. Voon Q. V. Cluyton
Date June 20/12	Time
Troutist Conditions in provides = 1	621 N 4765373 Datum Nad 83
GPS Coordinates (Zone) 17T E 622	
	Regional Rd 27, Nathof
	TRI CA
Water Quality \ - no water	
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	Maximum Pool Depth(cm)
Mean Bankfull Width 2.5 (m)	Mean Water Depth (cm)
% Riffle % Poo	
Evidence of eroding banks, Comments on bank sta	ability
ZVICESTICS OF STOCKING STATES, ST	
Cub strate (9/ cover)	
Substrate (% cover) Bedrock Cobble	40 Sand 10 Silt Muck
Boulder Gravel	Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris	nks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domina	ant vegetation, mature or early successional)
Adjacent Land Use	
Adjacent Land Ose	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	dwater upwellings)

Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Note any fish observations	
Waterbody Notes	Grassed Swale Buried Tile
Natural Watercourse Trapezoidal Channe	
Surficial Drainage (i.e. furrows) Dugout Por	id Dominated by Aquatic veg bry
Other Habitat Notes, Incidental Wildlife Observ	ations, etc.
Field Notes Authored by Carry Field Notes	s QA/QCed by





Station #	Project Name Niagara Wind
Watercourse Name unknown	Project # 160958269
Photos	Field Staff J. Leene C. Clayton
Date June 20/12	Time
	ahumid
GPS Coordinates (Zone) 17T E 622 6	
	ional Rd 27 (East side),
\	ghnld.
Water Quality and	
	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	Maximum Pool Depth(cm)
Mean Bankfull Width / (m)	Mean Water Depth(cm)
% Riffle% Po	ool% Run% Flat
Evidence of eroding banks, Comments on banks	stability
Cubatrata (9/ acuar)	
Substrate (% cover)	1/2 2004
BedrockCobble	Sand Silt Muck So Clay Marl Detritus
BoulderGravel	So Clay Marl Detritus
In-water Cover	
Cover Types Present (circle): Undercut Ba	anks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature or early successional)
857, avasses envi	U
Adjacent Land Use	
Crops- Alfata Sar	
in the second se	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, groun	ndwater upwellings)
Migratory Obstructions (seasonal, permanent)	in spring.
Migratory Obstructions (seasonal, permanent)	
Note any fish shoomstides	
Note any lish observations	
NA/-AIIIIII	
Waterbody Notes	
Natural Watercourse I rapezoidal Channe	el Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Po	nd Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observ	vations, etc
Field Notes Authored by K Clauter Field Note	es QA/QCed by

Central Wellard Kiver Lunnamed Creek



WIND FARM WATERBODY RAPID ASSESSMENT FORM

NON

Station #45-		Project Name Nico	MA COLLAN	
Watercourse Name (A November 1997)	Y	Project # (60		1
Photos 9123 - 912	35			227
Date June 20/12		Time (0:45		
Weather conditions in previous 24	thrs hat a	humid		
GPS Coordinates (Zone) 62402	7 E 4765			atum Nad
Descriptive LocationEart	Of Turby	076 Offe	- O Variot	atum Nad
			3 = Vaugr	
Water Quality				
Dissolved Oxygen (mg/L)	pH	Conductivity	(uS/cm)	
Water Temperature (°C)		Air Temperature (°C)	3 ~	
Time in situ measurements taken_				
Watercourse Dimensions & Mor	phology			
Mean Watercourse Width	. (m) /	Maximum Pool Depth	(c	m)
Mean Bankfull Width	(m)	Mean Water Denth	(C	m)
% Riffle	(/_% Pool		% Run(c	, % Flat
Evidence of eroding banks, Comm	ents on bank stal	bility		
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel	Clay	Mari	Detritus
Cover Types Present (circle): Overhanging Vegetation Wood	Undercut Bank dy Debris	s Deep Pool Boulder Other_	Watercress	Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse s	shaded, dominan	t vegetation, mature or	early succession	ıal)
Adjacent Land Use	- Gras	ses, early		
+avmand		*		
- Tavrijano				
Fish Habitat Potential				
Critical Habitat (spawning or nurser	v areas aroundu	rator upwallings)		
	y areas, groundw	ater upweilings)		
Migratory Obstructions (seasonal, p	ermanent)			
Note any fish observations				
Waterbody Notes				
Natural Watercourse Trape	zoidal Channel	Granad Swa	la Divisi	1 -7 -9 -
Surficial Drainage (i.e. furrows)	Dugout Pond	Dominated by A	ie Burie Aquatic Veg	ea lile
Other Habitat Notes, Incidental W	iidiite Observati	ons, etc.		
s de l				
Field Notes Authored by	Field Notes OA	AOCod by T		



Uh	nan	red	Cr	-eet
	40	CW	2	_

Station # 45-2	Project Name	agara Wi	
Watercourse Name	Project #	1950269	
Photos 9126-9128	Field Staff	WARD I VA	7 84
Date June 20/2	Time		
Weather conditions in previous 24 hrs	a humid		
GPS Coordinates (Zone) 624331 E 4765	169 N	Da	itum / 7
Descriptive Location Fact of 4	s-1, off of	VaughnRa	
Water Quality			
Disposit and One of the	and the same of th		
Water Temperature (°C) pH	Conductivity	(μS/cm)	
Time in situ measurements taken	Air Temperature (°C)	32	
Watercourse Dimensions & Morphology			
Mean Watercourse Width (m)	Maximum Pool Depth) /am	
Mean Bankfull Width(m)	Mean Water Depth		•
% Riffle % P00		(crr _% Run	,
Evidence of eroding banks, Comments on bank sta	hility	_/o rturi	% Fla
Substrate (% cover)			
BedrockCobble			
BoulderGravel	Sand Clay	Silt Marl	Muck
In-water Cover Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris	s Deep Pool Boulder Other	Watercress A	Detritus Tupin quatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, dominant	t vegetation, mature or	early successiona	1)
Agricultural Jana			
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundw	ater upwellings)		
Migratory Obstructions (seasonal, permanent)			
Note any fish observations			
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond_ Other Habitat Notes, Incidental Wildlife Observation	Grassed Swal	le Buried	Tile
ield Notes Authored by K. Claydo Field Notes QA			





Stantec

Station # $4(a-1)$	
Watercourse Name unkn	Project Name Niagara Wind
Photos Photos	Project # 1/ 296 200
Date Oliver 20 /1=	Field Staff
Photos Date June 20/12 Weather conditions in any	Project # 160950269 Field Staff Coord
Garior Conditions in heavious	10 0 1 h h h h
GPS Coordinates (Zone)	TT E 626828 N 4765319 Potential
Descriptive Location	of Vaughn Rd, West of Greenad
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements tak	pH Conductivity (µS/cm)
Watercourse Dimensions & Mean Watercourse Minimum	Morphology
THOUSE DAIRNING VICIN	, , \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Fyidona - Mariffle	(m) Mean Water Depth (cm)
% Riffle Evidence of eroding banks, Cor	mments on bank stability — — % Run — — % Flat
	- Colonity
Substrate (% cover)	
	Calli
Boulder	CobbleO SandO SiltMuck GravelO ClayMarl Date:
	Gravel Clay Marl Detritus
In-water Cover	octificas
Cover Types Present (circle):	Undercut Banks Deep Pool Watercress Aquatic Ved
Overnanging Vegetation Wo	Ondercut Banks Deep Pool Watercress Aquatic Veg
Riparian Zone	Boulder Other
Riparian Cover (% of waters	
- watercours	e shaded, dominant vegetation, mature or early successional)
Adjacent Land Use	ariaded, dominant vegetation, mature or early successional)
- Corn &	Call
	500
Fish Habitat Potential	
Critical Habitat (spawning or nurs	ery areas, groundwater upwellings)
- Patent	ery areas, groundwater upwellings)
Migratory Obstructions (seasonal,	permanent)
(**************************************	Jis 4 - Caa Cana
Note any fish observations	- Star ora
	dry-Seasona
Waterbody Notes	
Natural Watersource	
Surficial Drainage (i.e. fram	ezoidal Channel Grassed Swale Buried Tile
	ezoidal Channel Grassed Swale Buried Tile Dugout Pond Dominated by Aquatic Veg Dry
Other Habitat Notes Incident	Dry Dry
	Vildlife Observations, etc.
ield Notes Authored by K clayton	
/:\resource\Internal Info and Tooms\A	Field Notes QA/QCed by M E
ON VOUCHUREUMENTAL INTO ANA T	

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc





Station #	Project Name No Project # 1609 Field Staff	58269	4
Date June 2/12 Weather conditions in previous 24 hrs GPS Coordinates (Zone) 17T E 62196 Descriptive Location 644 64 CONEY		766657 al Rd 2	Datum Nad 83
•	Conductivity Air Temperature (°C)	(μ S/cm) 32°C	
Watercourse Dimensions & Morphology Mean Watercourse Width		_% Run	_(cm) _(cm) % Flat
Evidence of eroding banks, Comments on bank sta	bility <u>stable</u>	banks-	Annual contract of the contrac
Substrate (% cover)BedrockCobble BoulderGravel	Sand Clay	Silt_ Marl	Muck Detritus
In-water Cover Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris	s Deep Pool	Watercress	Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, dominant	it vegetation, mature o	or early success	sional)
Aujacent Land Use	typha, early		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds	vater upwellings)		
Migratory Obstructions (seasonal, permanent)			***************************************
Note any fish observations			
Waterbody Notes Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observat	Dominated by	Aquatic Veg_	d dominated
Field Notes Authored by K Clay Field Notes Q	A/QCed by ME		



REA

Station #47-)	Project Name	iagara Wi	nd
Watercourse Name unkna	\mathcal{M}	Project #	959269	
Photos Date June 31/12		Field Staff	eeno V. Ca	utan.
		Time <u> </u>		
Weather conditions in previous	24 hrs	numid		
GPS Coordinates (Zone)	T E 62-265	S N 2	1766478. D	atum Nad 83
Descriptive Location Of	to+ Kegiane	1 Rdao, E	0+47-1	
Water Quality - dnu				
Dissolved Oxygen (mg/L)		Conductivi	ty (μS/cm)	
Water Temperature (°C)		Air Temperature (°C)_3 <u>2°C</u>	
Time in situ measurements tak	en			
Watercourse Dimensions & M	- · · · · · · · · · · · · · · · · · · ·			
Mean Watercourse Width		Maximum Pool Dep	th(cr	m)
Mean Bankfull Width % Riffle	(PM) N	Mean Water Depth_	(cr	n)
	——————————————————————————————————————	*1*,	% Run`	% Flat
Evidence of eroding banks, Con	mments on bank stab	ility		
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel	Clay		Nuck Detritus
In-water Cover		7		Typha
	Lindorout Donle			
Cover Types Present (circle): Overhanging Vegetation W	Undercut Banks	Deep Pool	Watercress (Aquatic Veg
The second control of	cody Debils	Soulder Other		
Riparian Zone				
Riparian Cover (% of watercours	se shaded, dominant	vegetation, mature	or early succession	al)
Adjacent Land Use	G, early		-	
Adjacent Land Ose	tral, Kon	16		
		21500		
Fish Habitat Potential		/		
Critical Habitat (spawning or nur	sery areas, groundwa	iter upwellings)		
Migratory Obstructions (seasona				
	, permanenty			
Note any fish observations				
Waterbody Notes				
Natural Watercourse	anna airle I Ol	_		
Natural Watercourse Tra	ipezoidal Channel	Grassed Sv	vale Burie	d Tile
Surficial Drainage (i.e. furrows)_	Dugout Pond	Dominated by	Aquatic Veg	Dry
Other Habitat Notes, Incidental	l Wildlife Observatio	ne etc		
-,		,		
Y A. I.				
Field Notes Authored by K Clay	Field Notes QA/0	,		
W:\resource\Internal Info and Teams\Aquatic	Resources\Field Sheets\Stan	tec\Form 02 Wind Farm W	aterbody Rapid Assessmer	nt Form.doc





1112	
Station #	Project Name Niagara Wind
Watercourse Name unknown	Project # 160950269
Photos Date June 2/12	Field Staff J. Yeen O. K. Clarton
Date June 27/2.	Time\S : 30
Weather conditions in previous 24 hrs	
GPS Coordinates (Zone) TE (0)	3014 N 4766498 Datum Nad 83
Descriptive Location _6++ of Regre	scal Road 20 East of 47-2
Water Quality	-Dvu
Dissolved Oxygen (mg/L) p	H Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	/ in Temperature (C)
Watercourse Dimensions & Morphology	
Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth (cm)
% Riffle	- Pool
Evidence of eroding banks, Comments on ban	ık stability
Substrate (% cover)	
	SandSiltMuck
BoulderGravel	SandSiltMuck ClayMarl Detritus
In-water Cover	ClayMarlDetritus
Cover Types Present (circle): Undercut	Hanks Deen Pool Wetersteen
Overhanging Vegetation Woody Debris	Boulder Othersed
Riparian Zone	
Riparian Cover (% of watercourse shaded, don	ninant vegetation, mature or early successional)
- We, Hora town	
- tarmland, Roa	$\frac{d}{d}$
Figh Makitas Burnary	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, gro	undwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes on such sale	
Natural Watercourse Transpoidal Chan	nel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows)	Grassed Swale Buried Tile
Dugout P	Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obse	ervations, etc
,	
/ /	
Field Notes Authored by Kaytar Field No	otes QA/QCed by ME

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



Field Notes Authored by _

WIND FARM WATERBODY RAPID ASSESSMENT FORM

61

	DY RAPID ASSESSMENT FORM	RET
Stantec	Defined or	s s o o d
Station # 48-1	Project Name Niagara Win	dE
Watercourse Name unknown	Project # 160478964	
Photos Su proto los Date June 12/12.	Field Staff ME, MF Time 10:3)	
Weather conditions in previous 24 hrs		,
GPS Coordinates (Zone) 171 E 062		um Nac
GPS Coordinates (Zone) 17 E 062 Descriptive Location 00 R.R.20 ~	Km east of R.R.27	9111 10100
Water Quality		
Dissolved Oxygen (mg/L)pH_		
Water Temperature (°6)	Air Temperature (°C) 28°	
Time in situ measurements taken		
Watercourse Dimensions & Morphology	Maximum Baal Baath	
Mean Watercourse Width / O (m) Mean Bankfull Width 2 O (m)	Maximum Pool Depth(cm) Mean Water Depth(cm)	
% Riffle % P) %F
Evidence of eroding banks, Comments on banks		/° '
Substrate (% cover)	/b o	
BedrockCobble Boulder/	<u> </u>	Muck
boulderGraver	Olay Mari	Detritu
In-water Cover	_	
Cover Types Present (circle): Undercut Ba	anks Deep Pool Watercress A	quatic Ve
Overhanging Vegetation Woody Debris	Boulder Other	
Riparian Zone		
Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature or early successiona	l)
2% matur free, red canan go	465	
Adjacent Land Use how fields		
house, roads, by ticlas.		
Fish Habitat Potential		
Critical Habitat (spawning or nursery areas, grour	ndwater upwellings)	
101.01	. 3,	
Migratory Obstructions (seasonal, permanent)		
Note any fish observations		
Waterbody Notes /		d <i>I</i> Tile
Waterbody Notes Natural Watercourse Trapezoidal Channe	el Grassed Swale Buried	
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Po	el Grassed Swale Buried ind Dominated by Aquatic Veg	Dry
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Po Other Habitat Notes, Incidental Wildlife Observ		
Natural Watercourse/_ Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Po		

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

Field Notes QA/QCed by ______

frattail/reed careins Modern feed caree grass 02 R. D. D.O.



R	$\in A$
N INH	+ imps
W/1 6	de Fines

Station #				1	
	Project	Name Niag	ara (1)	ind	
Watercourse Name unknow	Project	Name Niag	269		
Photos See Oh att DX	Field St	aff ME ME			
Photos Suchoto los Date June 22/12.	Time	09:52			
Weather conditions in previous 24				****	
GPS Coordinates (Zone) 171		N 4766	126	Datum	Nad
Descriptive Location () Silve		n north of			
Water Quality					
Dissolved Oxygen (mg/L)	pH	Conductivity (µS	/cm)		
Water Temperature (°C)	Air Tem	perature (°C)	2502		
Time in situ measurements taken_					
Watercourse Dimensions & Morp		Dool Dooth	10	(am) ***	e 01
Mean Watercourse Width 2.0	- ` '	ım Pool Depth		(cm) </td <td>0</td>	0
Mean Bankfull Width	_(m)	Vater Depth	Run	(CIII)	% F
% Riffle Evidence of eroding banks, Comm		none well			/0 1
Evidence of eroding banks, Comm	TILS OF DATIK STADILLY				
Substrate (% cover)		41:0		30	
Bedrock		Sand <i>40</i>	Silt		Muck
Boulder	Gravel30	Clay	Marl		Detritu
Overhanging Vegetation Wood	y Debris Boulde	Other			
Riparian Zone Riparian Cover (% of watercourse	haded, dominant vegeta	ation, mature or e	arly success	ional)	
Riparian Cover (% of watercourse	haded, dominant vegeta	ation, mature or e	arly success	ional)	
Riparian Cover (% of watercourse Who muture have head for Adjacent Land Use	haded, dominant vegeta	ation, mature or ea	arly success	ional)	
Riparian Cover (% of watercourse 2/4 Mutun Fres new Man Adjacent Land Use 94 Mad 5 house 1 d 5	haded, dominant vegeta	ation, mature or ea	arly success	ional)	
Riparian Cover (% of watercourse What was how	y areas, groundwater up		arly success	ional)	
Riparian Cover (% of watercourse 20 Mutur Fres read for Adjacent Land Use ac Fields, house, ads. Fish Habitat Potential Critical Habitat (spawning or nurse	y areas, groundwater up		arly success	ional)	
Riparian Cover (% of watercourse 21/2 Mutun Fres new May Adjacent Land Use a Chidds house 1 ds Fish Habitat Potential Critical Habitat (spawning or nurse 1055 De Spawn Migratory Obstructions (seasonal)	y areas, groundwater up	owellings)		ional)	
Riparian Cover (% of watercourse What was read to house as the state of the state	y areas, groundwater up	owellings)		ional)	

Field Notes QA/QCed by MEE



Station # 50 -	Project Name	laara hin	1	
Watercourse Name_W/V/A/M Photos	Project #			
Date Owne 20/12	Field Staff	HON J.V	2010	
	Time(0:075			
Weather conditions in previous 24 hrs	<u>ahumid</u>			
GPS Coordinates (Zone) 62 1891 E 470	07594 N	D	atum ///	
Descriptive Location Runs north	E of 50-2 19	Legional G	2 d a b c	
Water Quality				
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)		
Water Temperature (°C)	Air Temperature (°C)	33		
Time in situ measurements taken				
Watercourse Dimensions & Morphology				
Mean Watercourse Width (m)	Maximum Pool Depth_	(cı	m)	
Mean Bankfull Width(m)	Mean Water Depth	(CI		
% Riffle%	² 00l o	% Run	, % Fla	
Evidence of eroding banks, Comments on bank	stability		70 1 IQ	
Substrate (% cover)				
BedrockCobble				
Boulder Gravel		Silt	Muck	
Graver	Clay	Mari	Detritus	
In-water Cover				
Cover Types Present (circle): Undercut B	anks Deep Pool W	/atercress	Acuatia Man	
Overhanging Vegetation Woody Debris	Boulder Other	ratercress /	Aquatic Veg	
Riparian Zone Riparian Cover (% of watercourse shaded, dominated Adjacent Land Use	nant vegetation, mature or e	early succession	al)	
Road farmlan				
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ndwater upwellings)	,		
Migratory Obstructions (seasonal, permanent)				
Note any fish observations	my			
Total any high observations	· ·			
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Po	el Grassed Swale	Burie	d Tile	
Other Habitat Notes, Incidental Wildlife Observ			,	
Field Notes Authored by Kalauta Field Notes	a QA/QCed by			
3:\01609\resource\Internal Info and Teams\Aquatic Resources\Field	Sheets\Stantec\Form 02 WInd Farm V	– Vaterbody Rapid Asses	ssment Form.doc	



Un	nanto	red	CH	rek
	40	Cu	IR	-17

Station #_ 50-2				1	
Watercourse Name Why	70	Project Name ///	deaca (vino	グ	
Photos	TULY .	Project #			
Date une 30	TIS	Field Staff 12.01	auton J. K	eme	
Weather conditions in previou		Time			
GPS Coordinates (7ans)		+ d humid			
GPS Coordinates (Zone)	1065 E 4767	860 N		Datum	Nad
Descriptive Location	of pegiano	41 Pd 20, C	£ 50-1,0	Offor	1 2/1007
Water Quality					
Dissolved Oxygen (mg/L)	/ กน	0			
Water Temperature (°C)		Conductivit	y (μS/cm)		
Time in situ measurements tal		Air Temperature (°C			
Watercourse Dimensions &	Morphology	,			
Mean Watercourse Width	(m)	Maximum Bool Dom	1		
Mean Watercourse Width Mean Bankfull Width	(m)	Maximum Pool Dept	ın	_(cm)	
% Hillie	% P 60	Mean Water Depth_	0/ 5	(cm)	
Evidence of eroding banks, Co	mments on bank sta	olability	% Run		_% Fla
Code Acad (0)					
Substrate (% cover)	The state of the s				
Bedrock		Sand	Silt	3.4	luck
Boulder	Gravel	Clay	Marl		etritus
In-water Cover					ountas
Cover Types Present (circle):	Undercut Ren	ko Dara Di	•••		
Overhanging Vegetation W	Joody Debrie			Aquatio	: Veg
	Joody Doblis	boulder Other_			
Riparian Zone					
Riparian Cover (% of watercoul	se shaded, dominar	nt vegetation, mature o	or early success	sional)	
Adjacent Land Use					
<u>fa</u>	roland				
Fish Habitat Potential					
Critical Habitat (spawning or nu	'Serv areas, groundy	vater unwollings)			
		vater upweilings)			
Migratory Obstructions (seasona	il, permanent)	<u> </u>			
lote any fish observations	and char	MOT			
Vaterbody Notes					
latural Watercourse Tra	nezoidal Channal				
latural Watercourse Tra urficial Drainage (i.e. furrows)	thezoldal Channel	Grassed Swa	ale B	uried Tile	
urficial Drainage (i.e. furrows)	Dugout Pond_	Dominated by	Aquatic Veg	Dry	
ther Habitat Notes, Incidental	Wildlife Observati	ons etc			
		, 0.0.			
old Notes Authored by K. Claut					
HU INDIES Authored by L. (1011)	A Field Notes OA	VOCed by			

G:\01609\resource\internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



	OUT RAPID ASSE		V1
Stantec			
Station # 51-51 mil.			4
Station #	Project Name	Viagara L	lind
Photos	Project #(o	0958269	
Date June 2/12.	Field Staff	iene k cla	1 stores
Weather conditions in	Time15 :	52	
Weather conditions in previous 24 hrs			
GPS Coordinates (Zone) 17 E 62 Descriptive Location 0 f of		4768690	Datum Mad
Descriptive Location	Regional Ro		30.01111000
Water Quality	nowater		
Dissolved Oxygen (mg/L)pH			
Water Temperature (°C)	Conducti	vity (μS/cm)	
Time in situ measurements taken	Conducti Air Temperature (°C)_ <u> 33°C</u> _	
Watercourse Dimensions & Morphology			
Mean Watercourse Width(m) Mean Bankfull Width(m)	Maximum Pool De	epth	(cm)
0/ D:#I-	weap water Depti		(cm)
% Riffle% F	Pool /	9/ Dun	(CIII) % FI
Evidence of eroding banks, Comments on bank	stability		
Substrate (% cover)			
n - 1 · .			
5	Sand	Silt	Muck
	Clay	Mari	Detritus
n-water Cover			
Cover Types Present (circle): Undercut B	anks Deep Pool	Materia	
Overhanging Vegetation Woody Debris	Boulder Othe		Aquatic Veg
Riparian Zone		۶۱	
Riparian Cover (% of watersource at the state of the stat			
Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature	or early succession	nal)
idjacent Land Use	41		
Soy, Road,	Caraci		
<i>f. t</i>	Forest		
ish Habitat Potential			
ritical Habitat (spawning or nursery areas, groun	dwater unwelling		
ligratory Obstructions (seasonal, permanent)			
and			
CATE			
ote any fish observations			
ote any fish observations			
ote any fish observations			
aterbody Notes atural Watercourse Transpoidal Channel			
aterbody Notes atural Watercourse Transpoidal Channel		wale Buri	ed Tile
aterbody Notes atural Watercourse Trapezoidal Channel urficial Drainage (i.e. furrows) Dugout Pon	nd Dominated b	y Aquatic Veg 1	ed Tile
aterbody Notes atural Watercourse Transpoidal Channel	nd Dominated b	waleBuri y Aquatic Veg	_





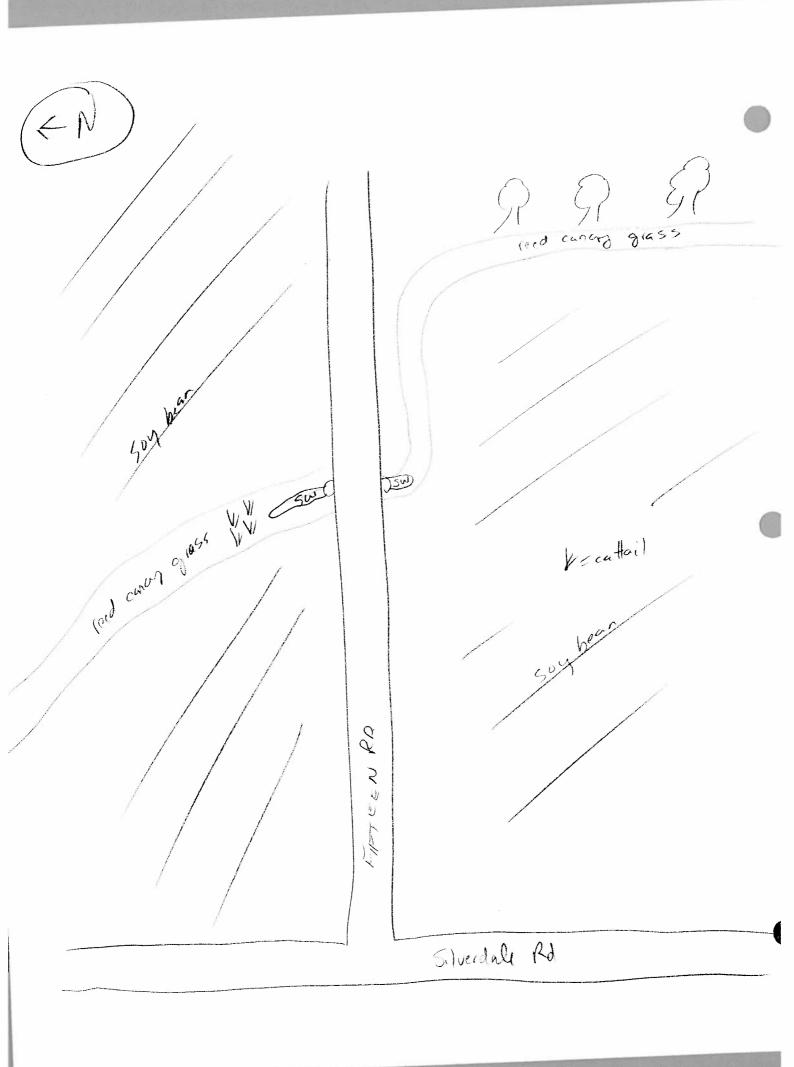
Stanted

Station # 52-1	Project Name Niagara Wind
Watercourse Name unknown Photos	Project # 160958269
Date June 2/12	ried Star 1. 1/00 Me & Clarite
Weather conditions in any in a state of the	Time(6:03
Weather conditions in previous 24 hrs	ofthumid.
GPS Coordinates (Zone)	2011 N 4769771 Datum Nad 8=
Descriptive Location of Pegio	nal Rd 569, near intersection of
Water Quality	
Dissolved Oxygen (mg/L) DH	823 Conductivity (u.S/cm) 1/65
Time in situ measurements taken 16:0	823 Conductivity (µS/cm) 1165 Air Temperature (°C) 32°C+
watercourse Dimensions & Morphology	
Mean Watercourse Width $Q_{ij} \sim (m)$	Maximum Pool Depth 0.15 (cm)
0/ 0/11)	Mean Water Depth (cm)
	Pool 100 % Bun % Flat
Evidence of eroding banks, Comments on bank	stability stable - regelated
Substrate (% cover)	
BedrockCobble	/SandSiltMuck
BoulderGravel	Class
In-water Cover	
Cover Types Present (circle):	anks Deep Pool Watercress Aquatic Voq
Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris	Boulder Other age Aquatic Veg
Riparian Zone	
Riparian Cover (% of watercourse shaded domin	ant vegetation, mature or early successional)
Adjacent Land Llee	arry
farmland	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, groun	dwater upwellings)
	reen, foraging
3 mary about dottoris (seasonal, permanent)	1 almost
Note any fish observations	- Call be any by end of rummi
Vaterbody Notes	
Natural Watercourse Trapezoidal Channel	Granded Courts
Surficial Drainage (i.e. furrows) Dugout Pon	Grassed Swale Buried Tile d Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	ations, etc. Turbid water
V 00 1	
ield Notes Authored by K. Clayton Field Notes	QA/QCed by VATE

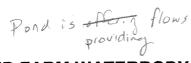


non	REA	South	~
/FNT E		# RA	A

,	Station # 54-1	on by
1		Project Name N. I. Van and H. Van A.
	Watercourse Name unknown	Project Name Viagara Wind
i	Photos Su photo los	Project #
	Date	Time
١	Weather conditions in previous 24 hrs	Time 69:34
•	GF3 Cooldinates (Zone)	0601011
[1000 minutes and a second	~ 300 m east of Silverdale Rd
1	Water Quality	
2 [Dissolved Oxygen (mg/L)	nH Complexity (c)
٧	Water Temperature (°C)	pH Conductivity (μS/cm) Air Temperature (°C) 2 4 / 2
7	and moderations taken	Air Temperature (°C)
V	Watercourse Dimensions & Morphology Mean Watercourse Width 0.6 (m)	in the second se
N		Maximum Pool Depth 0.20 (cm)
•••		Mean Water Depth 6.10 (cm)
Ē	Evidence of eroding banks, Comments on ba	% P001
_	banks, Comments on banks,	ink stability mod defin, minor scour
S	substrate (% cover)	1
	BedrockCobble_	
		Sand 40 Silt 30 Mars
C	Boulder Gravel	t Banks Deep Pool Watercress Aquatic V
C	Boulder Gravel	30 Clay Mari Detr
CO	Boulder Gravel Gravel n-water Cover over Types Present (circle): Undercut overhanging Vegetation Woody Debris iparian Zone	t Banks Deep Pool Watercress Aquatic V
CO RI Ri	Boulder Gravel G	t Banks Deep Pool Watercress Aquatic V
CO RI RI 2	Boulder Gravel n-water Cover over Types Present (circle): Undercut verhanging Vegetation Woody Debris iparian Zone iparian Cover (% of watercourse shaded, dor	t Banks Deep Pool Watercress Aquatic V
CO RI RI AC	Boulder Gravel G	t Banks Deep Pool Watercress Aquatic V
RI Ri Ac	Boulder Gravel Gravel Marker Cover Fover Types Present (circle): Undercut Everhanging Vegetation Woody Debris Iparian Zone iparian Cover (% of watercourse shaded, dor Start Concording Start C	t Banks Deep Pool Watercress Aquatic V
RI RI AC	Boulder Gravel Gravel Marker Cover Fover Types Present (circle): Undercut Everhanging Vegetation Woody Debris Iparian Zone Iparian Cover (% of watercourse shaded, dor Market Constant State S	Clay Marl Detr t Banks Deep Pool Watercress Aquatic V Boulder Other minant vegetation, mature or early successional)
CO RI RI Z	Boulder Gravel G	Clay Marl Detr t Banks Deep Pool Watercress Aquatic V Boulder Other minant vegetation, mature or early successional)
RI RI Ac	Boulder Gravel G	Clay Marl Detr t Banks Deep Pool Watercress Aquatic V Boulder Other minant vegetation, mature or early successional)
RI RI Ac	Boulder Gravel G	Clay Marl Detr t Banks Deep Pool Watercress Aquatic V Boulder Other minant vegetation, mature or early successional)
CO RIP	Boulder Gravel Gravel Marker Cover Fover Types Present (circle): Undercut Everhanging Vegetation Woody Debris Iparian Zone Iparian Cover (% of watercourse shaded, dor Market Constant State S	Clay Marl Detr t Banks Deep Pool Watercress Aquatic V Boulder Other minant vegetation, mature or early successional)







REA

Station #Watercourse Name_	UNVNa.		Projec	ot # 1/	09582	ra V		
Photos See A	to lox				OF ME			
Photos See oho Date June 3	2/12:			08:				
Weather conditions	in previous 24	hrs Minor						
GPS Coordinates (Z	one) 17T	E 062	7007	1	V 4768	151	Datur	n No
Descriptive Location	On Conc	cssion 4	~ 300	m eas	tof Be	arry 8	d.	
Water Quality				and control definition of				
Dissolved Oxygen (r	ma/L)	На	and the state of t	Condu	ctivity (µS/c	om)	N/Assessor	
Water Temperature	(°C)		Air Te	 emperatur	e (°C) ື ິ	300		
Time in situ measure								
Watercourse Dime				D	Danth		(
Mean Watercourse \							(cm)	
Mean Bankfull Width		(m)	mean	water De	eptne		(cm)	q
% Rif					% R			7
Evidence of eroding								
MINOR SCOUR							Suic =	/ O.
Substrate (% cover	r) ock	Cobble		Sand	413	Silt	10	Mu
Bedro	lor	Cobble	41	Clay	70	Om Marl		Na
In-water Cover Cover Types Preser Overhanging Vegeta	nt (circle):	Undercut Ba	anks	Deep Po		ercress		
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Biparian Cover (% o	nt (circle): ation Wood	Undercut Bady Debris	anks Bould	Deep Poler (ool Wat Otherature or ear	ercress	Aqı Ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% o	nt (circle): ntion Wood watercourse:	Undercut Bady Debris	anks Bould	Deep Poler (ool Wat Otherature or ear	ercress	Aqı Ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% o	nt (circle): ntion Wood watercourse:	Undercut Bady Debris shaded, domin	anks Bould nant vege shrub	Deep Poler (etation, ma	ool Wate Otherature or ear	ercress	Aqı Ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% o	nt (circle): ntion Wood watercourse:	Undercut Bady Debris shaded, domin	anks Bould nant vege shrub	Deep Poler (etation, ma	ool Wate Otherature or ear	ercress	Aqı Ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% o 70% matvo Adjacent Land Use Fish Habitat Potent	of watercourse: fields, ra	Undercut Bady Debris shaded, domin	anks Bould nant vege shrub	Deep Poler (ool Wat Otherature or ear	ercress	Aqı Ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% or 70% mature Adjacent Land Use House a general Critical Habitat (span)	nt (circle): ntion Wood of watercourse: fillds, ra tial wning or nurse	Undercut Bady Debris shaded, domin	anks Bould nant vege shrub	Deep Poler (ool Wat Otherature or ear	ercress	Aqı Ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% or 70% mature Adjacent Land Use House a general Critical Habitat (span)	nt (circle): ntion Wood of watercourse: fillds, ra tial wning or nurse	Undercut Bady Debris shaded, domin	anks Bould nant vege shrub	Deep Poler (ool Wat Otherature or ear	ercress	Aqı Ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of the cover) Adjacent Land Use House Against Potent Critical Habitat (span) Migratory Obstruction	fields, ranning or nursel	Undercut Bady Debris shaded, domin	anks Bould nant vege s hr Uh	Deep Poler (ool Wate Otherature or ear	ercress	ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of the cover) Adjacent Land Use House Against Potent Critical Habitat (span) Migratory Obstruction	fields, ranning or nursel	Undercut Bady Debris shaded, domin	anks Bould nant vege s hr Uh	Deep Poler (ool Wate Otherature or ear	ercress	ssional)	uatic
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% or 70% mature Adjacent Land Use House a general Critical Habitat (span)	fields, ranning or nursel	Undercut Bady Debris shaded, domin	anks Bould nant vege s hr Uh	Deep Poler (ool Wate Otherature or ear	ercress	ssional)	uatic
Riparian Zone Riparian Cover (% o TO // Matvo Adjacent Land Use Fish Habitat Potent Critical Habitat (span Migratory Obstruction Note any fish observ	fields, rations (seasonal, partions	Undercut Bady Debris shaded, domin	anks Bould nant vege shrub	Deep Poler (ool Wate Otherature or ear	ercress	ssional) an KS	uatic .
Riparian Zone Riparian Cover (% o TO // Matvo Adjacent Land Use Fish Habitat Potent Critical Habitat (span Migratory Obstruction Note any fish observ	fields, rations (seasonal, partions	Undercut Bady Debris shaded, domin	anks Bould nant vege shrub	Deep Poler (ool Wate Otherature or ear	ercress	ssional) an KS	uatic .
In-water Cover Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% or Follow Matter Adjacent Land Use House, as Fish Habitat Potent Critical Habitat (span Migratory Obstruction Diffes up Note any fish observer.	fields, rations (seasonal, partions	Undercut Bady Debris shaded, domin	anks Bould nant vege shrub	Deep Poler (ool Wate Otherature or ear	ercress	ssional) an KS	uatic .
Riparian Zone Riparian Cover (% or 70% mature) Adjacent Land Use House Adjacent Land Use Migratory Obstruction Differ Solve Speed Waterbody Notes Natural Watercourse Surficial Drainage (i.	tial wring or nurser wations rations rations rations rations rations s, Incidental V	undercut Bady Debris shaded, doming the state of the stat	anks Bould nant vege shrub ndwater	Deep Poler (sed Swale_ated by Aqu	ercress	ssional) an KS	Tile_
Riparian Zone Riparian Cover (% o Riparian Cov	tial wring or nurser wations rations rations rations rations rations s, Incidental V	undercut Bady Debris shaded, doming the state of the stat	anks Bould nant vege shrub ndwater	Deep Poler (sed Swale_ated by Aqu	ercress	ssional) an KS	Tile_

Vicatta. 1 /read careng 3 Beamer Rd ~ 800~ WOODOT FLOND 0 HEDGERON MODDLOT



Station #55-2	Project Name Niagara Wind
Watercourse Name unknown	Project # 160950269
	Field Staff ME, ME
Photos Soo Photo 15g Date June 22/12.	Time
Weather conditions in previous 24 hrs	INDE PREIP.
GPS Coordinates (Zone) 17T E	0625497 N 4768055 Datum Nad 8
Descriptive Location On Con4 ~ (00 m west of Beamer Road
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	pHConductivity (μS/cm) Air Temperature (°C)3 ° ∠
Watercourse Dimensions & Morphology Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Bankfull Width(m)	Mean Water Depth(cm)% Pool% Run% Flat
Evidence of eroding banks, Comments on	bank stability MMOC SCOUR.
50% north side 0% 50 th	side be matrictices:
Substrate (% cover)	
Bedrock Cobbl	e Sand 50 Silt /6 Muck
Boulder Grave	e Sand SD Silt /6 Muck
Overhanging Vegetation Woody Debris Riparian Zone	dominant vegetation, mature or early successional)
Adjacent Land Lles	0% South side through freld
Adjacent Land Use	
Fish Habitat Potential Critical Habitat (spawning or nursery areas,	, , ,
Migratory Obstructions (seasonal, permane	ent)
Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal C Surficial Drainage (i.e. furrows) Dugo	Channel Grassed Swale Buried Tile but Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife C	Observations, etc
Field Notes Authored by F	ield Notes QA/QCed by

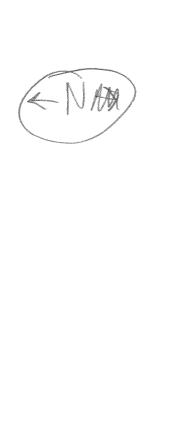
myedodor Reed carry glass Silve idule Rd Beamy



WIND FARM WATERBODY RAPID ASSESSMENT FORM

Tellestimate No defin @ either culturate end.

Station # 56-1	Project Name Nia	aama la)iy	$\sim d$
Watercourse Name UnVng D	Project #1609S	2269	
Photos See photo los Date June 21/12.	Field Staff M	MF	
Date June 21/12.	Time 15:14		
Weather conditions in previous 24 hrs N o ro	in - hot + humid		
GPS Coordinates (Zone) 17 E 0623	2139 N 4	768199 Da	itum Nad 83
Descriptive Location On Concession 4	~ 500 m east	- of Hodgki	ng Rd.
Water Quality			
	Conductivity (uS/cm)	
Water Temperature (°C)	Air Temperature (°C)	31%	
Time in situ measurements taken	/ iii Tomporatare (O) _		
Watercourse Dimensions & Morphology			
Mean Watercourse Width (m)	Maximum Pool Depth_	(çr	n)
Mean Bankfull Width (m)	Mean Water Depth	(cr	•
% Riffle % Poo		% Run	% Flat
Evidence of eroding banks, Comments on bank sta	ability		
Substrate (% cover)			
	Sand	Cit	
Boulder Gravel	Sand Clay	Silt	Muck
In-water Cover	Clay	Marl	Detritus
Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris Riparian Zone	ks Deep Pool V Boulder Other	Vatercress /	Aquatic Veg
Riparian Cover (% of watercourse shaded, dominal	nt vegetation, mature or	early succession	al)
Adjacent Land Use			
Fish Habitat Potential			
Critical Habitat (spawning or nursery areas, ground	water upwellings)		
Migratory Obstructions (seasonal, permanent)			
ote any fish observations			
Manage of the Name			
Waterbody Notes			
Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swa	le Burie	ed Tile
Dugout Pond	Dominated by A	quatic Veg	. Dry <u>⊬</u>
Other Habitat Notes, Incidental Wildlife Observat	tions, etc. <u>bobotin</u>	•	
Field Notes Authored by Field Notes C	AAQCed by		





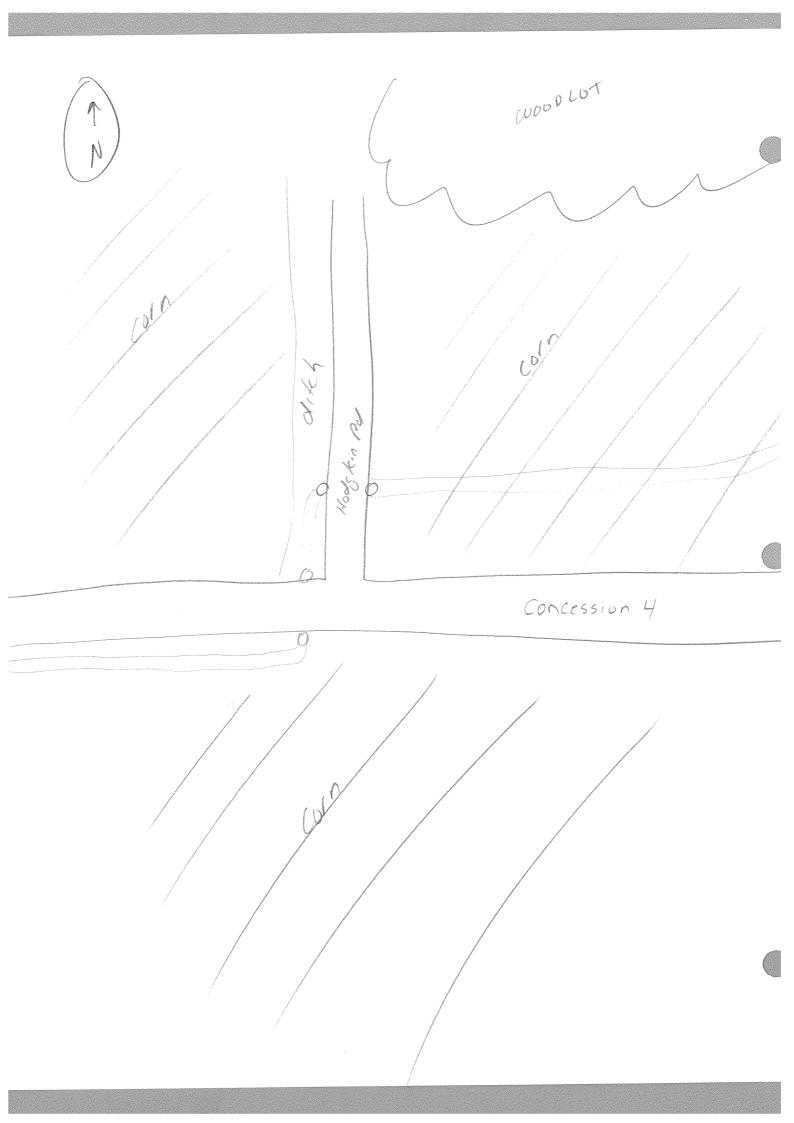
manifed s

R

Hodgkins L1 ~ 500



WIND FARM WATERBODY RAPID	
Date	Name Niagara Wind DRI #_ 160950269 aff MEIME 15:23 N 4768237 Datum Nad 83
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	Conductivity (µS/cm)perature (°C)
Mean Bankfull Width(m) Mean W	m Pool Depth(cm) /ater Depth(cm)% Run% Flat
Boulder Gravel Gravel In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Boulder	Sand Silt Muck Clay Mari Detritus Deep Pool Watercress Aquatic Veg Other
Fish Habitat Potential	
Oritical Habitat (spawning or nursery areas, groundwater up digratory Obstructions (seasonal, permanent) Note any fish observations	wellings)
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observations, et	
Field Notes Authored by Field Notes QA/QCed by	, met



* Check To Katie + Joe notes.



WIND FARM WATERBODY RAPID ASSESSMENT FORM

NON-RET DRY

Station # 56- % 3	Project Name Niagara Wind
Watercourse Name unknow	Project # 160950269
Photos See Man 100	Field Staff ME, ME
Date June 21/12.	Time 13:40
Weather conditions in previous 24 hrs N อ เฉเ	<u> </u>
GPS Coordinates (Zone) 17T E 062つ	1688 N47688178 Datum Nad8
Descriptive Location On Concession 4 ~ 70,	n east of Hodgkins Rd.
Water Quality	
	Conductivity (v.S/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	Air Temperature (°C)
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	Maximum Pool Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth (cm)
% Poo	% Run % Flat
Evidence of eroding banks, Comments on bank sta	bility
Substrate (% cover)	
BedrockCobble	SandSilt Muck
Boulder Gravel	Clay Marl Detritus
In-water Cover	
Cover Types Present (circle): Undercut Bank	O Door Book Waters A N
Overhanging Vegetation Woody Debris	ks Deep Pool Watercress Aquatic Veg Boulder Other
	Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominar	nt vegetation, mature or early successional)
Adjacent Land Use	
_ OS Frolds	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, grounds	vater upwellings)
1300-L	
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
vi o 4	
More	
Waterbody Notes	
Natural Watercourse Trapezoidal Channel	Grassed Swale Ruried Tile
Surficial Drainage (i.e. furrows) V Dugout Pond	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
	ions, etc. Bobolink
Field Notes Authored by YV E	
Field Notes Authored by MF	
W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\St	antec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

56-3 NOW PEA REA- Previously sensed Con 4 Ted veg. Minimal defin

CRINN: Well mix of Aquatic veg + Terr veg. Defined through dredging. Hormes: Ag Rold, Danka + havesked, drives through it



WIND FARM WATERBODY RAPID ASSESSMENT FORM

REA	
-----	--

Station # See Watercourse Name Wixaur Project Name Nagara Wind Watercourse Name Wixaur Project # 16,095 269 Field Staff ME ME Time Weather conditions in previous 24 hrs See Project # 16,095 269 Weather conditions in previous 24 hrs See Project # 16,095 269 Weather conditions in previous 24 hrs See Project # 16,095 269 Water August Project Name Name Name Name Name Name Name Name		WIND FARIN	WATERBOD	I NAPID ASSI	-33WILIAT	1 OTTIVI	DR
Photos 300 Proh 160 P	Stantec						
Photos 30 Phone With Provided	Station #	36-4		Project Name	Nigga	ra Wind	. /
Photos 30 Phone With Provided	Station #s	Jame UNV NOUS		Project # 1/c	095020	09	
Date United Stricts Time United Stricts United St	Photos	or ohaha bo	<u>,</u>	Field Staff	MEIME		
Water Counting in previous 24 hrs Paragraph Paragr	Date Jur	e 21/12:		Time 16:	10		
GPS Coordinates (Zone) TT E DOAD ON 1178048 Datum NAC Descriptive Location	Moother cond	itiane in provious 2/	1 hre lie valu				
Descriptive Location Immediate South of Conductivity (µS/cm)	GPS Coording	ites (Zone) 177	" E	- 760 N	4768	098 Datu	<u>m Nad</u>
Water Quality Dissolved Oxygen (mg/L)	Descriptive Lo	cation Immedi	ath south	OP CONCESSIO	on 4 +	- west of	
Dissolved Oxygen (mg/L) Water Temperature (°C) Air Temperature (°C) Are Autor (cm)	Hodakin	Rd. on the are	SMY beober	44			·
Dissolved Oxygen (mg/L) pH Conductivity (µS/cm) Water/Temperature (°C) Air Temperature (°C) 31° 2 Trime in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width 2	Water Quality						
Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width			pH	Conduc	ctivity (µS/cn	n)	
Watercourse Dimensions & Morphology Mean Watercourse Width	Water Temper	rature (°C)		Air Temperature	e (°C) = 31	٥ د	
Watercourse Dimensions & Morphology Mean Watercourse Width	Time <i>in situ</i> m	easurements taken		•	` /		
Mean Watercourse Width (m)	11/-1	Dimensions & Mo	rnhology				
Mean Bankfull Width	Watercourse	Dimensions a Mo	(m)	Maximum Pool	Deoth /	(cm)	
Substrate (% cover) Bedrock Cobble Sand 40 Silt 30 Muck Boulder Gravel Clay Marl Detrite In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Very Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Silt 30 Muck Deep Pool Watercress Aquatic Very Overhanging Vegetation Woody Debris Boulder Other Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Other Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advantage (i.e. furrows)	Mean Rankful	Juise Width 2.5	(m)	Mean Water De	pth /	(cm)	
Substrate (% cover) Bedrock Cobble Sand 40 Silt 30 Muck Boulder Gravel 30 Clay Marl Detrite In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Very Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Migratory Obstructions (seasonal, permanent) Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Advanced Dominated by Aquatic Veg Dry Advanced Dominated Domin	Market Control of the	% Riffle	// % Poo	ol	<u>~</u> % Ru		
Substrate (% cover) Bedrock Cobble Sand 40 Silt 30 Muck Boulder Gravel 30 Clay Marl Detritt In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ve Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Mote any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry	Evidence of e	roding banks, Comr	ments on bank sta	ability <u>mine</u>	or under	cotting.	
Bedrock Gravel Sand Warl Detritude Boulder Gravel Sand Warl Detritude Boulder Gravel Sand Warl Detritude Boulder Gravel Some Clay Marl Detritude Boulder Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ve Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Adjacent Land Use Adjacent Land Use Migratory Obstructions (seasonal, permanent) Migratory Obstructions (seasonal, permanent) Advantable Waterbody Notes Natural Watercourse Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Dominated by Aquatic Veg Dry Dry Dry Dry Dry Dry Dry							
Bedrock Gravel Gravel Gravel Marl Detritude In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Very Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Officer	Substrate (%	cover)			/ 5		
In-water Cover Cover Types Present (circle):		_Bedrock	Cobble	Sand	40	Silt <i>3¤</i>	
In-water Cover Cover Types Present (circle):		_Boulder	Gravel	<u> 3 DClay</u>		Marl	Detritus
Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Very Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Critical Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry							
Overhanging Vegetation Woody Debris Boulder Other	Cover Types	Present (circle):	Undercut Bar	nks Deep Po	ool Wate	rcress Ad	quatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry_v	Overhanging '	Vegetation Wo	ody Debris	Boulder C	Other		•
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry_v		_	•				
Adjacent Land Use Adjacent Land	Riparian Zon	e (9) of watersours	a ahadad damini	ent vegetation ma	ature or early	, successiona	n
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile_ Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry_V	Hiparian Cove	r (% or watercourse	e Snaueu, uomina	ini vegetation, me	ature or carry	y 3uccessiona	''
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile_ Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry_V	Adjacent Land	1 Use					
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry/	as field,	house					
Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry/	,						
Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry/							
Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry/		it (spawning or nurs	ery areas, ground	awater upweilings	5)		
Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry/	Migratony Obs	tructione (caseonal	nermanent)				
Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry/	•	•					
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry_/		observations					
Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry/	•						
Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry/	344 - 4 - 4 - 4 - 4 - A			/			
Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry	Waterbody N	otes mource Tra	nozoidal Channe	Grass	ed Swale	Burie	d Tile
	Surficial Drain	vago (i o furrowe)	pezuluai Crianne Dugout Por	nd Domina	ited by Aqua	atic Vea	Dry \
Other Habitat Notes, Incidental Wildlife Observations, etc. 500 ke 50	Suriiciai Diaii	lage (i.e. lullows)	Dagoat i oi	<u> </u>	itou by rique		· <i>J</i>
	Other Habita	t Notes, Incidental	Wildlife Observ	ations, etc. ടഹ	Ke 50.		
	Julio Habita						

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

Field Notes Authored by ______

Color Hodo Kin Road Concession 4 子咖啡 Posside Non? NON-REA HOLMES PROP. CROWN PROP planted + horrested : swale

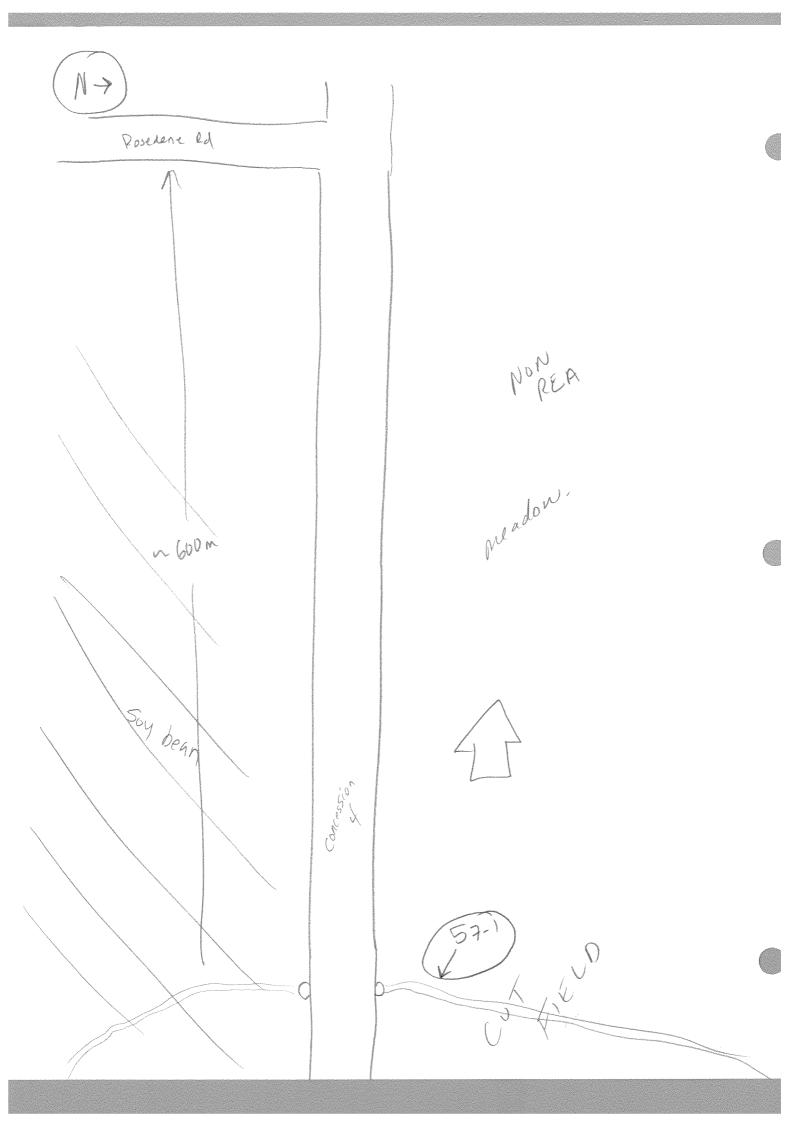




	WIND FARM	WATERBOI	DY RAPID ASSESS	SMENT FORM	
Stantec					ı
Photos Date Weather condi	tions in previous 24	thrs no (a)	Project Name Note Project # 1600 Field Staff ME Time 14 205	768285 Da	ntum Nad 83
Water Temper	gen (mg/L) ature (°C) easurements taken		Conductivi Air Temperature (°C	ty (μS/cm) C) 3) ° ∠	
Mean Waterco Mean Bankfull	\Width /	(m) (m) % F	· 001	oth(c (c %Run	m) m) % Flat
Substrate (%	cover) Bedrock Boulder	Cobble Gravel	SandClay	Silt_ Marl	Muck Detritus
In-water Cover Cover Types F Overhanging	e r Present (circle): Vegetation Wo	Undercut E ody Debris	Banks Deep Pool Boulder Othe	Watercress er	Aquatic Veg
Riparian Zone Riparian Cove	er (% of watercourse	e shaded, dom	inant vegetation, matur	e or early successio	nal)
Adjacent Land	1				
Fish Habitat Critical Habita	Potential t (spawning or nurs	sery areas, gro	undwater upwellings)		
Migratory Obs	structions (seasonal	I, permanent)			
Ni to provide	observations				

Other Habitat Notes, Incidental Wildlife Observations, etc.

Field Notes QA/QCed by ______ Field Notes Authored by





REA

~-	
V 3	ntec
~~~	

Station # 57 3  Watercourse Name unknown  Photos Date June 1/2  Weather conditions in previous 24 hrs No (accordinates (Zone) 171 E D629  Descriptive Location On Concession 4	477 N 4768259 Datum Nad 8
Water Temperature (°C) <u>84.30</u>	Conductivity (μS/cm) 15/7  Air Temperature (°C) 31°C
Watercourse Dimensions & Morphology Mean Watercourse Width 35 (m) Mean Bankfull Width 60 (m)% Riffle% Pool Evidence of eroding banks, Comments on bank states	Mean Water Depth/
Substrate (% cover)  Bedrock Cobble Boulder Gravel	Sand 50 Silt 30 Muck 20 Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris	
Riparian Zone Riparian Cover (% of watercourse shaded, dominar  2% (1864) (1865) (1865) (1865) (1865) Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, grounds	
Migratory Obstructions (seasonal, permanent)  AGE FINES.  Note any fish observations	
	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry tions, etc fro se
Field Notes Authored by MF Field Notes C	

Rosedine FL Standinowaki Concession y reed carry geist reed consequen

rend carridges has he was a series of the se

* = voisus agratic ved feed canary grass reed con grass



NT FORM	1	E	A	
Standing we openings on	ter	Q	<i>(</i> 0	luc/
openings on	19.			

5 A 2	- Linea a la linea
Station # 57.3	Project Name Niagara Wind
Waler Course Maine Vol Caluation	Project # 160950269
Photos So Ohoto Jos Date June 2/12	Field Staff ME, MF
Date June 2/12.	Time 14:24
Weather conditions in previous 24 hrs	029269 N 4767882 Datum Nad 83
GPS Coordinates (Zone) 171 E	1 1 300 called the Contession of
Descriptive Location On Kosedene K	d ~ 300m south of Concession 4
Water Quality Dissolved Oxygen (mg/L) 8 46 Water Temperature (°C) 23 18 Time in situ measurements taken 14	OH_ 6.02 Conductivity (μS/cm) L7 4
Watercourse Dimensions & Morphology Mean Watercourse Width <u> 分</u> の (m)	Maximum Pool Depth / (cm)  Mean Water Depth / (cm)  % Pool % Run % Flat
Mean Bankfull Width 4.0 (m)	Mean Water Deptn 7 (CIII)
% Riffle	ank stability MINON SCOUL
Substrate (% cover)	Sand 40 Silt 30 Muck Clay Marl Detritus
Boulder Gravel	30 Clay Marl Detritus
	eulvi t
Cover Types Present (circle): Underc	ut Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, d	dominant vegetation, mature or early successional)
WOODE ALLATINA ARAIN JOSEP	
Fish Habitat Potential Critical Habitat (spawning or nursery areas,	groundwater upwellings)
Migratory Obstructions (seasonal, permaner	
Note any fish observations	V .
Waterbody Notes Natural Watercourse Trapezoidal Cl Surficial Drainage (i.e. furrows) Dugo	hannel Grassed Swale Burjed Tile out Pond Dominated by Aquatic Veg Dry
	Observations, etc. And green frags
<u> </u>	
	ield Notes OA/QCed by WEE

DRY Ruse dence Red off Lind Conc. 4

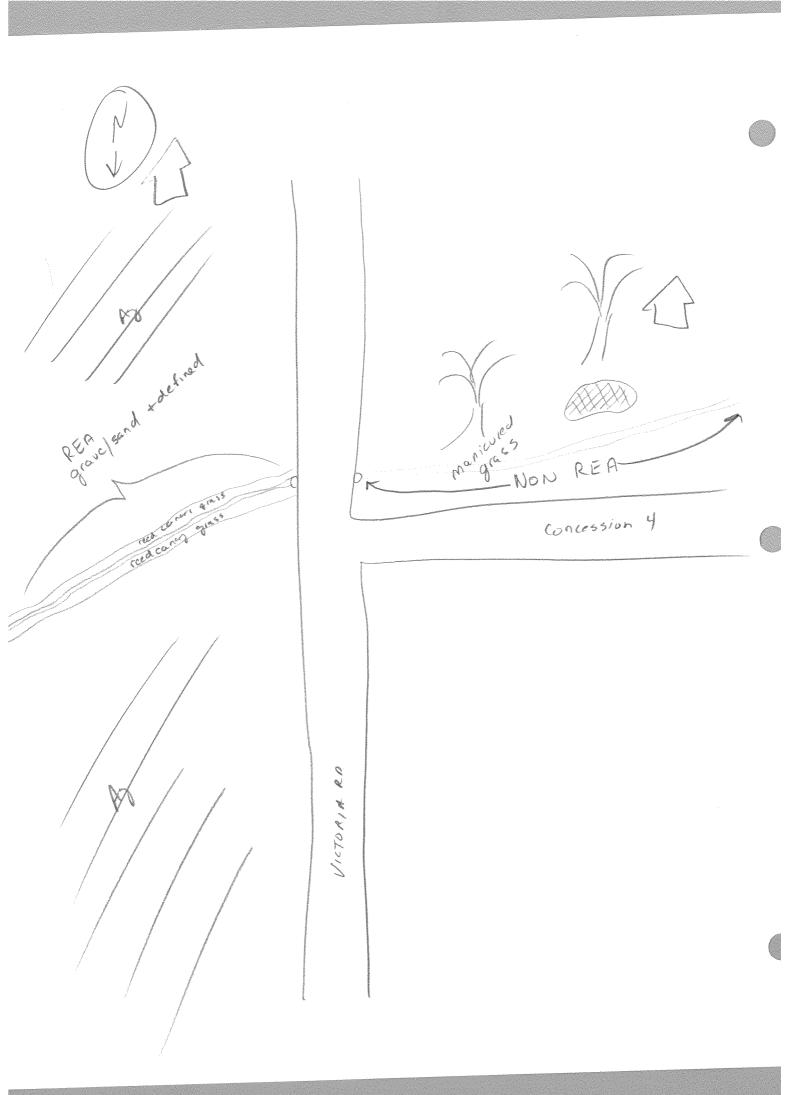


defined banks on

DRY

REA on ea side only.

40.	
Station # 9%-\	Project Name Niagara Wind
Watercourse Name UnVna.	Project # 14 - 26-12/ G
Photos See obate les	Project # 160958269
Photos See photo los Date June 2//12.	Field Staff MEIMF
Date	Time 13:30
Weather conditions in previous 24 hrs	precipitation
GPS Coordinates (Zone) 17T E 063	
Descriptive Location On Victoria Rd	~ Om south of Concession 4
Water Quality	
Dissolved Oxygen (mg/L)	
Water Temperature (°C)	Air Temperature (°C) 31°C
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width 0.5 (m)	
Mean Bankfull Width 1,0 (m)	Maximum Pool Depth(cm)
	Mean Water Depth (cm)
% Riffle %	Pool% Run% Flat
Evidence of eroding banks, Comments on bank	estability minor under cut banks - define
Substrate (% cover)	
BedrockCobble	10 0 1 77
	70 Sand 20 Silt 20 Muck 20 Clay Marl /0 Detritus
Boulder2oGravel	20 Clay Marl /O Detritus
In-water Cover	- red ca
Cover Types Present (circle): Undercut E	
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Binarian Cover /% of watercourse sheded dem	In and the selection of
Riparian Cover (% of watercourse shaded, dom	mant vegetation, mature or early successional)
Adjacent Land Use	
Adjacent Land Ose	
as folds, id, house.	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, grou	ındwater upwellings)
Minde	
Migratory Obstructions (seasonal, permanent)	
Moto duction of a second	
Note any fish observations	
Waterbody Notes /	
Natural Watercourse	
Surficial Projects (is 1	el Grassed Swale Burjed Tile
Surficial Drainage (i.e. furrows) Dugout Po	ond Dominated by Aquatic Veg V Dry V
Outron Halifacture at the commencer	Grassed Swale Burjed Tile ond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obser	vations, etc
100 K	
ield Notes Authored by Field Not	es QA/QCed by



FSEM - IS MILE CHERC



#### WIND FARM WATERBODY RAPID ASSESSMENT FORM

NON

Station # <u>59 -  </u>		Project Name	agara Wir	~d
Watercourse Name unkna		Project # 1600	SO SULE A	
Photos Date June 20/10		Field Staff Move	Eniella VI.	TENETAL
		Time		
Weather conditions in previous 2	24 hrs	numa		
GPS Coordinates (Zone) 63 116	9 E 47700	90 N	ח	atum 77
Descriptive Location	of Victoria	x Avenue, N	of Kima	
Water Quality		) -		7 1000
Dissolved Oxygen (mg/L)	nH	Condinativity	( O (	
Water Temperature (°C)	PII	Conductivity	(μS/cm)	
Time in situ measurements taker		Air Temperature (°C)	_5_2	
Watercourse Dimensions & Mo	prphology			<del></del>
Mean Watercourse Width	(m) /	Maximum Pool Depth	(0)	m)
Mean Bankfull Width	(m)	Mean Water Depth	(C)	m)
	% Poo	l	_% Run(Ci	''') % Flat
Evidence of eroding banks, Comi	ments on bank sta	hiliby		% Fiai
Substrate (% cover)		and the second s		
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel	Clay	Mari	Detritus
In-water Cover				200
	I Indones A Deal			
Cover Types Present (circle):	Undercut Bank	(S Deep Pool	Watercress (	Aquatic Veg
Overhanging Vegetation Woo	ouy Debns	Boulder Other_		
Riparian Zone				
Riparian Cover (% of watercourse	shaded, dominar	nt vegetation, mature o	r early succession	al)
	a arasce	s, early		,
Adjacent Land Use	1 0			
Irans	mission	ine, farmly	and	
and . 1 . 1 . 1 . 1				
Fish Habitat Potential				
Critical Habitat (spawning or nurse	ery areas, groundy	vater upwellings)		
Migratory Obstructions (seasonal,	normanont)			
Note any fish observations				
	-			
Waterbody Notes				
	ozoidal Channel	0		
Natural Watercourse Trap	Purcha Donal	Grassed Swa	ale Burie	ed Tile
Surficial Drainage (i.e. furrows)	Dugout Pona_	Dominated by	Aquatic Veg	_ Dry
Other Habitat Notes Incidental V	Nildlifa Obsanisti	iono ete		
Other Habitat Notes, Incidental \	Wilding Observati	ons, etc.		
Field Notes Authored by M. Faiella	Elald Notes C	Manual M		
THE TOUR PROPERTY AND THE PARTY AND THE PART	_ rieid Notes Q/	•vuced by	-	



Non

Station #59-2		Project Name	م است	
Watercourse Name unknow		Project Name		TICA
Photos		Field Staff	160950	The state of the s
Date			6:39	lend
Weather conditions in previous 24 h	rs	it dhuma		
GPS Coordinates (Zone) 631185				Datum 17T
Descriptive Location Off of	- Victoria	Avenue, 1	Nest of Vila	an Rodo
	South Of	- 59-		LCODO
Water Quality				
Dissolved Oxygen (mg/L)	DH	Condinat	2	
Water Temperature (°C)	pri	Air Temperature (9	rity (μS/cm)	
Time in situ measurements taken		An Temperature (*	c) <u>3</u>	
Watercourse Dimensions & Morph	ology			
Mean Watercourse Width_		Maritim and the		
Mean Bankfull Width		Maximum Pool Dep	oth(c	m)
% Riffle	A'''/ !	viean water Depth	(CI	m)
Evidence of eroding banks, Commer	its on bank stah	ility	% Run`	% Flat
		mty		
Substrate (% cover)				
_ · · · · · · · · · · · · · · · · · · ·	Cobble	0		
	Gravel	Sand		Muck
7	<u></u>	Clay	Marl	Detritus
In-water Cover				P(
Cover Types Present (circle):	Undercut Banks	Deep Pool	Watercress	Aquatic Veg
Overhanging Vegetation Woody	Debris B	oulder Other	r	iquatic veg
Riparian Zone		٠		
Riparian Cover (% of watercourse sha	ided, dominant	Vegetation mature	Or contract	
75%	quarer, e	ogoldion, majure	or early successions	al)
Adjacent Land Jase	J	1		
- tarmland				
Fish Habitat Potential				
Critical Habitat (spawning or nursery a	room arounds			
		ter upwellings)		
Migratory Obstructions (seasonal, perr	nanent)			
	/ N 3 - A			
Note any fish observations				
Waterbody Notes				
Natural Watercourse Transposic	ial Channol	0		
Natural Watercourse Trapezoid Surficial Drainage (i.e. furrows)	Jugout Pond	Grassed Sw	vale Buried	d Tile
/ <del></del>	- ugout i onu	Dominated by	Aquatic Veg	Drv
Other Habitat Notes, Incidental Wildli	fe Observation	is. etc.		
Field Notes Authored by M. Faiella		Sad by TE		
	Field Notes QA/Q	260 DA		
G:\01609\resource\Internal Info and Teams\Aquatic Re	sources\Field Sheets\	Stantec\Form 02 Wind Fa	m Waterbody Pasid 4	
		THE THIN FO	Traterbody Hapid Assess	sment Form.doc



Field Notes Authored by _

### WIND FARM WATERBODY RAPID ASSESSMENT FORM WATERBODY RAPID ASSESSMENT FORM

	KEA on
	South side
A	Grassed swe

	DRY
GPS Coordinates (Zone) 17 E D	Project Name Niagara Wind Project # 160950269 Field Staff MF, MF Time 13:36  N 4769308 Datum Nad8  ~ 500 m west of Victoria Rd
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/cm) Air Temperature (°C) 3/ ° c
Watercourse Dimensions & Morphology Mean Watercourse Width 0.36 (m) Mean Bankfull Width / 0 (m)  ———————————————————————————————————	Maximum Pool Depth (cm)  Mean Water Depth (cm)  6 Pool 8 Run 8 Flanch Stability (cm)
Substrate (% cover) BedrockCobbleBoulder/OGravel _  In-water Cover Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris	Banks Deep Pool Watercress Aquatic Veg
Riparian Zone	Boulder Other
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, gro いるか ^を Migratory Obstructions (seasonal, permanent)	oundwater upwellings)

Dry MN7 mariored grass (100 Comes James Con good Conussion 4 VICTORIA RD



See back

Station # 58-3		Project Name <u>Via</u>	90010000	<del>- \</del>
Watercourse Name unknow	$\sim$	Project # 16095	<b>4269</b>	
Photos See shots 100 Date June 21/12.		Field StaffME	MF	
Date June 21/12.		Time 13:51	)	
Weather conditions in previous 2	24 hrs/o	pacipilation		
GPS Coordinates (Zone) 17	T E 063	10494 N 47	-68306 Date	ım Mc
Descriptive Location Dn Cor	ocession 4	~ 700m wist of	Victoria Rd	-,
Water Quality				
Dissolved Oxygen (mg/L)	pH_	Conductivity (	(C/om)	
Water Temperature (°C)			uS/cm)	
Time in situ measurements take	n	Air Temperature (°C) _	>/ C	
Watercourse Dimensions & Mo	orphology	/		
Mean Watercourse Width	/ (m)	Maximum Pool Depth_	(cm)	١
Mean Bankfull Width	(m)	Mean Water Depth	(cm)	
% Riffle	. ,	Mean Water Depth	% Run	%
Evidence of eroding banks, com		stability	/ idii	
		<u> </u>	W	
Substrate (% cover)				<i>y</i>
Substrate (% cover)	Cabble	County /	211	
Bedrock	Cobble	Sand/	Silt	Muc
Boulder	Gravel	Clay_/	Mari /	Detr
/		/		
In-water Cover/	/		/	
In-water Cover	/		/	
Cover Types Present (circle):	Undercut B		Vatercress Ac	quatic \
Cover Types Present (circle):	Undercut B oody Debris	Banks Deep Pool V Boulder Other	Vatercress A	quatic \
Cover Types Present (circle): Overhanging Vegetation Wo			Vatercress Ad	quatic \
Cover Types Present (circle): Overhanging Vegetation WC Riparian Zone	oody Debris	Boulder Other	/	
Cover Types Present (circle): Overhanging Vegetation Wo	oody Debris	Boulder Other	/	
Cover Types Present (circle): Overhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours	oody Debris	Boulder Other	/	
Cover Types Present (circle): Overhanging Vegetation WC Riparian Zone	oody Debris	Boulder Other	/	
Cover Types Present (circle): Overhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours	oody Debris	Boulder Other	/	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use	oody Debris	Boulder Other	/	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential	oody Debris se shaded, domi	Boulder Other nant vegetation, mature of	/	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use	oody Debris se shaded, domi	Boulder Other nant vegetation, mature of	/	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs	oody Debris se shaded, domi	Boulder Other nant vegetation, mature of	/	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential	oody Debris se shaded, domi	Boulder Other nant vegetation, mature of	/	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Migratory Obstructions (seasona	sery areas, grou	Boulder Other nant vegetation, mature of	/	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs	sery areas, grou	Boulder Other nant vegetation, mature of	/	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Migratory Obstructions (seasona  Note any fish observations	sery areas, grou	Boulder Other nant vegetation, mature of	/	
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs Migratory Obstructions (seasona Note any fish observations  Waterbody Notes	sery areas, grou	nant vegetation, mature of indwater upwellings)	early successional	)
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs Migratory Obstructions (seasona Note any fish observations  Waterbody Notes Natural Watercourse Tra	se shaded, domi sery areas, grou l, permanent)	Boulder Other nant vegetation, mature of undwater upwellings)  el Grassed Swa	early successional	d Tile
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs Migratory Obstructions (seasona Note any fish observations  Waterbody Notes Natural Watercourse Tra	se shaded, domi sery areas, grou l, permanent)	Boulder Other nant vegetation, mature of undwater upwellings)  el Grassed Swa	early successional	d Tile
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs Migratory Obstructions (seasona Note any fish observations  Waterbody Notes	se shaded, domi sery areas, grou l, permanent)	Boulder Other nant vegetation, mature of undwater upwellings)  el Grassed Swa	early successional	d Tile
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Migratory Obstructions (seasona  Note any fish observations  Waterbody Notes  Natural Watercourse Tra Surficial Drainage (i.e. furrows)	sery areas, grou	nant vegetation, mature of mant vegetation, mature of ma	early successional	d Tile_ Dry_
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Migratory Obstructions (seasona  Note any fish observations  Waterbody Notes  Natural Watercourse Tra Surficial Drainage (i.e. furrows)	sery areas, ground pezoidal Channon Dugout Po	nant vegetation, mature of mant vegetation, mature of ma	early successional	d Tile Dry_
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs Migratory Obstructions (seasona Note any fish observations  Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidental	sery areas, ground pezoidal Channon Dugout Po	nant vegetation, mature of mant vegetation, mature of ma	early successional	d Tile Dry_
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs Migratory Obstructions (seasona Note any fish observations  Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidental	sery areas, ground pezoidal Channon Dugout Po	nant vegetation, mature of mant vegetation, mature of ma	early successional	d Tile Dry_

gaze Non-SEB NON-REA Mariov 2 grass Mariov 2 grass 18-3 readow TORK TON-REA 58-2 Concession 4 VILLORIA RO



RFA

Stantec	Major watercou. Remement	14
Station # (60-)	remonent	<b>J</b>
Watercourse Name UnVng.	Project Name Niagara Wind	<u> </u>
Photos Secondo los	Project #	
Date Own Con Jo	Time	
Weather conditions in previous 24 hrs	giong of	
	0631123 N 4771392 Datus	m Nad
Water Quality Dissolved Oxygen (mg/L) _ 3.44	pH_ <del>7.83</del> Conductivity (μS/cm)610	
Vater Temperature (°C) <u> </u>	Air Temperature (°C)32°2	
Watercourse Dimensions & Morphology		
Mean Watercourse Width 30 (m) Mean Bankfull Width 90 (m)	Maximum Pool Depth 7/05 (cm)	
% Riffle	Mean Water Depth ~>/OO (cm)	% Fla
vidence of eroding banks, Comments on b	pank stability minur undercut.	/8 1 Ia
ubstrate (% cover)		
Bedrock Cobble	SandSilt	Muck
BoulderGravel		Muck Detritus
n-water Cover		
	cut Banks Deep Pool Watercress Aqu	intia Va
Overhanging Vegetation Woody Debris	Boulder Other	latic Veg
Riparian Zone	<u> </u>	
Riparian Cover (% of watercourse shaded of	dominant vegetation, mature or early successional)	
2% share shrubs on east +	west side, Some trees on mest si	ide
Adjacent Land Use	100 July 100	
ish Habitat Potential		
Critical Habitat (spawning or nursery areas,	groundwater unwellings)	
Spawn, brace, nuisery.	groundwater apwenings)	
Spawn, blage, nyisery.  Aligratory Obstructions (seasonal, permaner)	it)	
non objected		
ote any fish observations <u>Cαρ</u>		
Vaterbody Notes /		
latural Watercourse V Trapezoidal Ch	nannel Grassed Swale Buried	Tilo
urficial Drainage (i.e. furrows) Dugou	ut Pond Dominated by Aquatic Veg	Dry
ther Habitat Notes, Incidental Wildlife Ol	oservations, etc. Corp (many), han smalle	1415
,	- Cap (many) , 1211 521710	
eld Notes Authored by MF		
Fiel	d Notes QA/QCed by NEE	

MM = RCG meadow VICTORIA R

RC6= Peed rang grass



WIND FARM WATERBODY RAPID ASSESSMENT FORM

$\bigcirc$	^
Kr	1

		1,00			w with	
Station #61		Project Name				i
Watercourse Name On Ynow o	$\sim$	Project #//	195	23/20	2017 \ C	
Photos See Ohato 168		Field Staff		1000	-4.1	
	0	Time				
Weather conditions in previous	24 hrs No po	rif.				
GPS Coordinates (Zone) 17			N_477		Datu	m ki
Descriptive Location On V	ictoris ~ Boc	2m South	of two	nty M	ic Rd	
Water Quality						
Dissolved Oxygen (mg/L)	pH	Condu	ctivity (யூS	/cm)		
Water Temperature (°C)		Air Temperatur	e 19CT			-
Time in situ measurements take	en		- ( <del>-                                 </del>			
Watercourse Dimensions & M	lorphology					
Mean Watercourse Width 2.5	• , , , , , ,	Maximum Pool	Denth		(cm)	
Mean Bankfull Width > 20.0	(m) Flood Pl	Mean Water De			(cm)	
% Riffle	% Po	ol	% F	ในท	_(0,14	
Evidence of eroding banks, Con	nments on bank st	ability none				
Substrate (% cover)		MT			·	-
Bedrock	Cobble	Sand	40	Silt	30	Μι
Boulder	Gravel	30 Clay		Marl		_De
In-water Cover			•			
Cover Types Present (circle): Overhanging Vegetation Wo	Undercut Bar oody Debris		ol Wat other	ercress	Aqu	uatic
Cover Types Present (circle): Overhanging Vegetation Wo	oody Debris	Boulder C	Other	· · · · · · · · · · · · · · · · · · ·		uatic
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use	oody Debris	Boulder C	Other	· · · · · · · · · · · · · · · · · · ·		uatic
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours	oody Debris	Boulder C	Other	· · · · · · · · · · · · · · · · · · ·		uatic
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use	oody Debris	Boulder C	Other	· · · · · · · · · · · · · · · · · · ·		uatic
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurs	oody Debris se shaded, domina	Boulder C	other ture or ear	· · · · · · · · · · · · · · · · · · ·		uatic
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Wand Migratory Obstructions (seasonal	se shaded, domina sery areas, ground	Boulder Cont vegetation, ma	otherture or ear	ly succes		uatic
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Your  Migratory Obstructions (seasonal	se shaded, domina sery areas, ground	Boulder Control of the second	otherture or ear	ly succes	ssional)	vatic
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Wand Migratory Obstructions (seasonal	se shaded, domina sery areas, ground	Boulder Control of the second	otherture or ear	ly succes	ssional)	vatic
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Adjacent Land Use  Critical Habitat Potential  Critical Habitat (spawning or nurs  Yww  Migratory Obstructions (seasonal  ATT  Note any fish observations	se shaded, domina sery areas, ground	Boulder Control of the second	otherture or ear	ly succes	ssional)	uatic
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  YWW Migratory Obstructions (seasonal  ATT) Note any fish observations  Materbody Notes	se shaded, domina sery areas, ground	Boulder Cont vegetation, ma	ture or ear	ly succes	ssional)	
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  YWW Migratory Obstructions (seasonal  ATT) Note any fish observations  Materbody Notes	se shaded, domina sery areas, ground	Boulder Cont vegetation, ma	ture or ear	ly succes	ssional)	
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  YWW Migratory Obstructions (seasonal  ATT) Note any fish observations  Materbody Notes	se shaded, domina sery areas, ground	Boulder Cont vegetation, ma	ture or ear	ly succes	ssional)	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Wand  Migratory Obstructions (seasonal  Arry  Note any fish observations  Materbody Notes  Natural Watercourse  Trap Surficial Drainage (i.e. furrows)	se shaded, domina sery areas, ground l, permanent)  pezoidal Channel Dugout Pond	Boulder Continued to the second secon	ture or ear d Swale_	tic Veg_	ssional)	
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  YWW Migratory Obstructions (seasonal  ATT) Note any fish observations  Materbody Notes	se shaded, domina sery areas, ground l, permanent)  pezoidal Channel Dugout Pond	Boulder Continued to the second secon	ture or ear d Swale_	tic Veg_	ssional)	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Wand  Migratory Obstructions (seasonal  Arry  Note any fish observations  Materbody Notes  Natural Watercourse  Trap Surficial Drainage (i.e. furrows)	se shaded, domina sery areas, ground l, permanent)  pezoidal Channel Dugout Pond	Boulder Continued to the second secon	ture or ear d Swale_	tic Veg_	ssional)	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Wand  Migratory Obstructions (seasonal  Arry  Note any fish observations  Materbody Notes  Natural Watercourse  Trap Surficial Drainage (i.e. furrows)	se shaded, domina sery areas, ground l, permanent)  pezoidal Channel Dugout Pond	Boulder Continued to the second secon	ture or ear d Swale_	tic Veg_	ssional)	
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Wand  Migratory Obstructions (seasonal  Arry  Note any fish observations  Materbody Notes  Natural Watercourse  Trap Surficial Drainage (i.e. furrows)	se shaded, domina sery areas, ground l, permanent)  pezoidal Channel Dugout Pond Wildlife Observat	Boulder Continued the second s	d Swale_ed by Aqua	tic Veg_	ssional)	

BANK meadow SP BAK VICTURIA ROAD X4 Substate Meadow Sp

FSEM Ismile Creek



### WIND FARM WATERBODY RAPID ASSESSMENT FORM

1	Jor	
0	FΛ	

Station #(02-)		Project Name	Minor		
Watercourse Name S mil	Field Staff M				
Priotos					
Photos  Date		Time	X	1 Comment	
	24 Dre	& humid	···		
GPS Coordinates (Zone) 6243 Descriptive Location	89 E 4760	0813 N		Datum 177	
Descriptive Location		gional Pd	20 PON	Datam	
	R ROLLER	He Road			
Water Quality					
Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements take	OH	Conductive	its to Otal		
Water Temperature (°C)	Samuel Marian Control of the Control	Air Temperature (%	ιτλ (πονcm) ———		
w. 34 P		- · ···· · · · · · · · · · · · · · · ·	0)		
Watercourse Dimensions & M Mean Watercourse Width	Ornhology				
		Masters a post			
Mean Bankfull Width% Riffle	(m)	Maximum Pool Dep	oth	(cm)	
% Riffle	·····(''')	wiedii water Depth		(cm)	
Evidence of eroding banks, Com	ments on bank s	etability	% Run	% Fla	
Substrate (% cover)	and the same of th				
Bedrock	Cobble	Comel			
Boulder	Gravel	Sand_ Clay	Silt	Muck	
In-water Cover		Olay	Marl	Detritus	
Cover Types Present ( )	· ·				
Cover Types Present (circle): Overhanging Vegetation Woo	Undercut Ba	nks Deep Pool Boulder Other	Watercress	Aquatic Veg	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use		ant vegetation, mature	or early successio	onal)	
Fish Habitat Potential					
Critical Habitat (spawning or nurse	ery areas, ground	lwater upwellings)			
Migratory Obstructions (seasonal,	permanent)				
Note any fish observations					
Waterbody Notes					
Natural Watercourse Trans					
Natural Watercourse Trape Surficial Drainage (i.e. furrows)	220Idai Channel	Grassed Sw	ale Buri	ed Tile	
		Dominated by	Aquatic Veg	Drv v	
Other Habitat Notes, Incidental W	/ildlife Observat	ilono eta	<del>,</del>		
Other Habitat Notes, Incidental W	MANUE ODSEIVAL	ions, etc.			
ield Notes Authored by M. Faiella	Field Notes Q	7-11			
Notice of The Party of The Part	Field Notes Q	A/QCed by			
:\01609\resource\Internal Info and Teams\Aqua	tic Resources\Field She	ets\Stantec\Form 02 Wind Far	m Waterbook Bastala		
		25 THING I GI	··· · · · · · · · · · · · · · · · · ·	essment Form.doc	





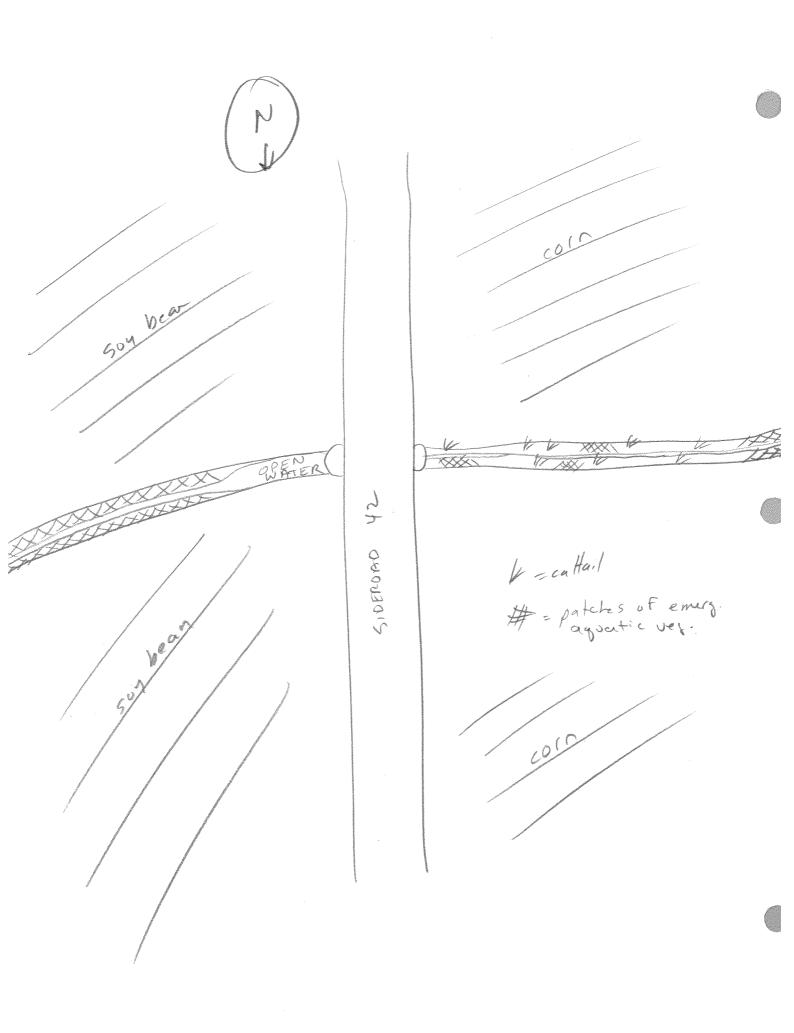
	WIND EADS MA	TEDDARY -	ADID ACCE		ATOR
Stantec	WIND FARM WA	IEKBODY K	APID ASSES	SSMENT FORM	Ri
( )	ì				
Station #S Watercourse Name	<u>-1</u>	Pro	ject Name N	liagara Wi	nd
Photos	WOLL JOE		iject # <u>    //₀                              </u>	1950269	
Date 2012 0	ib 19.	Tin	10:27	E, MIC	*****
Weather conditions	s in previous 24 hrs _	MADE DICCIO	tation.		
GPS Coordinates (	Zone) 177 E		<u>N</u>	4760378	Datum N A
on west	on In Sideroad	142 ~ 30	on noth	of Concessi	onb.
Water Quality					
Dissolved Oxygen	(mg/L)	√ pH	Conductiv	ity (μS/cm)	
Water Temperature	(C)	Air	remperature (°	C)	3/
Time in situ measu	rements taken				
Watercourse Dime	ensions & Morpholo	av -			y-4 3
Mean Watercourse	Width (m)		imum Pool De	oth (c	:m) 🚺 1
Mean Bankfull Widt		· Mea	n Water Depth		sw)
% Ri	ffle banks, Comments o	% Pool		% Run`	%
	Joanns, Comments C	on bank stability			
Substrate (% cove	r)				
Bedr		oble	Sand	Silt	Muck
Bould	derGra	vel	Clay	Marl Marl	Detrit
		•		•	•
In-water Cover					
In-water Cover Cover Types Preser	nt (circle): Und	lercut Banks	Deen Pool	Watercreee	Agustia Ma
In-water Cover Cover Types Preser Overhanging Vegeta	nt (circle): Und ation Woody Deb	lercut Banks oris Bouk	Deep Pool der Othe	Watercress	Aquatic Ve
Cover Types Preser Overhanging Vegeta		_			Aquatic Ve
Cover Types Preser Overhanging Vegeta Riparian Zone	ation Woody Deb	oris Boul	der Othe	<u> </u>	
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% o	ation Woody Deb	oris Boul	der Othe	<u> </u>	
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% o	f watercourse shade	oris Bouk	der Othe	or early succession	
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% o	f watercourse shade	oris Bouk	der Othe	or early succession	ai)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent	f watercourse shade	d, dominant veg	etation, mature	or early succession	ai)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% o	f watercourse shade	d, dominant veg	etation, mature	or early succession	ai)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spay	f watercourse shaded    Tolder Codd   Tolder	Bould, dominant veg	etation, mature	or early succession	ai)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spaw	f watercourse shaded  for the shaded of the	ent)	etation, mature	or early succession	ai)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spay	f watercourse shaded  for the shaded of the	ent)	etation, mature	or early succession	ai)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spaw	f watercourse shaded  for the shaded of the	ent)	etation, mature	or early succession	ai)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spaw) Migratory Obstruction Note any fish observa Vaterbody Notes Natural Watercourse	f watercourse shaded	Soris Bould dominant veg	etation, mature	or early succession  15 of Cattai	al)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spaw) Migratory Obstruction Note any fish observa	f watercourse shaded	Soris Bould dominant veg	etation, mature	or early succession  15 of Cattai	ai)
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spaw Migratory Obstruction Note any fish observa Naterbody Notes Natural Watercourse Gurficial Drainage (i.e.	watercourse shaded  f	End, dominant veg  CANUA GA  s, groundwater  nent)  Channel  gout Pond	etation, mature  GS Grassed Sy  Dominated by	or early succession  Solvential Cattain  Vale Burie  Aquatic Veg	d Tile
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spaw) Migratory Obstruction Note any fish observa Vaterbody Notes Natural Watercourse	watercourse shaded  f	End, dominant veg  CANUA GA  s, groundwater  nent)  Channel  gout Pond	etation, mature  GS Grassed Sy  Dominated by	or early succession  Solvential Cattain  Vale Burie  Aquatic Veg	d Tile
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spaw Migratory Obstruction Note any fish observa Naterbody Notes Natural Watercourse Gurficial Drainage (i.e.	watercourse shaded  f	End, dominant veg  CANUA GA  s, groundwater  nent)  Channel  gout Pond	etation, mature  GS Grassed Sy  Dominated by	or early succession  Solvential Cattain  Vale Burie  Aquatic Veg	d Tile
Cover Types Preser Overhanging Vegeta Riparian Zone Riparian Cover (% of Adjacent Land Use Adjacent Land Use Fish Habitat Potent Critical Habitat (spaw Migratory Obstruction Note any fish observa Naterbody Notes Natural Watercourse Gurficial Drainage (i.e.	watercourse shaded  f	End, dominant veg  CANUA GA  s, groundwater  nent)  Channel  gout Pond	etation, mature  GS Grassed Sy  Dominated by	or early succession  Solvential Cattain  Vale Burie  Aquatic Veg	d Tile

REA

## Stantor

#### WIND FARM WATERBODY RAPID ASSESSMENT FORM

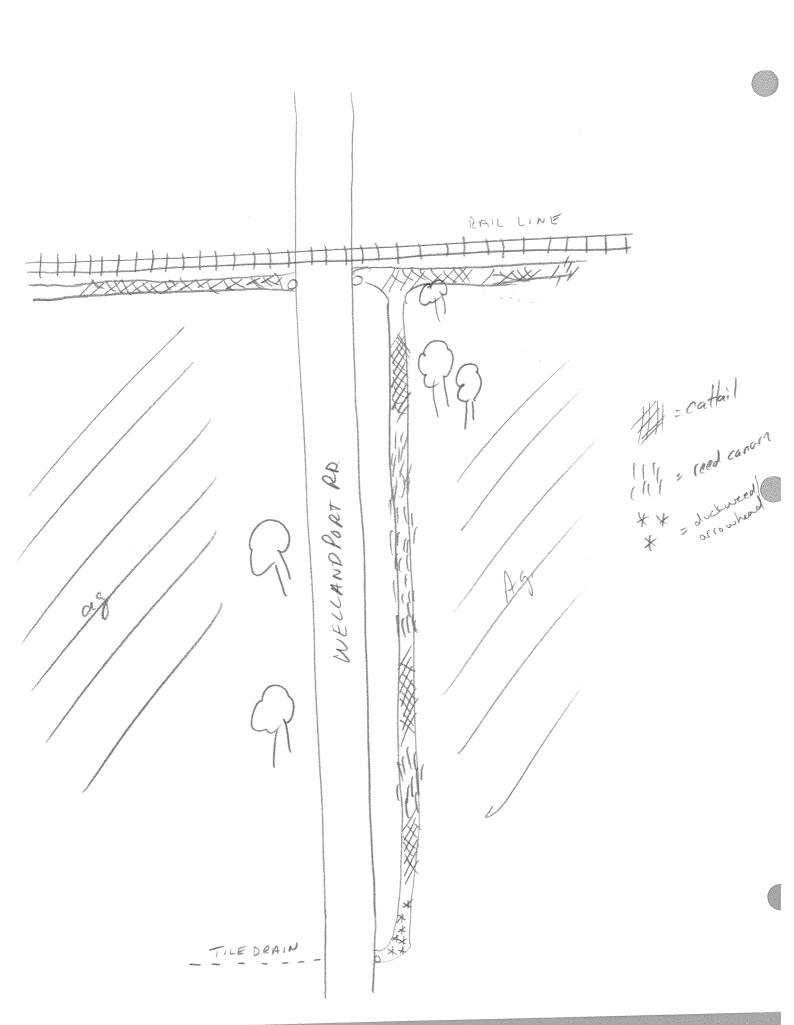
Station #63-2	Proi	ect Name Niaga	a word
Watercourse Name Province	Proj	ect #_160950	
Photos See photo 197 Date 2012 56 19	Field	Staff ME MF	
Date 2012 be in	Time	10:40	****
Weather conditions in previous 24 hrs	Minol pa		
GPS Coordinates (Zone)	0623141		9987 Datum NAD 8
Descriptive Location Dr. Side (		DD M nulth	of Concession
			0 (0/10/1/01/
Water Quality			
Dissolved Oxygen (mg/L) 10.20	pH 9 37	Conductivity (uS/c	m) 676
Dissolved Oxygen (mg/L) 10.20 Water Temperature (°C) 23.37	Air T	emperature (°C)	30°/
Time in situ measurements taken	10:50		
Watercourse Dimensions & Morpho	logy		
Mean Watercourse Width 2.5 (	m) Maxi	mum Pool Depth	용. ਂ (cm)
Mean Watercourse Width 2.5 (I Mean Bankfull Width 5.0 (I	m) Mear	Water Depth 2	(cm)
% Riffle	% Pool	% Ru	
Evidence of eroding banks, Comments	s on bank stability	More observed	
			•
Substrate (% cover)			
Bedrock C Boulder G	obble	Sand <i>40</i>	Silt 40 Muck
BoulderG	iravel <i>/ o</i>	Clay	Marl Detritus
Overhanging Vegetation Woody D  Riparian Zone Riparian Cover (% of watercourse shad		-	successional)
Adjacent Land Use			
ag rd house	•		
Fish Habitat Potential Critical Habitat (spawning or nursery ar	eas, groundwater ι	ıpwellings)	
tolane, apaun, nuisem			***************************************
Migratory Obstructions (seasonal, perm	ianent)		
Note any fish observations none			
Waterbody Notes			
Natural Watercourse Trapezoid	al Channel	Grassed Swale	Burjed Tile
Surficial Drainage (i.e. furrows)	ougout Pond	Dominated by Aquati	c Veg Dry
Other Habitat Notes, Incidental Wildli	fe Observations.		
_			
ield Notes Authored by MF	Field Notes QA/QCed	oy_MEE	







Station #65-1		Proi	ect Name	Niagara	ار ان	1
Watercourse Name vnkno	พท	Proi	ect # //a	095026	20179	
Photos See shato 105		Field	Staff D		7	
Photos See phato 105  Date 2012 06 19  Weather conditions in marine		Time	13:11	ne, me		
Weather conditions in previous	us 24 hrs Wilno	( 000				
Weather conditions in previous GPS Coordinates (Zone)	77 E 662	7 737	N	4758121	Dotu	- ALVID
Descriptive Location No.	is Wellandood	Rd.	- 400 m	South	f Conc	M NAD
	<u> </u>				×1	
Water Quality Dissolved Oxygen (mg/l ) //	2./	710	- No. 1	2		
Dissolved Oxygen (mg/L) 4 Water Temperature (°C) 2	)0 =	7.68	Conduct	ivity (μS/cm)	3592	) \
Time in situ measurements ta	ken	AIF I	emperature (	(°C)		
Watercourse Dimensions &	Morphology					
Mean Watercourse Width	<u>.5(m)</u>	Maxii	num Pool De	epth 25	(cm)	
Medil Dalikiuli Aakiili 🔫	(I)	1/00-	18/alaa Daal	L	(cm)	
% Riffle	<u> </u>	)OI		% Run	(•)	% F
Evidence of eroding banks, Co	omments on bank s	tability	None	observed.		
Substrate (% cover)						
Bedrock Boulder	Cobble	10	Sand	40 Siit	2 -	Musela
Boulder	Gravel	2.0	_Clay	Sin_ Marl		_Muck Detritus
Riparian Zone Riparian Cover (% of watercould be a cover)	rse shaded, domina	int vege	tation, matur	e or early succe	ssional)	
10% mature / immate	JA TIUS + SI	uoo	<del>~~</del>			
cg, rds, houses.	•					
Fish Habitat Potential Critical Habitat (spawning or nu Spawn? Migratory Obstructions (season	al. permanent)			·		
Note any fish observations	M27					
Vaterbody Notes		/				
latural Watercourse Tra	apezoidal Channel	$\checkmark$	Grassed S	wale	Buried Til	<b>.</b>
Surficial Drainage (i.e. furrows)_	Dugout Pond			y Aquatic Veg_		)LA 
						/
other Habitat Notes, Incidenta	i Wildlife Observat	ions, et	c			
	· · · · · · · · · · · · · · · · · · ·					
old Notes Authors by 100 C				,		
eld Notes Authored by	Field Notes Q	_				
:\resource\internal Info and Teams\Aquatic	Resources\Field Sheets\Si	antec\Form	1 02 Wind Farm V	Valerhorty Panid Assa	esmant Fa-	daa
•						





REA

<b>MAINE</b>
--------------

Station #	Project Name Niagara Wind
Watercourse Name unknown	Project # 1/00950269
Photos See photo 105.	Field Staff ME, ME
	Time 13:38
Weather conditions in previous 24 hrs wind (	(teip.
GPS Coordinates (Zone) 19つ E 0623	859 N 4757235 Datum NAD 93
Descriptive Location On Wellandpult Rd	- 500 m south of Conc. 5
Water Quality	
Dissolved Oxygen (mg/L) 4.24 pH 7	99 Conductivity (::Slom) 913
Water Temperature (°C) 22.96	Air Temperature (°C) 30 -
Time in situ measurements taken /3:50	All Temperature ( C)
Watercourse Dimensions & Morphology	
Mean Watercourse Width $20$ (m)	Maximum Pool Depth 75 (cm)
Mean Watercourse Width 20 (m) Mean Bankfull Width 10.0 (m)	Maximum Pool Depth (cm)
% Riffle% Poo	Mean Water Depth/ <i>O</i> (cm) I% Run% Flat
Evidence of eroding banks, Comments on bank sta	bility Apple Mossiand
	Sind Division of the state of t
Substrate (% cover)	
	Sand 30 Silt 30 Muck
Bedrock Cobble / Boulder /O Gravel	Sand 30 Silt 30 Muck Clay Marl Detritus
•	Clay Marl Detritus
In-water Cover	900000
Cover Types Present (circle): Undercut Bank	s Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominan	t vegetation, mature or early evenesional
10% immature mature loss	
10% immature/mature tree - Adjacent Land Use	570 S.F V.
Ag fields new house	
0	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, groundw	vater upwellings)
Spann, toland, nulsery	
Migratory Obstructions (seasonal, permanent)	
Note any fish observations Nove:	
Note any fish observations	
Waterbody Notes /	
Natural Watercourse Trapezoidal Channel	Grassed Swale Ruried Tile
Surficial Drainage (i.e. furrows)  Dugout Pond	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Other Habitat <u>N</u> otes, Incidental Wiidlife Observati	ons, etc.
gieen tiogs	
V	
ME	
Field Notes Authored by Field Notes QA	vQCed by



WALLAND PORT RD.

OLD RAIL BED C open WATER V = catail

D = duckweed / ponduced.

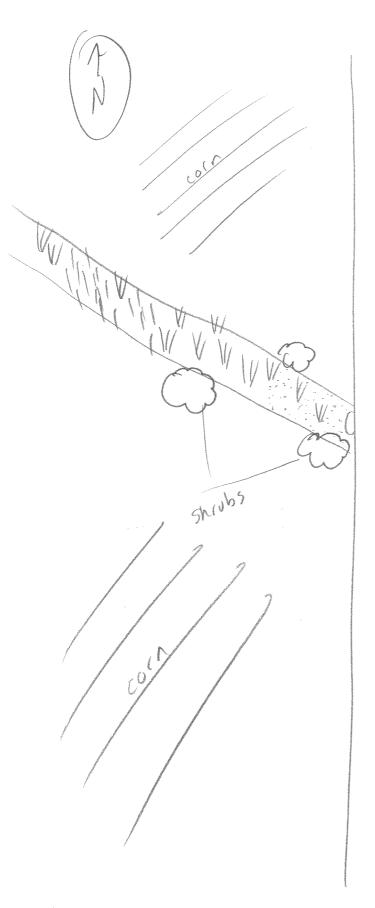
S = Sedge 9 p.



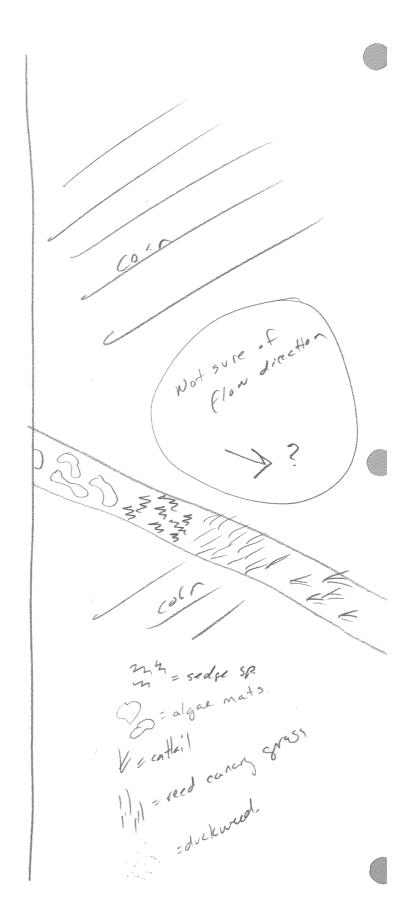


Station # 65-3	Project Name Niagara Wind
Watercourse Name UNKNOWN	Project # 160950369
Photos Se Nova las	Field Staff ME ME
Photos Se photo leg Date 2012 06 19	Time 14:09
Weather conditions in previous 24 hrs	0.0.0
Weather conditions in previous 24 hrs MINO/ GPS Coordinates (Zone) 177 E 0623	3013 N 4757840 Datum NAD 83
Descriptive Location	I rd of Shaffy Rd - 250 m north
Of Con. 5	sharing to a som ton
Water Quality	
_	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width $25$ (m)	Maximum Pool Depth 3♥ (cm)
Mean Bankfull Width 6 0 (m)	Mean Water Depth/ \( \sqrt{\sqrt{cm}} \)
% Riffle/ <i>D'</i> _/ ₂ % Poo	ol% Run% Fla
Evidence of eroding banks, Comments on bank sta	ability none
Cultivative (2) a count	
Substrate (% cover)	In Sand 2 0 City Har March
Bedrock Copple	/DSand3.0Silt40Muck20ClayMarlDetritus
BoulderGraver	20 Clay Marl Detritus
Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris <b>Riparian Zone</b> Riparian Cover (% of watercourse shaded, dominal	
10% maker Lace 16h cubs	Canada a a a a
10% matur frees / shrubs red Adjacent Land Use	- Carron Chas
•	V
as.	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	water upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes	
Natural Watercourse/_ Trapezoidal Channel	Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatic Veg Dry
Other Habitat Notes, incidental Wildlife Observation	tions, etc
	`
	,
Field Notes Authored by Field Notes C	DA/QCed by MEE

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc









REA

ntec No Flow

Station #	Project Name Niagara Wind
Watercourse Name VNENDWN	Project # 160950269
Photos Se photo log	Field Staff ME ME
Date	Time 14:24
Weather conditions in previous 24 hrswho	( presip
GPS Coordinates (Zone) 197 E 062	3036 N 4757316 Datum NAD88
Descriptive Location On Shafley R	d ~ Zoom south of Con 5
within ROW	
Water Quality	
	1 7.89 Conductivity (uS/cm) 7.33
Water Temperature (°C) 23.41	7.89 Conductivity (μS/cm) 733   Air Temperature (°C) 30°c
Water Temperature (°C) 23.41 Time in situ measurements taken 14.3	35
Time in site measurements taken	<u></u>
Watercourse Dimensions & Morphology	~ ·
Mean Watercourse Width 3.0 (m) Mean Bankfull Width 7.0 (m)	Maximum Pool Depth3  (cm)
Mean Bankfull Width 7.0 (m)	Mean Water Depth(cm)
% Riffle%	Pool% Run% Flat
Evidence of eroding banks, Comments on bank	stability non observed.
Substrate (% cover)	
BedrockCobble	Sand 30 Silt 40 Muck Clay Marl 10 Detritus
BoulderGravel	Clay Marl / Detritus
In-water Cover  Cover Types Present (circle): Undercut & Overhanging Vegetation Woody Debris	
Riparian Zone Riparian Cover (% of watercourse shaded, dom  40% ash se clm se shaded, dom  Adjacent Land Use  Nouse, MIV + (ails + v.ds - ,ac)	65
~	
Fish Habitat Potential	in .
Critical Habitat (spawning or nursery areas, grounds	undwater upwellings)
Spawn, nursen, Polage.	
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
	/ * *
Waterbody Notes	
Natural Watercourse Trapezoidal Chani	
Surficial Drainage (i.e. furrows) Dugout P	Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obse	mustions atc. could had 2 . Charles Grant
Other Habitat 140tes, incluental Wilding Obse	rvations, etc. <u>raidinals</u> Green flogs
	,
Field Notes Authored by Field No	otes QA/QCed by

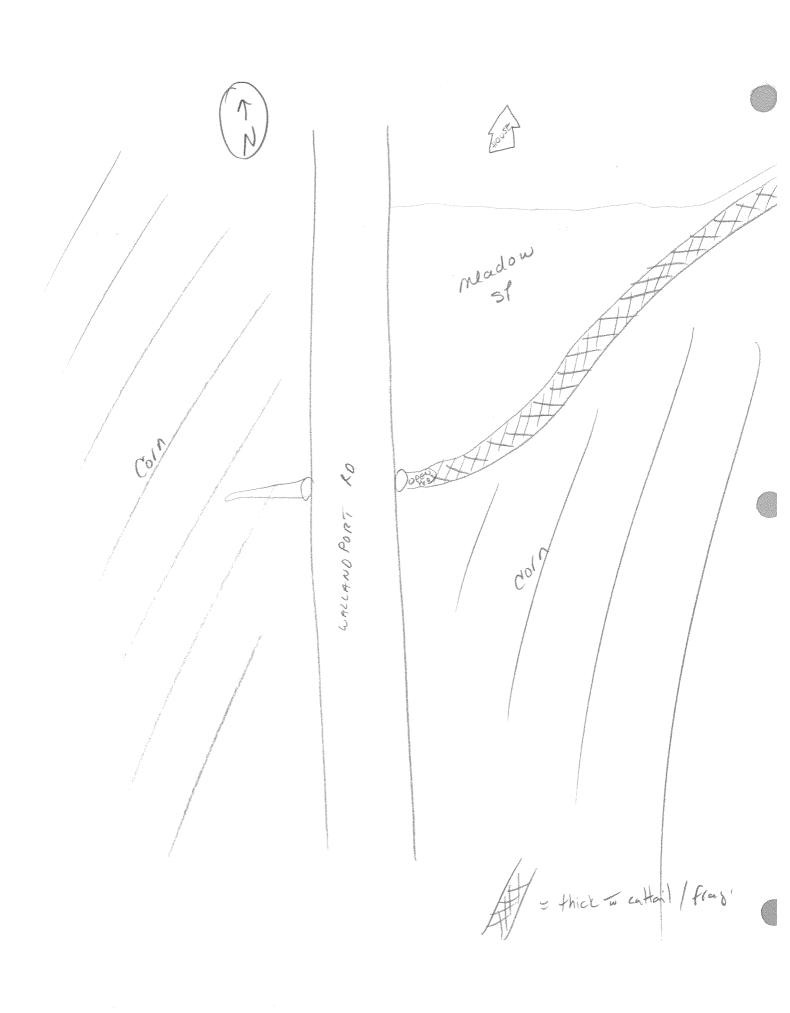
2 Tryklom アルシスロセン meadow TRAIL AIL



REA on E

Water Temperature (°C) Air Tempera Time in situ measurements taken  Watercourse Dimensions & Morphology  Mean Watercourse Width (m)	ne Nia			
Water Quality Dissolved Oxygen (mg/L) Weather conditions in previous 24 hrs Descriptive Location  Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Mean Bankfull Width Mean Water Mean Bankfull Width Mean Bankfull Width Mean Water Mean Bankfull Width Mean Water Mean Bankfull Width Mean Water Mean Water Cobble  Substrate (% cover)  Bedrock Gravel  Gravel  Dover Types Present (circle):  Undercut Banks Deep Doverhanging Vegetation  Woody Debris  Boulder  Riparian Cover  Riparian Cover (% of watercourse shaded, dominant vegetation, of the present of		00 00 1	a)cad	
Photos Date Do Previous 24 hrs Time Descriptive Location Descriptive Loc	11/2000	50 2/05	3	
Date				
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Water Temperature (°C) Water Outse Dimensions & Morphology Mean Watercourse Dimensions & Morphology Mean Watercourse Width 25 (m) Mean Bankfull Width 3.5 (m) Mean Watercourse Width 25 (m) Mean Watercourse Width 25 (m) Mean Watercourse Width 3.5 (m) Mean Water Cover Cover Types Present (circle): District Cover Cover Types Present (circle): District Cover (% of watercourse shaded, dominant vegetation, of the circle		+ 1 1 1 1		
GPS Coordinates (Zone)  Descriptive Location  Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Time in situ measurements taken  Watercourse Dimensions & Morphology  Mean Watercourse Width  Water (m)  Mean Wa				
Water Quality Dissolved Oxygen (mg/L)	N 4	75646	Q Datu	m ALA
Dissolved Oxygen (mg/L) pH Cor Water Temperature (°C) Air Tempera Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water  Water Cover  Substrate (% cover) Substrate (% cover)  Bedrock Cobble Sand  Boulder Gravel (Clay  The Water Cover  Cover Types Present (circle): Undercut Banks Deep Cove	800 m	north		
Dissolved Oxygen (mg/L) pH Cor Water Temperature (°C) Air Tempera Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water  Water Cover  Substrate (% cover) Substrate (% cover)  Bedrock Cobble Sand  Boulder Gravel (Clay  The Water Cover  Cover Types Present (circle): Undercut Banks Deep Cove				
Water Temperature (°C)	advativity.	·C/om)		
Watercourse Dimensions & Morphology Mean Watercourse Width	nductivity (µ	19/cm)		Santago composito de la compos
Mean Watercourse Width	iuie (°C)_	C	,c	
Mean Watercourse Width				
Mean Bankfull Width 3.5 (m) Mean Water % Riffle 90 % Pool Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Cobble Sand Boulder Gravel 30 Clay n-water Cover Cover Types Present (circle): Undercut Banks Deep Overhanging Vegetation Woody Debris Boulder Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, adjacent Land Use Scritical Habitat (spawning or nursery areas, groundwater upwelling passible spawn Gravel Seasonal, permanent) Seasonal, permanent) Seasonal Seasonal Channel Gravel	ooi Depth	30	(cm)	
Riffle	Depth	10	(cm)	
Bedrock Cobble Sand Boulder Gravel 30 Clay n-water Cover Cover Types Present (circle): Undercut Banks Deep Overhanging Vegetation Woody Debris Boulder  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, adjacent Land Use  Critical Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwelling passible pass		6 Run	(0)	%
Bedrock Gravel Gravel Gravel Boulder Gravel Gravel Gravel  n-water Cover Cover Types Present (circle): Undercut Banks Deep Dverhanging Vegetation Woody Debris Boulder  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, of the control of	くりない			
Bedrock Gravel Gravel Gravel Boulder Gravel Gravel Gravel  n-water Cover Cover Types Present (circle): Undercut Banks Deep Dverhanging Vegetation Woody Debris Boulder  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, of the control of				
Boulder Gravel 30 Clay  n-water Cover Cover Types Present (circle): Undercut Banks Deep Dverhanging Vegetation Woody Debris Boulder  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation,  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwelling  Digratory Obstructions (seasonal, permanent)  Foreign Types (seasonal, permanent)	40	Silt	<b>Z</b> \( \)	1 4
n-water Cover Cover Types Present (circle): Undercut Banks Deep Dverhanging Vegetation Woody Debris Boulder Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation,  O// Adjacent Land Use  Cish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwelling  Digratory Obstructions (seasonal, permanent)  Out of water  Vaterbody Notes  atural Watercourse Trapezoidal Channel Gras  urficial Drainage (i.e. furrows) Dugout Pond Domin		Siit_ Marl	and there	Muck Detrit
Riparian Cover (% of watercourse shaded, dominant vegetation, adjacent Land Use  Gish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwelling attemption)  Ingratory Obstructions (seasonal, permanent)  Index of water water water and the state of the	Other		-	atic Ve
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwelling processing spawn)  Ingratory Obstructions (seasonal, permanent)  Indicate water (spawning or nursery areas, groundwater upwelling processing spawn)  Ingratory Obstructions (seasonal, permanent)  Indicate water (spawning or nursery areas, groundwater upwelling processing spawn)  Ingratory Obstructions (seasonal, permanent)  Indicate water (spawning or nursery areas, groundwater upwelling processing spawning processing spawning processing spawning processing processing processing processing spawning processing pr	mature or e	arly succes	ssional)	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwelling possible spawn  Ingratory Obstructions (seasonal, permanent)  Lact of water  Jaterbody Notes  atural Watercourse Trapezoidal Channel Grasurficial Drainage (i.e. furrows) Dugout Pond Domin				·····
Critical Habitat (spawning or nursery areas, groundwater upwelling possible spawn)  ligratory Obstructions (seasonal, permanent)  lote any fish observations				
Critical Habitat (spawning or nursery areas, groundwater upwelling possible spawn)  ligratory Obstructions (seasonal, permanent)  lote any fish observations				
ligratory Obstructions (seasonal, permanent)    act of water   lote any fish observations	aa\			
ligitatory Obstructions (seasonal, permanent)    lack of water   lack of water	<del>-</del> ,			
lote any fish observations				
/aterbody Notes atural Watercourse Trapezoidal Channel Grasurficial Drainage (i.e. furrows) Dugout Pond Domin			•	
atural Watercourse Trapezoidal Channel Grasurficial Drainage (i.e. furrows) Dugout Pond Domin				
atural Watercourse Trapezoidal Channel Grasurficial Drainage (i.e. furrows) Dugout Pond Domin				
urricial Drainage (i.e. furrows) Dugout Pond Domin				
	ised Swale		Buried T	
ther Habitat Notes, incidental Wildlife Observations, etc	ated by Aq	uatic Veg_	<u> </u>	Dry
Traditat 170103, Illolusiitai TTIIUIIIS UDSEIVATIONS, STC.				
		_		

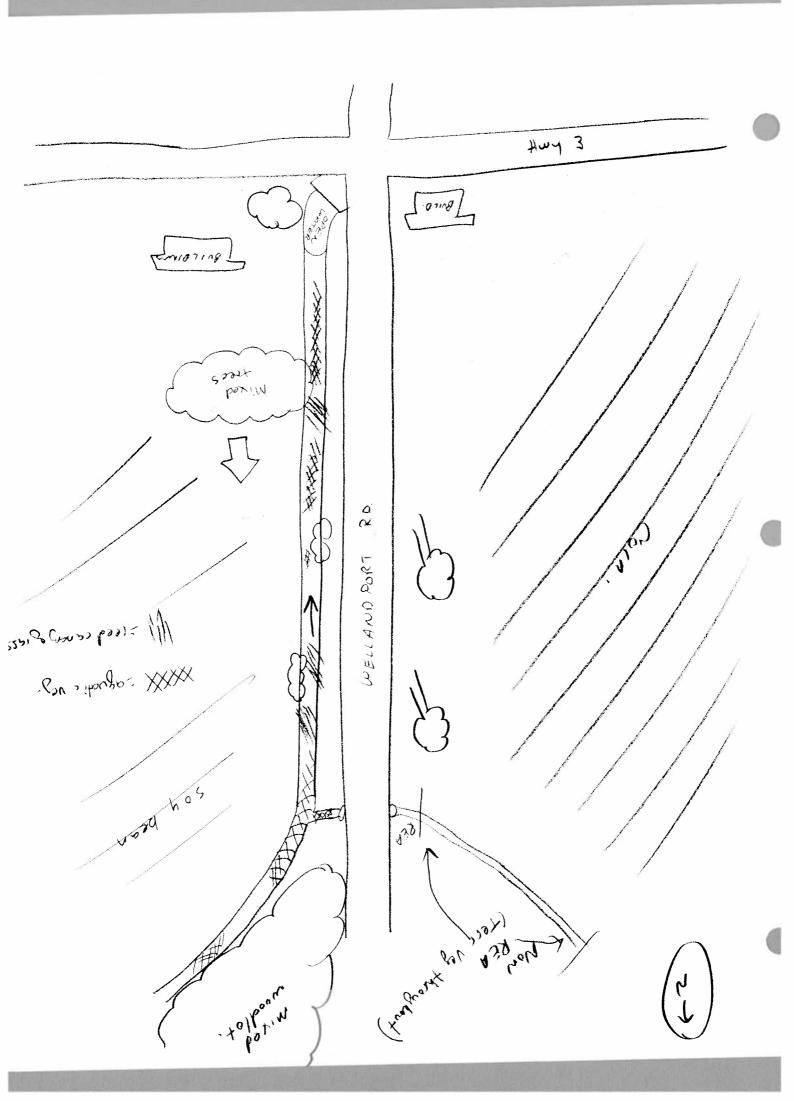
Field Notes QA/QCed by ______





R	€	A
	_	-

Station # 66-2		Project Name	Niga	ara Wi	NO
Watercourse Name UNKNOU	wn	Project #//	0950	2269	
Photos <u>50e photo 105</u> Date <u>2012 010 110</u>		Field Staff	WE W		
Date 2012 on 17		Time	2.45		
Weather conditions in previous	24 hrs None				
GPS Coordinates (Zone) 17	T E 062	3924	N 475	5835	Datum NAD
Descriptive Location	west side o	t Wellandpor	t RJ Cp	crallel) to	= Highu
Water Quality	a./	-1 A +			
Dissolved Oxygen (mg/L) 3.2	<u> </u>	<u> 7.75</u> Condu	ctivity (µS/	cm) <u>7/ 7</u>	7
water Temperature (°C)&_	<u> 19</u>	Air Temperatur	e (°C)	30°c	
Time in situ measurements take	en 12:57				
Watercourse Dimensions & M Mean Watercourse Width3 0	(m)	Maximum Pool	Donth	7.7. /	
Mean Bankfull Width 50	(m)	Maximum Pool Mean Water De	Debai		
% Riffle	100 % Pc	ol		un(	cm)
Evidence of eroding banks, Con					%
			v · voet	west'd	
Substrate (% cover)					
•	Cabbla		11 -		
Bedrock	Cobble	SandSand	40	Silt <u> </u>	<u>ତ</u> Mucl
Boulder	Gravel	<i>Q</i> ○ Clay		Mart	Detri
Cover Types Present (circle):	Undercut Ba		Ol Wate	ercress (	Áquatic V
Cover Types Present (circle): Overhanging Vegetation Wo	Undercut Bar pody Debris			ercress (	Áquatic V
Cover Types Present (circle): Overhanging Vegetation Wo	oody Debris	Boulder C	ther		
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours	oody Debris	Boulder C	ther		
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Edjacent Land Use	oody Debris se shaded, domina	Boulder C	ther		
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours	oody Debris se shaded, domina	Boulder C	ther		
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use	oody Debris se shaded, domina	Boulder C	ther		
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Edjacent Land Use  Riparian Land Use  Riparian Cover (% of watercours)  Riparian Cover (% of watercours)	e shaded, domina	Boulder C	ther		
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Riparian Land Use  Riparian Cover (% of watercours  Adjacent Land Use  Riparian Cover (% of watercours	se shaded, domina	Boulder C	ther		
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Riparian Land Use  Riparian Cover (% of watercours  Adjacent Land Use  Riparian Cover (% of watercours	se shaded, domina	Boulder C	ther		
Cover Types Present (circle): Dverhanging Vegetation Wookiparian Zone Riparian Cover (% of watercours Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours  Edjacent Land Use  Riparian Cover (% of watercours)  Riparian Co	se shaded, dominations are shaded, dominations are services are servic	Boulder Country vegetation, ma	ture or earl	y successio	
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours  Idjacent Land Use  Riparian Cover (% of watercours)  Riparian	se shaded, dominations are shaded, dominations are server areas, ground l, permanent)	Boulder C	ture or earl	y successio	
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours  Idjacent Land Use  Riparian Cover (% of watercours)  Riparian	se shaded, dominations are shaded, dominations are server areas, ground l, permanent)	Boulder Country vegetation, ma	ture or earl	y successio	
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours  Idjacent Land Use  Riparian Cover (% of watercours)  Riparian	se shaded, dominations are shaded, dominations are server areas, ground l, permanent)	Boulder Country vegetation, ma	ture or earl	y successio	
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours  Idjacent Land Use  Riparian Cover (% of watercours)  Riparian	se shaded, dominations are shaded, dominations are server areas, ground l, permanent)	Boulder Country vegetation, ma	ture or earl	y successio	
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours  dijacent Land Use  Riparian Cover (% of watercours)  dijacent Land	se shaded, dominatings sery areas, ground permanent)	Boulder Cant vegetation, man	ture or earl	y successio	nal)
ish Habitat Potential critical Habitat (spawning or nurs Spawn not see the local ligratory Obstructions (seasonal lack of water ote any fish observations	se shaded, dominating	Boulder Country was a second of the second o	ture or earl	y successio	nal)
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Riparian Cover (% of watercours Signatural Watercourse Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Cover (% of watercourse Riparian Cover (% of watercourse) R	se shaded, dominating of the shaded seems areas, ground services, permanent)  pezoidal Channel Dugout Pond	Boulder Cant vegetation, manual vegetation, vegeta	ture or earl	y succession Buri	nal)  ed Tile Dry
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Riparian Cover (% of watercours Signatural Watercourse Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Cover (% of watercourse Riparian Cover (% of watercourse) R	se shaded, dominating of the shaded seems areas, ground services, permanent)  pezoidal Channel Dugout Pond	Boulder Cant vegetation, manual vegetation, vegeta	ture or earl	y succession Buri	nal)  ed Tile Dry
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Zone Riparian Zone Riparian Zone Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Riparian Cover (% of watercours) Adjacent Land Use Rip	se shaded, dominating of the shaded seems areas, ground services, permanent)  pezoidal Channel Dugout Pond	Boulder Cant vegetation, manual vegetation, vegeta	ture or earl	y succession Buri	nal)  ed Tile Dry
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Riparian Cover (% of watercours Signatural Watercourse Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Cover (% of watercourse Riparian Cover (% of watercourse) R	se shaded, dominating of the shaded seems areas, ground services, permanent)  pezoidal Channel Dugout Pond	Boulder Cant vegetation, manual vegetation, vegeta	ture or earl	y succession Buri	nal)  ed Tile Dry
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Riparian Cover (% of watercours Signatural Watercourse Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Cover (% of watercourse Adjacent Land Use Riparian Cover (% of watercourse Riparian Cover (% of watercourse) R	se shaded, dominating of the shaded seems areas, ground services, permanent)  pezoidal Channel Dugout Pond	Boulder Cant vegetation, manual vegetation, vegeta	ture or earl	y succession Buri	ed Tile
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Riparian Zone	se shaded, dominative shaded, dominative shaded, dominative sery areas, ground shape areas, ground shape shaded channel bugout Pond Wildlife Observa	Boulder  ant vegetation, manual vegetation, vegeta	ture or earl	y succession Buri	nal)  ed Tile Dry
Cover Types Present (circle): Dverhanging Vegetation Wo Riparian Zone Riparian Cover (% of watercours Adjacent Land Use Riparian Zone	se shaded, dominating of the shaded seems areas, ground services, permanent)  pezoidal Channel Dugout Pond	Boulder  ant vegetation, manual vegetation, vegeta	ture or earl	y succession Buri	nal)  ed Tile Dry

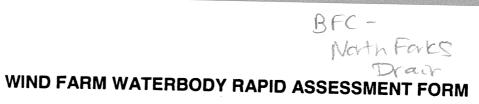




BFC-North Fores Drain Non PEA

			Process 1
Stantec			
Station # (67-)	<b>m</b> : t	No. 1	i
Watercourse Name Linknam	Project Name	liagara Winc	
Photos —	Project #	10069	
Photos Date June 20/12	Field Staff M. Fo	iella, M. Flic	7 A
Weather conditions in previous 24 hrs hot	Time 14:47		
GPS Coordinates (Zone) 617552 E 475			
Descriptive Location off of Huly		Thurs (Eymh	Datum 177
			1, 0, 10,
Water Quality	and the same of th		
Dissolved Oxygen (mg/L) pH_	Conductiv	ity (μ <u>S</u> /cm)	
Water Temperature (°C)	Air Temperature (°	C) (32)	
Time in situ measurements taken		9 38	
Watercourse Dimensions & Morphology			
Mean Watercourse Width (m)	Maximum Pool Dep	oth	(cm)
wear bankfull width (m)	Mean Water Depth		(cm)
% Riffle % Po	<b>^</b>	9/ Dun	(6.11) % Fla
Evidence of eroding banks, Comments on bank s	stability		
Substrate (% cover)			
BoulderGravel	Sand	Silt	Muck
Glavel	Clay	Marl	Detritus
In-water Cover			
Cover Types Present (circle): Undercut Ba	inks Deep Pool	Watercress	Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Othe		Aqualic Veg
Riparian Zone			
Riparian Cover (% of watercourse shaded, domina	ant vagatation —		
	ant vegetation, mature	or early succession	onal)
Adjacent Land Use			
farmland			
Fish Habitat Potential			
Critical Habitat (spawning or nursery areas, ground	dwater upwellings)		
Migratory Obstructions (seasonal, permanent)			
11/1			
lote any fish observations			
John M. A. A.			
Vaterbody Notes	•		
latural Watercourse Trapezoidal Channel	Grassed Sv	waleBur	ied Tile
urficial Drainage (i.e. furrows) Dugout Pond	d Dominated by	y Aquatic Veg	_ Dry
ther Habitat Notes, Incidental Wildlife Observa			
,			
N = 11			
eld Notes Authored by Faifla Field Notes of	QA/QCed by TIC		



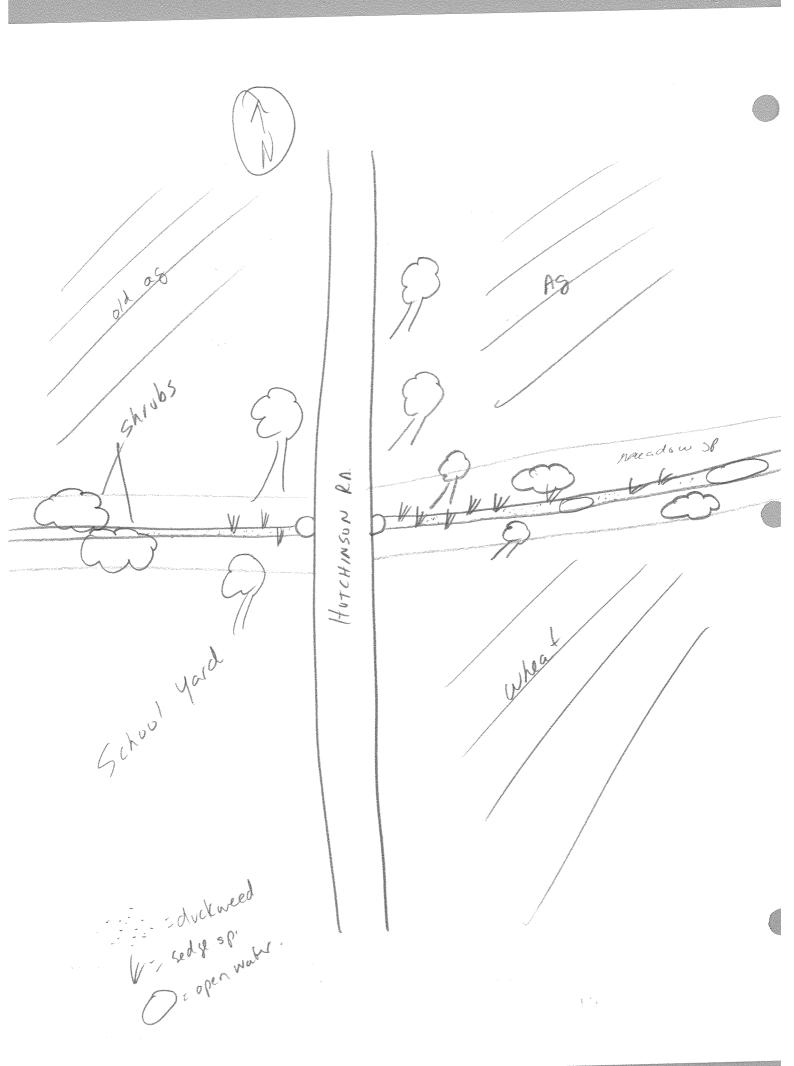


Station #	Project	Name Niaga	a shad	
Watercourse Name unknown	Project	# 1009 772	<u> </u>	
Photos Date June 20/12	Field St		Hielan	
Date June 20/12	Time _		TIFF IVE VI	
Weather conditions in previous 24 hrs	hot & hum			
GPS Coordinates (Zone) 617802 E	4752897	N	Datu	m 17+
Descriptive Location Nof Hu	NB. Pasto	C (07-1	Datu	111 / / 1
	ŧ /			
Water Quality	and the state of t			
Dissolved Oxygen (mg/L)	nН	Conductivity ( 01)		
Water Temperature (°C)	Air Tom	Conductivity (µS/ci	m)	
Time in situ measurements taken	All rem	perature (°C) <u>3</u>	ferman,	
Watercourse Dimensions & Morpholo				
Mean Watercourse Width (m		m Pool Depth	(cm)	
Mean Bankfull Width(m % Riffle	<i>)</i> wean w	ater Depth	(cm)	
	" % POOL	% Ru	n	% Flat
Evidence of eroding banks, Comments	on bank stability _			
Substanta (0/)				
Substrate (% cover)	· · · · · · · · · · · · · · · · · · ·			
	bbles	and	_Silt	_Muck
BoulderGra	avelC	lay	Marl	 Detritus
In-water Cover				
Cover Types Present (circle): Und	dorout Pontre			
Overhanging Vegetation Woody Del	bric Danks D	eep Pool Water	cress Aqu	atic Veg
	oris boulder	Other		
Riparian Zone				
Riparian Cover (% of watercourse shade	d, dominant vegetati	on, mature or early	Successional	
	3		successional)	
Adjacent Land Use				
tarmand				
Figh Habitat Datametal				
Fish Habitat Potential				
Critical Habitat (spawning or nursery area	is, groundwater upw	ellings)		
Migratory Obstructions (seasonal, permai	Mandannian Company			
	ierit)			
Note any fish observations				
Waterbody Notes				
Natural Watercourse Transmitted	<b>O</b> 1 .			
Natural Watercourse Trapezoidal	Channel	Grassed Swale	Buried Ti	ile
Surficial Drainage (i.e. furrows) Du	gout Pond Do	ominated by Aquation	: Veg r	Dry
Other Habitat Notes, Incidental Wildlife	Onservations, etc.			
eld Notes Authored by M. Faicla	Field Notes QA/QCed by	76		
	rieid Notes QA/QCed by	Λ		





Substrate (% cover)  Bedrock Cobble 10 Sand 40 Silt 40 Muc	Startiet	JEK-		
Watercourse Name	Station # 68-1		Project Name   h \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1
Photos		201.10	Project Name Nagara	MIVA
Weather conditions in previous 24 hrs minor race p  GPS Coordinates (Zone) 17 E 062 0309 N 475 517 1 Datum No  Descriptive Location	Photos See Mate 195	100071	Field Stoff	9
Weather conditions in previous 24 hrs minor race p  GPS Coordinates (Zone) 17 E 062 0309 N 475 517 1 Datum No  Descriptive Location	Date 2013 Dh 19		Time Wise	
GPS Coordinates (Zone) 171 E 062 6309 N 4755171 Datum N Descriptive Location	Weather conditions in previo			
Descriptive Location	GPS Coordinates (Zone)	21 F 060	209 11 11 25 615 1	
Water Quality Dissolved Oxygen (mg/L) 9.61 pH 4.07 Conductivity (µS/cm) 960 Water Temperature (°C) 30°2 Time in situ measurements taken 15.01  Watercourse Dimensions & Morphology Mean Watercourse Width 3.0 (m) Maximum Pool Depth 20 (cm) Mean Bankfull Width 90 (m) Mean Water Depth 15 (cm) % Riffle 100 % Pool % Run % Evidence of eroding banks, Comments on bank stability None observed well ugt.	Descriptive Location			Datum NAO S
Dissolved Oxygen (mg/L) 9.61 pH 4.07 Conductivity (µS/cm) 960  Water Temperature (°C) 30°2  Time in situ measurements taken 15:01  Watercourse Dimensions & Morphology  Mean Watercourse Width 3.0 (m) Maximum Pool Depth 20 (cm)  Mean Bankfull Width 70 (m) Mean Water Depth 15 (cm)  % Riffle 100 % Pool 8 Run 9  Evidence of eroding banks, Comments on bank stability None book or depth 19 (cm)  Substrate (% cover)		THO CHIPON RO	- SOUTH MOTTH OF HUME	<u> </u>
Dissolved Oxygen (mg/L) 960  Water Temperature (°C) 30°2  Time in situ measurements taken 1501  Watercourse Dimensions & Morphology  Mean Watercourse Width 30 (m) Maximum Pool Depth 20 (cm)  Mean Bankfull Width 70 (m) Mean Water Depth 15 (cm)  % Riffle 100 % Pool 8 Run 9  Evidence of eroding banks, Comments on bank stability None book or d Well next or d  Substrate (% cover)	Water Quality			
Watercourse Dimensions & Morphology  Mean Watercourse Width 3.0 (m) Maximum Pool Depth 20 (cm)  Mean Bankfull Width 70 (m) Mean Water Depth 15 (cm)  ———————————————————————————————————	Dissolved Oxygen (mg/L)	3,61	4.02	01 -
Watercourse Dimensions & Morphology  Mean Watercourse Width 3.0 (m) Maximum Pool Depth 20 (cm)  Mean Bankfull Width 70 (m) Mean Water Depth 15 (cm)  ———————————————————————————————————	Water Temperature (°C)	<u>0                                    </u>	Conductivity (µS/cm)	760
Watercourse Dimensions & Morphology  Mean Watercourse Width 3.0 (m) Maximum Pool Depth 20 (cm)  Mean Bankfull Width 70 (m) Mean Water Depth 15 (cm)  ———————————————————————————————————	Time in situ measurements ta	aken 15 51	Air Temperature (°C) 30°C	
	Watercourse Dimensions & Mean Watercourse Width Mean Bankfull Width % Riffle	Morphology 3.0 (m) 0 (m) 6 (c)		
	Cubetnete (9)			<u> </u>
Boulder Cross Sand 40 Silt 40 Muc				
	Bedrock	Cobble	/	
	Boulder	Gravel	<u>/                                    </u>	Detritus
Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Voverhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  15% Shorts and canon gass mature free ge Sedge  Adjacent Land Use	Riparian Zone Riparian Cover (% of watercou	Woody Debris urse shaded, domina ^~~~~~~~~~	Boulder Other	
school (a +ag ticlas.	school (a tee	110105 -		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Spawn, Black, NV/Serv. Migratory Obstructions (seasonal, permanent)  [ack of water, thick to ver	Critical Habitat (spawning or nu Spawn, Briage, NV/Stage, NV/Stage, NV/Stage) Migratory Obstructions (season	nal. permanent)		
lack of water, thick to very.  Note any fish observations Now.	Note any fish observations	Nov.		
Naterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc	Vaterbody Notes Natural Watercourse T Surficial Drainage (i.e. furrows)	rapezoidal Channel _ ) Dugout Pond	Grassed Swale Dominated by Aquatic Veg_	Buried Tile
eld Notes Authored by MF Field Notes QA/QCed by MEE				





REA

Station # 69-1		Proi	ect Name	Niana	- A 1	read	
Watercourse Name "SY sour	n	Proje	ect #//_	1050	2/00	OI/\C	
Photos See photo lo	<u> </u>		Staff		$\alpha \omega$		
Date 2012 no 19	<del>0</del>		15:11	IP-, VVIP		·····	
Weather conditions in previous	24 hrs Mrs	we po			~		
GPS Coordinates (Zone) i テ		0, 91	N N	4754	-119	Detail	- 1100
Descriptive Location On	tutchinson Q		300 m	2001 July	FIL	<u>Datui</u>	MNA08
			Joon .	700+1	3 · P+ 0	<u> </u>	
Water Quality						3,73	L.
Dissolved Oxygen (mg/L) 3	87 pH	7.69	Conduct	ivity (uS/c	m) 7	54	
Water Temperature (°C) 29	4.97	Air T	emperature	(ο <b>C</b> ) 3	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
Time in situ measurements take		,	omporataro :	(0)			
Watercourse Dimensions & N	Morphology						
Mean Watercourse Width 20	O (m)	Maxir	num Pool D	enth a	20	(cm)	The same of
Mean Bankfull Width 7.0		Mean	Water Dep	b /	<del>\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ </del>	(cm)	
% Riffle	100 %P		· · · · · · · · · · · · · · · · · · ·	% Ru	in .	(0111)	% Fla
Evidence of eroding banks, Cor			none c				/0 1 la
	ì		20.70				
Substrate (% cover)	× 105.						
Bedrock	Cobble	10	Sand	40	_Silt	20	_Muck
Boulder	Gravel	20	_Clay		Marl		Detritus
Cover Types Present (circle): Overhanging Vegetation W  Riparian Zone	oody Debris	Bould		ner			atic Veg
Riparian Cover (% of watercours	se shaded, domin	ant vege	tation, matu	re or early	succes	sional)	
3% sparce shrubs	red cundy						
Adjacent Land Use							
ag rds,	•						
Fish Habitat Potential Critical Habitat (spawning or nur	rsery areas, groun	idwater u	pwellings)				
Migratory Obstructions (seasons	al, permanent)						
Note any fish observations w	~						
Manage of the second							
Waterbody Notes		. /					
Natural Watercourse Tra	apezoidal Channe	<u> </u>	Grassed	Swale	8	luried T	ile
Surficial Drainage (i.e. furrows)	Dugout Por	nd	Dominated	by Aquati	c Veg		Dry
Other Habitat Notes, Incidental	l Wildlife Observ	ations, e	tc				
Field Notes Authored by	Field Notes	QA/QCed b	y_NEE	,			

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

meadousp. HUTCHINSON RR. meadow sp Shorb 6010 = thick duckweed = sed 8 3 P.

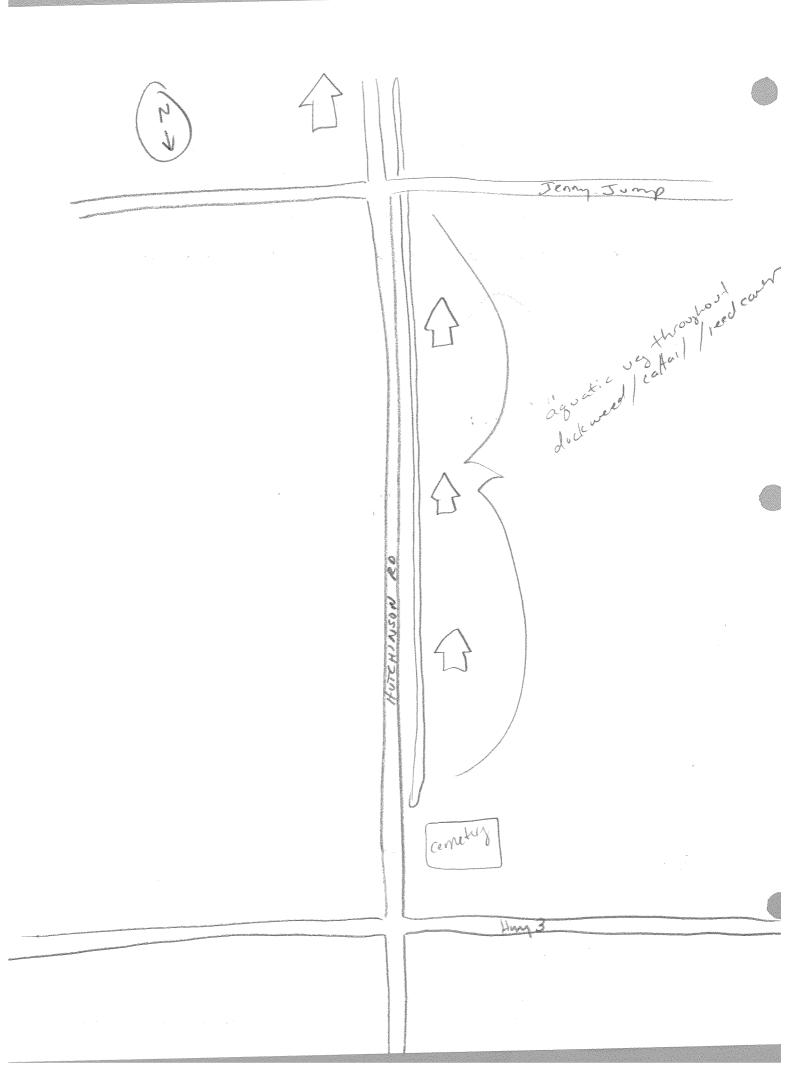


Field Notes Authored by

## WIND FARM WATERBODY RAPID ASSESSMENT FORM

REA

Stantec	
Station #69. 2	Project Name Niagara Wind
Watercourse Name Volknown	Project #_//0950269
Photos Soo Direto los.	Field Staff ME, ME
Date 2012'06 19	Time Sizz
Weather conditions in previous 24 hrs	NU DRUP
GPS Coordinates (Zone) 177 E O	1621122 N 4753920 Detumble
Descriptive LocationAlone Hutchin	SON Rd Flom - 50 South of 11, 2
to w 100 m south out Jennu	of Tump Rd on West Side Rons Polal
Water Quality	•
	ĎΗ Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C) 30°c
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width $\frac{\partial \cdot \partial}{\partial \cdot}$ (m)	Maximum Pool Depth/ cm)
Mean Bankfull Width 4. (m)	Mean Water Depth 5 (cm)
	6 Pool % Run % I
Evidence of eroding banks, Comments on bar	nk stability No flow. No observed eros
Substrate (% cover) BedrockCobbleBoulderGravel  In-water Cover Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris	Clay Marl Detritu
Adjacent Land Use	minant vegetation, mature or early successional)
houses, sd, ag.	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, gro  Spawn for a nursery areas, gro  Migratory Obstructions (seasonal, permanent)  Act of water  Note any fish observations	
Note any fish observations	
Vaterbody Notes latural Watercourse Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F Other Habitat Notes, Incidental Wildlife Obse	Pond Dominated by Aquatic Veg Dry
latural Watercourse Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F	





REA

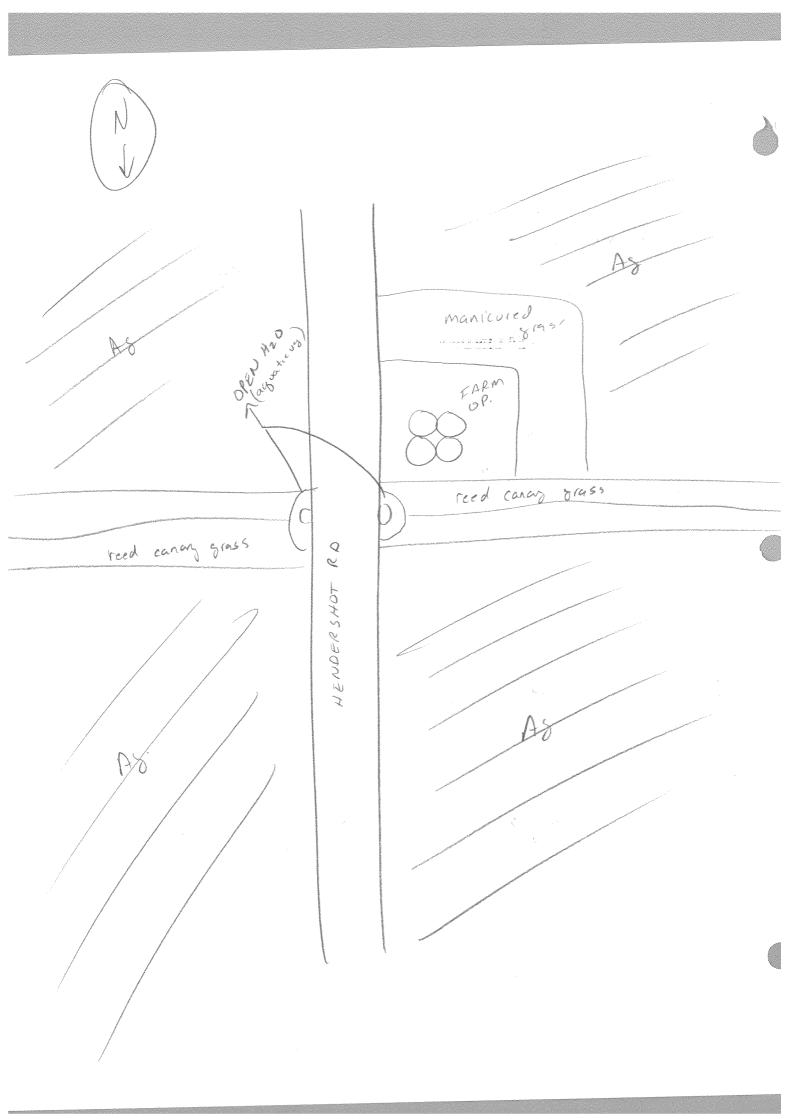
Station #	Pro	ect Name Nia	gara Win	d
Watercourse Name V Nknown	Pro	ect #_// ₀ 095	50269	
Photos see ohato 100		d Staff MEIN	<u> 1                                   </u>	
Date 4012 DE 19	Tim	e 15:56		
Weather conditions in previous 24	hrs hot + humi	d minor prec	ip	
GPS Coordinates (Zone) 197	E 0622 993	N 47	55428 Dat	tum NAD8
Descriptive Location On Two	line Dunnville/W	xinfleet rd -	800m Sou	th of
Bickner Rd				
Water Quality				
Dissolved Oxygen (mg/L) 3.98	pH <u> 7.93</u>	Conductivity (μ	S/cm) 579	
Water Temperature (°C) 23 2		emperature (°C)		
Time in situ measurements taken_	16:03			
Watercourse Dimensions & Morp	ahology			
Mean Watercourse Width 3.0	(m) May	mum Pool Depth	50 (cm	1
Mean Bankfull Width 6.6		n Water Depth	30 (cm	•
% Riffle	DO % Pool	%	Run	, % Fk
Evidence of eroding banks, Comme				
recent diedging un sou		· ·		
Substrate (% cover)				
Bedrock	Cobble	Sand4 <i>0</i>	Silt 40	Muck
Boulder	Cobble _Gravel20	Clay	Marl	Detritus
Riparian Cover (% of watercourse s	haded, dominant veg	etation, mature or e	arly successiona	1)
Adjacent Land Use				
green houses houses				
Fish Habitat Potential Critical Habitat (spawning or nursery  Spawn William (seasonal, polytical) Migratory Obstructions (seasonal, polytical) Note any fish observations	ermanent)	upwellings)		
Waterbody Notes Natural Watercourse Trapez	zoidal Channel	Grassed Swale	Buried	Tile
Surficial Drainage (i.e. furrows)		Dominated by Aq		Dry
Other Habitat Notes, Incidental Wi				<del></del>
Field Notes Authored by				

DONVILLE / WAINFLORT Shrubs/tres Scour Greenhoops XXX = Nuckureed.



REA

Station #		Proie	ect Name	Niagara L	wind	
Watercourse Name vnknown		Proje	ect # 1/0/	1950269	1	
Photos See photo log			Staff 7			
Date 2012 06 19"			16 22			
Weather conditions in previous 2		pacif	1.			
GPS Coordinates (Zone) 131	E 0623	5948	N	4755150	Datun	NAD83
Descriptive Location Dn	endershot R	dmi	100m so	oth of Huma	3. Nec	<u> </u>
turn silvs		ă.		T.		
Water Quality						
Dissolved Oxygen (mg/L)	<u></u>		Conduct	ivity (μS/cm)		
Water Temperature (°C)		Air Te	emperature (	(°C)2'8°c		<del></del>
Time in situ measurements taken			•			
Watercourse Dimensions & Mo	rphology					
Mean Watercourse Width 2 0	(m)	Maxir	num Pool [*] De	epth	(cm)	
Mean Bankfull Width 5 p	(m)	Mean	Water Dept	h 50	(cm)	
	100 % Po	ol	Trailer Bop.	% Run	(CIII)	% Fla
Evidence of eroding banks, Comm	nents on bank st	ability	Moré.			/0 1 10
			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
Substrate (% cover)			,			
Bedrock	Cobble	10	_Sand	40 Silt	30	Muck
Boulder_	Gravel 2	0	_Clay	Mart		Detritus
Riparian Zone Riparian Cover (% of watercourse  3/2 100 000000000000000000000000000000000					ssional)	
as helds, id.	•		ļ			
Fish Hobitat Batantial						
Fish Habitat Potential Critical Habitat (spawning or nurse	ry areas, ground	water u	pwellings)			
Migratory Obstructions (seasonal,	permanent)	178				
lack of water thick	= reed ranc	n ax	2.55		•	
Note any fish observations note	2 ·	9 9				
Waterbody Notes						
Natural Watercourse Trape	ezoidal Channel	$\vee$	Grassed :	Swale	Buried Til	۵
Surficial Drainage (i.e. furrows)	Dugout Pond	i de	Dominated	by Aquatic Veg	/	)ry
		ri U		-		" <u>y</u>
Other Habitat Notes, Incidental W	Viidlife Observat	tions, e	tc			
				,	·	
Teld Notes Authored by	. Field Notes Q	WQCed b	MEE MEE			



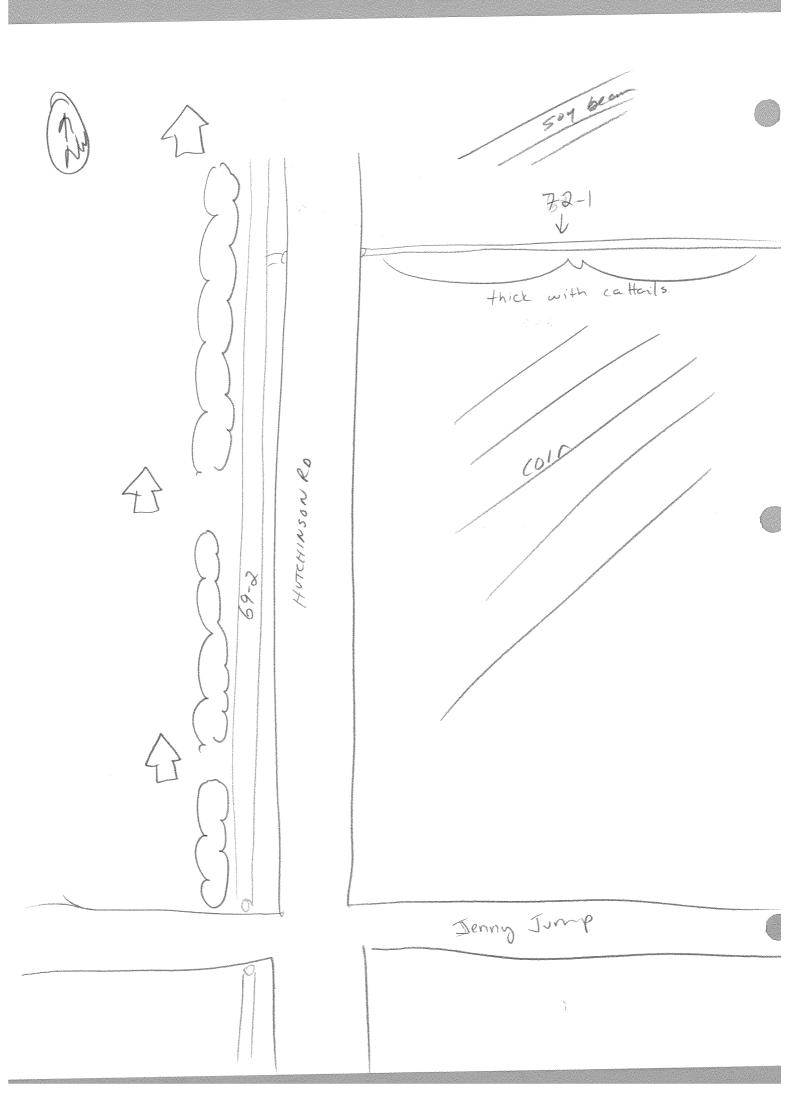
Defined ne'
REA



# WIND FARM WATERBODY RAPID ASSESSMENT FORM

Station #	Pr	oject Name <u>N</u>	iadara	Jind
Watercourse Name UNKNOWN	Pr	oject #//_00	950269	
Photos Su Mato 105	Fi	eld StaffM	EMP	
Date 2012 06 19	Ti	ne <u>15:37</u>		
Weather conditions in previous 24	thrs Minor pre	ci O.		
GPS Coordinates (Zone) 171	E 0621115		4753895	Datum N
Descriptive Location On Huko	thinson Rd ~ 2	50m north	of Jenny	Jump Ro
Wațer Quality	/			
Dissolved Oxygen (mg/L)	pH	Conductivit	y (μS/cpr)	
Water Temperature (°C)	Air	Temperature (°C	)"//	
Time in situ measurements taken				
Watercourse Dimensions & Mor	. ••		1.	
Mean Watercourse Width 20		ximum Pool Dept	h <u>~/A</u>	_(cm)
Mean Bankfull Width 5.0	(m) Me	an Water Depth_	NA	_(cm)
<u> </u>	% Pool		% Run	
Evidence of eroding banks, Comm	ients on Dank Stadilit	/		
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Mu
Boulder	Gravel	Clay	Marl	Del
In-water Cover Cover Types Present (circle):	Undercut Banks	Deen Pool	Watereree	A mumble 1
Cover Types Present (circle):	Undercut Banks dy Debris Boo	Deep Pool Ilder Other	Watercress	Aquatic '
Cover Types Present (circle): Overhanging Vegetation Wood Riparian Zone	dy Debris Bou	ılder Other		• •
Cover Types Present (circle): Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse):	dy Debris Boo shaded, dominant ve	ılder Other		· · · · · · · · · · · · · · · · · · ·
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:	dy Debris Boo shaded, dominant ve	older Other		• •
Cover Types Present (circle): Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse :  \( \frac{\frac{1}{2}}{2} \) Adjacent Land Use	dy Debris Boo shaded, dominant ve	older Other		• •
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:	dy Debris Boo shaded, dominant ve	older Other		· · · · · · · · · · · · · · · · · · ·
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:  Adjacent Land Use	dy Debris Boo shaded, dominant ve	older Other		• •
Cover Types Present (circle): Overhanging Vegetation Wood Riparian Zone Riparian Cover (% of watercourse: Adjacent Land Use Fish Habitat Potential	dy Debris Boo shaded, dominant ve うりべる ちんい	llder Other getation, mature ∈		• •
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse and Cove	dy Debris Boo shaded, dominant ve うりべる ちんい	llder Other getation, mature ∈		• •
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse (%)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser	dy Debris Bou shaded, dominant ve うりべる ちんい ry areas, groundwate	llder Other getation, mature ∈		• •
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Doby Ok Down  Migratory Obstructions (seasonal, p	shaded, dominant ve シャイション・シャン・シャン・シャン・シャン・シャン・シャン・シャン・シャン・シャン・シャ	llder Other getation, mature ∈		· · · · · · · · · · · · · · · · · · ·
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Doss ble Spawn  Migratory Obstructions (seasonal, park of wake in the	shaded, dominant ve	llder Other getation, mature ∈		· · · · · · · · · · · · · · · · · · ·
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Doby Ok Down  Migratory Obstructions (seasonal, p	shaded, dominant ve	llder Other getation, mature ∈		• •
Cover Types Present (circle):  Overhanging Vegetation Wood  Riparian Zone  Riparian Cover (% of watercourse:  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  DOSSIDE SPAWN  Migratory Obstructions (seasonal, possible of water possib	shaded, dominant ve	llder Other getation, mature ∈		• •
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  DOSTIDLE DAWN  Migratory Obstructions (seasonal, posting of the posting	shaded, dominant ve	getation, mature	or early success	sional)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Dost Ole Spawn  Migratory Obstructions (seasonal, part of water p	shaded, dominant ve	getation, mature of the state o	valeB	sional)
Cover Types Present (circle):  Overhanging Vegetation Wood  Riparian Zone  Riparian Cover (% of watercourse:  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  DOSSIDE SPAWN  Migratory Obstructions (seasonal, possible of water possib	shaded, dominant ve	getation, mature of the state o	or early success	sional)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser Dossi Dic Spawn  Migratory Obstructions (seasonal, part of water Adjacent Land Use  Waterbody Notes  Natural Watercourse Trape  Surficial Drainage (i.e. furrows)	shaded, dominant ve  Shaded, dominant ve  Shaded, dominant ve  Shaded, dominant ve  The shaded of th	getation, mature of the second	valeB	sional)  uried Tile_ Dry_
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse:  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Dost Ole Spawn  Migratory Obstructions (seasonal, part of water p	shaded, dominant ve  Shaded, dominant ve  Shaded, dominant ve  Shaded, dominant ve  The shaded of th	getation, mature of the second	valeB	uried Tile_
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser Dossi Dic Spawn  Migratory Obstructions (seasonal, part of water Adjacent Land Use  Waterbody Notes  Natural Watercourse Trape  Surficial Drainage (i.e. furrows)	shaded, dominant ve  Shaded, dominant ve  Shaded, dominant ve  Shaded, dominant ve  The shaded of th	getation, mature of the second	valeB	uried Tile_

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

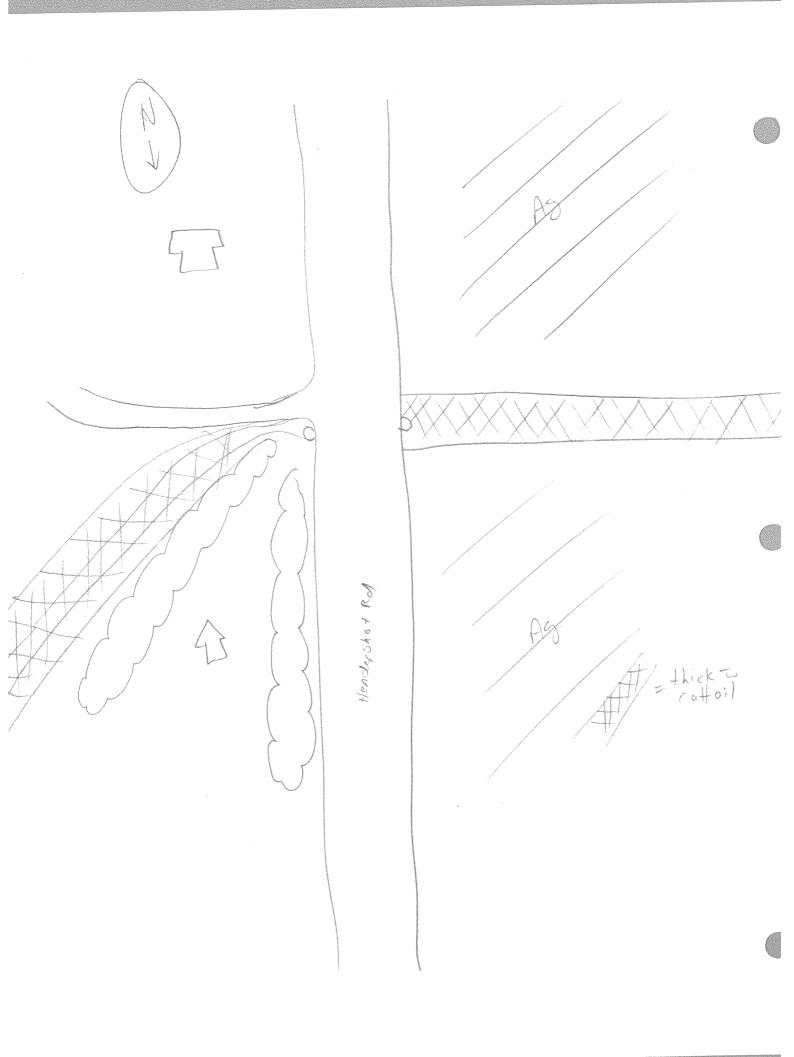




REA DRY

Station # 73-		Duningt Name	lana a mi	bair
Watercourse Name unkno		Project Name	Jagara L	011 (01
Photos _ See photo 105.		Project # (o) Field Staff		
Date June 20/12		Time		
Weather conditions in previous	24 hrs No Dr	(i D		
GPS Coordinates (Zone)			4754257	Datum Na
Descriptive Location Dn		- 400 m noct)		Dunville/
Water Quality	***************************************			
Dissolved Oxygen (mg/L)	pH	Conducti	vity (μS/cm)	
Water Temperature (°C)		Air Temperature (		
Time in situ measurements tak	en			
Watercourse Dimensions & M	Morphology			
Mean Watercourse Width 2. Mean Bankfull Width 4.0	<u>▷(m)</u>	Maximum Pool De		(cm)
% Riffle			n % Ru <b>n</b>	(cm)
Evidence of eroding banks, Co	% Po	tability	% Hun	%
Substrate (% cover)			B	
Bedrock		Sand		
Boulder	Gravel	<u> </u>	Marl	Detrit
Overhanging Vegetation W Riparian Zone	voody Deblis	Boulder Oth	let	
Riparian Cover (% of watercould the caret Land Use	rse shaded, domin	ant vegetation, matu	re or early succe	ssional)
Adjacent Land Use				
as fields, houses.				
Clab Uabitat Datautial				
<b>Fish Habitat Potential</b> Critical Habitat (spawning or nu	irsery areas arour	idwater unwellings)		
nossible snawn				
Migratory Obstructions (season	ial, permanent)			
Note any fish observations	none dry			
	<i>}</i>			
<b>Waterbody Notes</b> Natural Watercourse Ti	rono-raidal Channe		Overda	D 1 1 7 1
Surficial Drainage (i.e. furrows)	Puggut Po	drassed	Swale	Buried Tile
Surnola: Drainage (i.e. lullows)	Dugout Pol	iu Dominated	by Aquatic veg	Dry
Other Habitat Notes, Incident	al Wildlife Obsen	ations. etc.		
,				
Field Notes Authored by			part -	

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



BFC- East Kelly Drain Non R





Station #	hrs	in me Dunnuil	L-Way	atum / T
Water Quality Dissolved Oxygen (mg/L)	pH_	Conductivity (μS	arth of	<u> </u>
Water Temperature (°C) Time in situ measurements taken_		Air Temperature (°C)	a°C	
Watercourse Dimensions & Mor Mean Watercourse Width Mean Bankfull Width % Riffle Evidence of eroding banks, Comm	(m) (m) % Po	Maximum Pool Depth Mean Water Depth ool% stability	(CI	m) m) % Flat
Substrate (% cover) BedrockBoulder	Cobble	Sand Clay	Silt Marl	Muck Detritus
In-water Cover Cover Types Present (circle): Overhanging Vegetation Wood	Undercut Ba dy Debris	nks Deep Pool Wa Boulder Other	tercress	Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse:	shaded, domina	ant vegetation, mature or ea	rly succession	al)
Adjacent Land Use	~ 4			
<b>Fish Habitat Potential</b> Critical Habitat (spawning or nurser	y areas, ground	dwater upwellings)		
Migratory Obstructions (seasonal, p	permanent)			
Note any fish observations				
Waterbody Notes Natural Watercourse Trape. Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidental W				
ield Notes Authored by M. Faiella	Field Notes			



REA

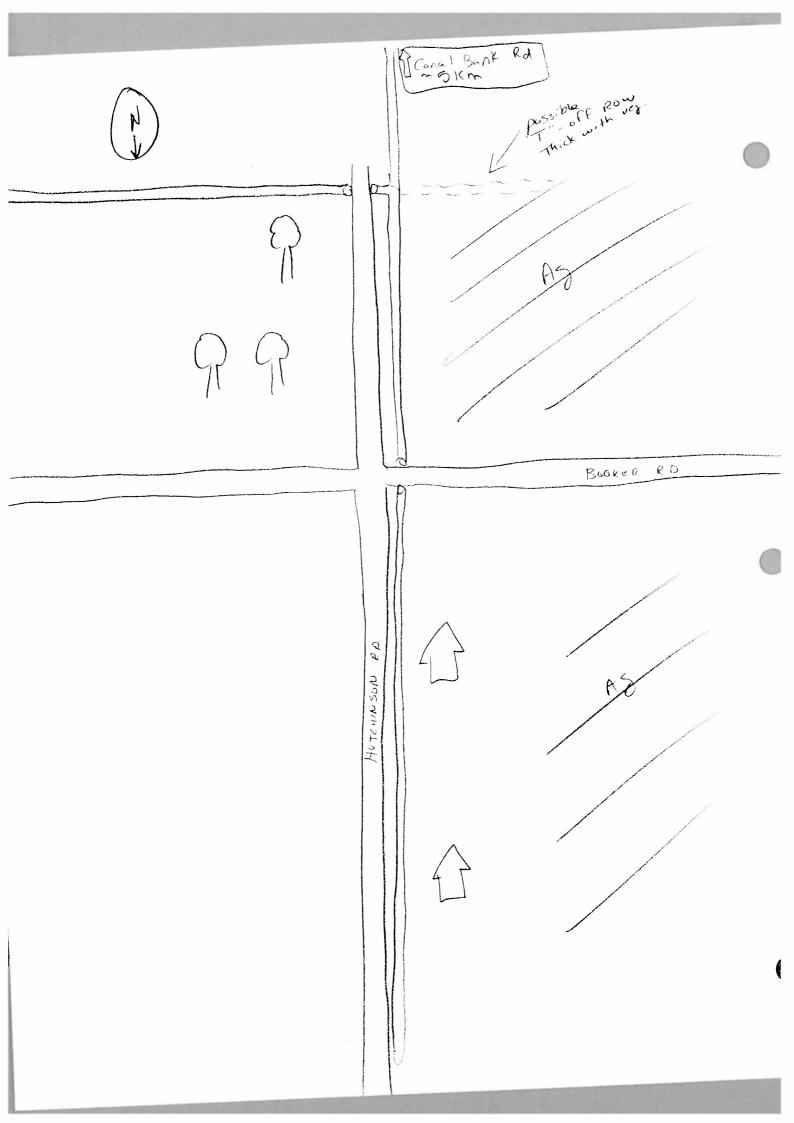
Stantec  Station #	DDY RAPID ASSESSMENT FORM  ENDS  Bender
Watercourse Name UNV na.	
Watercourse Name UNV na.	
Watercourse Name Why Main	Project Name Niagara Wind
Photos San al I	Project #1/009(%) 2 (69
Photos See Dhoto log Date June 20/12.	rield Staff MEIME
Weather conditions in provious 241	Ti
Weather conditions in previous 24 hrs hot GPS Coordinates (Zone) 171 E	
Descriptive Location Do 1/1/1/2017	N Datum N
From ~ boom porthag & V.	don west side of road (perallel)
Start: 17T 0621757, 4752809 END	= 17T Obs Mary Transfer
Water Quality	9 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
g Dissolved Oxygen (mg/L) pH_	Conductivity (µS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	vai remperature ( C)
Watercourse Dimensions & Morphology	
mean watercourse Width 3.0 (m)	Maximum Pool Depth(cm)
Mean Bankfull Width 6.0 (m)	Mann Mater Devil
% Riffle IDD % Pc	0.0
Evidence of eroding banks, Comments on bank s	stability <u>some dredging @ northern</u> end
·cucy	ON THE MAN SE
Substrate (% cover)	
BedrockCobble_	
BoulderGravel	1D Class
In-water Cover	70 Clay Marl Detr
Cover Types Present (circle): Undercut Bar	
Overhanging Vegetation Woody Debris	
	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, domina	ant vegetation, mature or early avecage is
20% Sumac, other shrubs, reed canan	grass, cather pockets of mature trees
Adjacent Land Use	10 matur trees
Rds, nouses, as fillds	5
Fish Habitat Potential	
Critical Habitat (commission as assessed	
Critical Habitat (spawning or nursery areas, ground	lwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations _ none	<b>5</b> .
The day non observations Appreh	
Matanha da Na	
Waterbody Notes	
Natural Watercourse Transpoidal Channel	Grassed Swale
Natural Watercourse Transpoidal Channel	Grassed Swale Buried Tile
Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatic Veg Dry
Natural Watercourse Transpoidal Channel	Dominated by Aquatic Veg Dry

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

Field Notes QA/QCed by ________

MV

Field Notes Authored by _





NON	
REA	,

SI	an	tec

Station # 73~2	Project Name Allena (1)
Watercourse Name unknown	Project Name Niagara Wind
Photos 913, 914, 91506	Project # 160958269
Date June 1/2.	Field Staff MEME Time 09:40
Weather conditions in previous 24 hrs no occ	11111e
GPS Coordinates (Zone) 17 E	
	N Datum Nad
	Located South of REA (73-1)
0	lyd on west property as well
Water Quality	
Dissolved Oxygen (mg/L) pH_	Conductivity (µS/cm)
vvater remperature (°C)	Air Temperature (°C)
Time in situ measurements taken	portution ( of
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	
	Maximum Pool Depth (cm)
0/ 0//	Mean Water Depth (cm)
Fyidence of eroding banks from the % Po	
Evidence of eroding banks, Comments on bank st	ability 4
Substrate (% cover)	
BedrockCobble /	Muck Silt Muck
BoulderGravel	IVIUCK
	Ctay Marl Detritus
In-water Cover	
Cover Types Present (circle): Undercut Ber	nks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Riparian Cover (% of watersource about 1	
Riparian Cover (% of watercourse shaded, domina	int vegetation, mature or early successional)
Adjacent Land Llos	and is dominated
Adjacent Land use by young terres	trial veg
	V
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	Nator upwallings)
	water upweilings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Matarhadu Natar	
Waterbody Notes	
Natural Watercourse Trapezoidal Channel	Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatic Veg Dry
	July Diy
Other Habitat Notes, Incidental Wildlife Observat	tions, etc.
·····/································	
ield Notes Authored by / / /   Field Notes Q	DA/QCed by MEE
V:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Si	tarried Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

23 TREP Tell Je within Dred & d Terrestrial vo within Townshire Pal 73-2 contid non REA



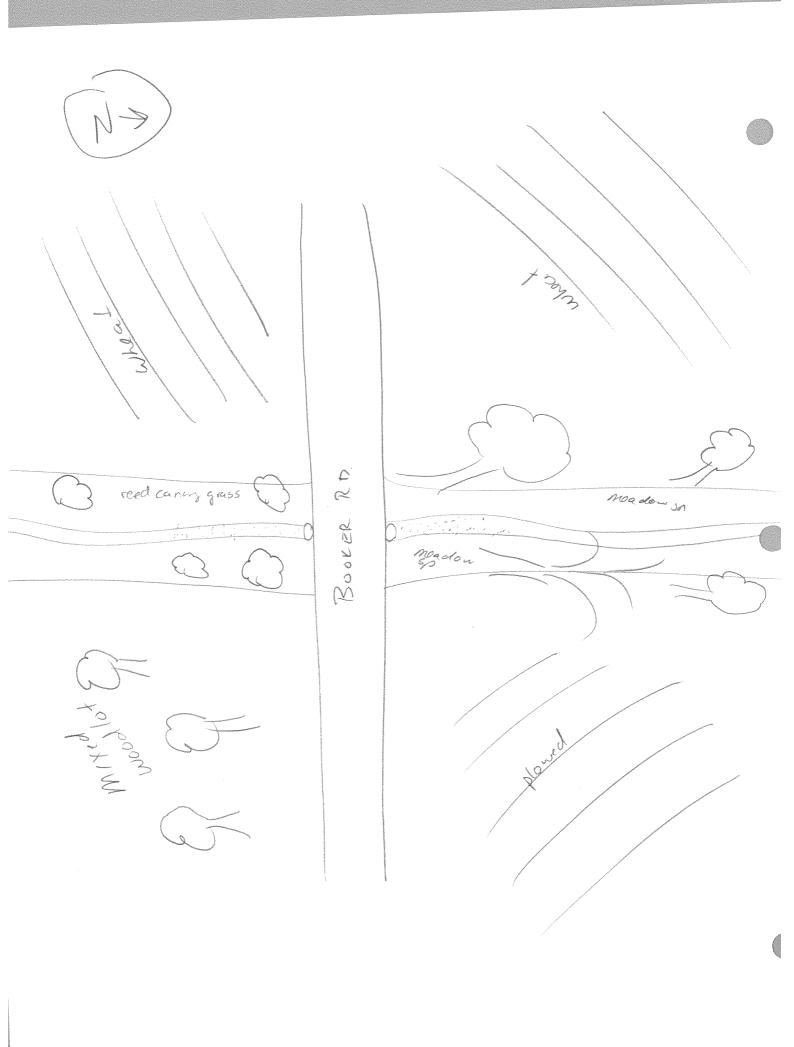
HON MI
REA

			DT RAPID ASSESS	MILLAL L'OUM	REA
)	Stantec				DR
,	Station #75-		Project Name 11	a o a i . ) . v	
1	Natercourse Name UnVna.5	$\overline{\gamma}$	Project Name	agara WII	(0)
	Photos Sy photo low Date June 20/12.		Project # <u>  1609</u> Field Staff	78964	
ł	Date June 20/12.		Time 09:53	17/17	
١	Veather conditions in previous 24	4 hrs None	111116 <u>- 6-6 - 7-7-7</u>		
(	GPS Coordinates (Zone) コプナ	F 5062	-3721 N4	757029 D	
l	Descriptive Location On Bo	oker Rd w	800m west of -	752879 Da	e Wainfle
- ۱ ه	Vater Quality				,
	Dissolved Oxygen (mg/L)	рН	Conductivity	dia Clares	
١	Vater Temperature (%)	Pri		(μS/cm)	
7	ime in situ measurements taken		Air Temperature (°C)		
	•			· · · · · · · · · · · · · · · · · · ·	
V	Vatercourse Dimensions & Mo	rphology			
	lean Watercourse Width	(m)	Maximum Pool Depth	n(cm	1
٨	lean Bankfull Width	(m)	Mean Water Depth_	(cm	,
_	% Riffle	% <b>F</b> C	ool -	_% Run	, % FI
Ė	vidence of eroding banks, Comm	nents on bank st	tability		/071
_					
S	ubstrate (% cover)				
Ī	Bedrock	Cobble	0 1		
	Boulder	Cobble Gravel	Sand		Muck
		Graver	Clay	<u>Marl</u>	Detritus
	-water Cover				
C	Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg				
O	verhanging Vegetation Woo	dy Debris	Boulder Other	Walerciess A	quatic Veg
			outer_		
ח	parian Zone				
	Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Shannel with dogwoodsp, poplar sp, summe, sed pine, other meadow sp.				
H			an vogetation, mature o	i earry successiona	1)
<u> </u>	- 100 W W W W W W W W W W W W W W W W W W	p, poplar sp,	Sumar, red Dive	. other meadou	ا) د ج۵۰
<del></del>	ljacent Land Use	p, poplar sp,	sumar, red pine	, other meado c	1) 3 sp
	- 100 W W W W W W W W W W W W W W W W W W	p, poplar sp,	sumar, sod pine	, other meado c	1) 
Ā	ljacent Land Use	p, poplarsp,	sumar, red pine	, other meado c	l) s sp
Fi	ijacent Land Use	p, poplar sp,	sumar, scopine	, other meado c	l) မ <u>နှစ</u>
Fi	ljacent Land Use	p, poplar sp,	sumar, scopine	other meado	1) 2 sp
FI	sh Habitat Potential itical Habitat (spawning or nurse)	ry areas, ground	sumar, scopine	other meadou	1) 
FIC	ijacent Land Use	ry areas, ground	sumar, scopine	other meadou	1) 2 5p
FI CI	diacent Land Use  sh Habitat Potential itical Habitat (spawning or nursel	ry areas, ground	sumar, scopine	other meado	1) 2 sp
FI C	sh Habitat Potential itical Habitat (spawning or nurse)	ry areas, ground	sumar, scopine	other meado	1) 3 sp
FI CI	diacent Land Use  sh Habitat Potential itical Habitat (spawning or nursel	ry areas, ground	sumar, scopine	other meadou	) 
Fi Ci Mi	diacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse) gratory Obstructions (seasonal, particular of the any fish observations	ry areas, ground	dwater upwellings)	other meado	) S SP
FI CI MI	diacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse) gratory Obstructions (seasonal, particular of the any fish observations	ry areas, ground	dwater upwellings)	, other meadou	υ sρ
Fi Ci Mi	diacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse) gratory Obstructions (seasonal, pute any fish observations  atterbody Notes tural Watercourse  Trape	ry areas, ground	dwater upwellings)  Grassed Swa	ale Buried	Σ Sρ
Fi Ci Mi No	diacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse) gratory Obstructions (seasonal, particular of the any fish observations	ry areas, ground	dwater upwellings)  Grassed Swa	, other meadou	Tile
FI CI MI No	diacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse) gratory Obstructions (seasonal, particular of the any fish observations  aterbody Notes tural Watercourse Traperficial Drainage (i.e. furrows)	ezoidal Channel	dwater upwellings)  Grassed Swatch Dominated by	ale Buried	Tile
Fi Ci Mi	diacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse) gratory Obstructions (seasonal, pute any fish observations  atterbody Notes tural Watercourse  Trape	ezoidal Channel Dugout Pond	dwater upwellings)  Grassed Swatch Dominated by	ale Buried	Tile

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

MY

Field Notes Authored by _







		1 TOJOOL Haino _	Niagaral	UINU
Watercourse Name UNKNOW	VN	Project #/(o	0950269	
Photos See Mato lay		Field Staff <u>M</u>	E, ME	
		Time 13.00	1	
Weather conditions in previous 2				
GPS Coordinates (Zone)	1 E 060	124	14749592	Datum N F
Descriptive Location On B	perallel)	100 m north o	Canal Bay	<u> </u>
Water Quality	,			
Dissolved Oxygen (mg/L)	pH <u>_</u>	Conduc	tivity (µS/em)	<u> </u>
Water Temperature (°C)		Air Temperature	(°C)	
Time in situ measurements take	n			
Watercourse Dimensions & Mo	orphology			
Mean Watercourse Width 1.5	(m)	Maximum Pool (	Depth	(cm)
Mean Bankfull Width 3.0	(m) [·]	Mean Water De	oth	(cm)
% Riffle	% P	ool	% Run	triangue 0
Evidence of eroding banks, Com	ments on bank	stability <u>nove</u>		
Substrate (% cover)				
	Cobble	Sand	<u> </u>	40 Mu
Boulder	Gravel	20 Clay	Mart	Det
In-water Cover Cover Types Present (circle): Overhanging Vegetation Wo	Undercut Ba	anks Deep Poo Boulder O	ol Watercress ther	Aquatic '
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours	oody Debris e shaded, domir	Boulder O nant vegetation, mat	therure or early succes	ssional)
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours	oody Debris e shaded, domir	Boulder O nant vegetation, mat	therure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone  Riparian Cover (% of watercours  10% Matter trees & Sha  Adjacent Land Use	oody Debris e shaded, domir	Boulder O nant vegetation, mat	therure or early succes	ssional)
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours	oody Debris e shaded, domir	Boulder O nant vegetation, mat	therure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours    O	oody Debris e shaded, domir	Boulder O nant vegetation, mat	therure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Of Matter Present (circle):  Wo  Riparian Zone  Riparian Use  Adjacent Land Use  Fish Habitat Potential	e shaded, domir	Boulder O	therure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone  Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs	e shaded, domir	Boulder O nant vegetation, mat	therure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone  Riparian Cover (% of watercours  /// Matter Present (circle):  Overhanging Vegetation  Wo  Riparian Zone  Riparian Zone  Riparian Cover (% of watercours  /// Matter Present (circle):  Overhanging Vegetation  Wo  Riparian Zone  Riparian Zone  Riparian Cover (% of watercours  /// Adjacent Land Use  // Adj	e shaded, domir	Boulder O  nant vegetation, mat  i pur lan 3 and  ndwater upwellings)	ure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  / **D/** **MATTICLE** ** Share  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs	e shaded, domir	Boulder O  nant vegetation, mat  i pur lan 3 and  ndwater upwellings)	ure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercours  / **D** **D** **D** **D** **D**  Adjacent Land Use  Adjacent Land Use  Critical Habitat Potential  Critical Habitat (spawning or nurs  Migratory Obstructions (seasonal  And Mark  Note any fish observations	e shaded, domir	Boulder O  nant vegetation, mat  i pur lan 3 and  ndwater upwellings)	ure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  /// Matter Potential  Critical Habitat Potential  Critical Habitat (spawning or nurs  Migratory Obstructions (seasonal  Angle  Note any fish observations  Waterbody Notes	e shaded, domir	Boulder O	ure or early succes	ssional)
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Migratory Obstructions (seasonal  Migratory Obstructions (seasonal  Waterbody Notes  Natural Watercourse Trap	e shaded, domir	Boulder O  nant vegetation, mat  To be the contact of the contact	therure or early succes	ssional)  Buried Tile_
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  /// Matter Potential  Critical Habitat Potential  Critical Habitat (spawning or nurs  Migratory Obstructions (seasonal  Angle  Note any fish observations  Waterbody Notes	e shaded, domir	Boulder O  nant vegetation, mat  To be the contact of the contact	ure or early succes	ssional)  Buried Tile_
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Migratory Obstructions (seasonal  Migratory Obstructions (seasonal  Waterbody Notes  Natural Watercourse  Surficial Drainage (i.e. furrows)	e shaded, domir	Boulder O  nant vegetation, mat  Total John  ndwater upwellings)  else Cara Grasse  nd Dominate	ther ure or early succes described succes described succes described succes described succes described succes described succes described succes described succes	Buried Tile
Cover Types Present (circle):  Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Migratory Obstructions (seasonal  Migratory Obstructions (seasonal  Waterbody Notes  Natural Watercourse Trap	e shaded, domir	Boulder O  nant vegetation, mat  Total John  ndwater upwellings)  else Cara Grasse  nd Dominate	ther ure or early succes described succes described succes described succes described succes described succes described succes described succes described succes	Buried Tile
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Migratory Obstructions (seasonal  Migratory Obstructions (seasonal  Waterbody Notes  Natural Watercourse  Surficial Drainage (i.e. furrows)	e shaded, domir	Boulder O  nant vegetation, mat  Total John  ndwater upwellings)  else Cara Grasse  nd Dominate	ther ure or early succes described succes described succes described succes described succes described succes described succes described succes described succes	Buried Tile

HE06600 N Coll of the sp. OLD PAIL BED B1R0 CANAL BANK RN

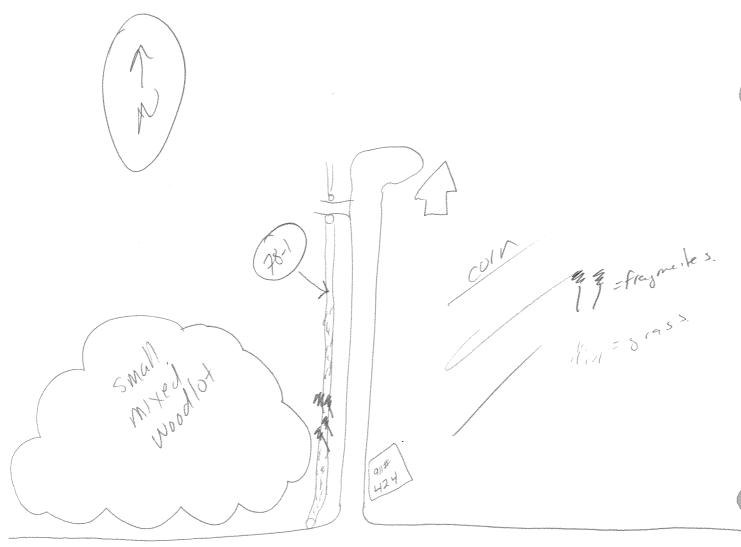
CORN SW EWI gw! Manicotto



OSS Row. Could not properly assess. Water object ved. Has been dradged but considered RBA westrouds. REA

#### WIND FARM WATERBODY RAPID ASSESSMENT FORM

	$\wedge$	Project # //^/)	950269	nd
Watercourse Name <u>unknow</u> Photos <u>See photo los</u>		Field Staff M		
Date 200-06 20	•	Гіте <u>із 38   </u>		
Weather conditions in previous				
GPS Coordinates (Zone)	E 06224	Q) N	4749465 [	Datum ⋈A
Descriptive Location On Con	al Banked - IK	m rast of Bi	rd Rd	
Water Quality	pH	Conductivi	ty (μS/cm)	
Dissolved Oxygen (mg/L)		Air Temperature (°C		
Water Temperature (°C)		All Temperature (		
Time in situ measurements take	en			
Watercourse Dimensions & N	<b>Norphology</b>		. ) .	
Mean Watercourse Width	<u> </u>	Maximum Pool Dep		cm)
Mean Bankfull Width	\ ``; \	Mean Water Depth		cm)
% Riffle	100 % Pool		% Run ′	
Evidence of eroding banks, Con	mments on bank stat	ility <u>nome o</u>	bouved but	rccent
Substrate (% cover)		<b>04</b>	Silt	Me
Bedrock	Cobble	Sand	Siit Marl	Ne
Boulder	Gravel	Clay	iviali .	
In-water Cover Cover Types Present (circle): Overhanging Vegetation	Undercut Bank Voody Debris	s Deep Pool Boulder Othe		Aquatic
Cover Types Present (circle): Overhanging Vegetation  W	Voody Debris	Boulder Othe	)r	
Cover Types Present (circle):	Voody Debris	Boulder Othe	)r	
Cover Types Present (circle): Overhanging Vegetation  W  Riparian Zone Riparian Cover (% of watercount)	Voody Debris	Boulder Othe	)r	
Cover Types Present (circle): Overhanging Vegetation  W	Voody Debris	Boulder Othe	)r	
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount Adjacent Land Use	Voody Debris	Boulder Othe	)r	
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount)  Adjacent Land Use  Fish Habitat Potential	Voody Debris rse shaded, dominan	Boulder Other	)r	
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or no	Voody Debris rse shaded, dominan	Boulder Other t vegetation, mature	)r	
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount)  Adjacent Land Use  Fish Habitat Potential	rse shaded, dominan ursery areas, groundy	Boulder Other t vegetation, mature	)r	
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount) Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or numbers)	rse shaded, dominan ursery areas, groundwal, ded to keep the	Boulder Other t vegetation, mature	)r	
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or number of the content of t	rse shaded, dominan ursery areas, groundwal, ded to keep the	Boulder Other t vegetation, mature	)r	
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or number of the content of the	rse shaded, dominan ursery areas, groundwal, ded to keep the	Boulder Other t vegetation, mature vater upwellings)	e or early succession	onal)
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or number of the content of the	ursery areas, groundy hal, permanent)	Boulder Other t vegetation, mature vater upwellings)	ere or early succession	onal)
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or number of the content of the	ursery areas, groundy hal, permanent)	Boulder Other t vegetation, mature  vater upwellings)  Grassed	e or early succession	onal)
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercount) Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or number of the count) Migratory Obstructions (season  Note any fish observations  Waterbody Notes  Natural Watercourse  T	rse shaded, dominan  ursery areas, groundw  al, permanent)  rapezoidal Channel  Dugout Pond	Boulder Other t vegetation, mature  vater upwellings)  Grassed  Dominated	SwaleBu	onal)  uried Tile_ Dry
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercounty)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or number of the county)  Migratory Obstructions (season  Note any fish observations  Waterbody Notes  Natural Watercourse  T Surficial Drainage (i.e. furrows)	rse shaded, dominan  ursery areas, groundw  al, permanent)  rapezoidal Channel  Dugout Pond	Boulder Other t vegetation, mature  vater upwellings)  Grassed  Dominated	SwaleBu	onal)  uried Tile_ Dry



CANAL RO.

FEEDER CANAL



REA

Station #	Rd. Canal runs alom rd. Canal
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Macon Watercourse Width	Conductivity (µS/cm)  Air Temperature (°C)  Maximum Pool Depth (cm)  Mean Water Depth (cm)  Pool % Run % Flat
% Riffle% Evidence of eroding banks, Comments on bank	R stability None observed.
In-water Cover Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris  Riparian Zone  Riparian Cover (% of watercourse shaded, don	Sand 30 Silt 45 Muck  20 Clay Marl 5 Detritus  Banks Deep Pool Watercress Aquatic Veg  Boulder Other  minant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, gro	oundwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations Note	
	nnel Grassed Swale Buried Tile Pond Dominated by Aquatic Veg Dry servations, etc
Field Notes Authored by Field	Notes QA/QCed by



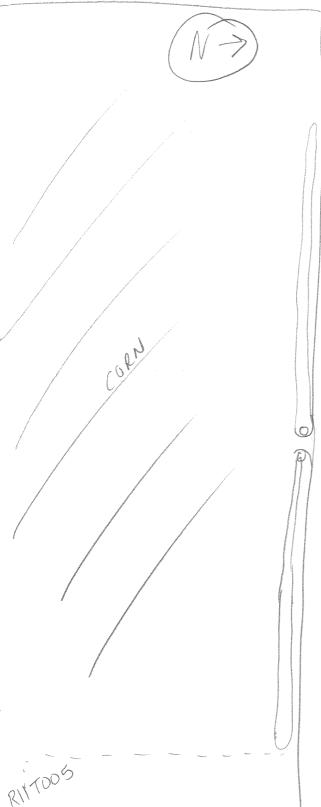
しならなり

Christ BANK RO

Has been dredged recently but ciparian full of cattails. Channel would have been full of cattails and will again WIND FARM WATERBODY RAPID ASSESSMENT FORM



	Project Name Niagara Wind Project # 160950269 Field Staff ME MF
Station #	Project Name Niagara Wing
Watercourse Name Unknown	Project # 160950269
Photos Sue photo ley  Date 2012 06 20	Field Staff ME MF
Date 3018 00 20	Time 14-1)
Weather conditions in previous 24 h	E 062/309 N 4747055 Datum NAD8
GPS Coordinates (Zone)	ner Road - 200 m west of Dickhout Rd
Puns parallel with room	ad on south sid.
Water Quality	
Dissolved Oxygen (mg/L)	pH Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken_	
Watercourse Dimensions & Morp	hology
Mean Watercourse Width 0.3	(m) Maximum Pool Depth(cm)
Mean Bankfull Width 3.0	_(m) Mean Water Depth(cm)
% Riffle	700 % Pool % Run% F
Evidence of eroding banks, Comme	ents on bank stability has been dradged recently
Substrate (% cover)	
Bedrock	_CobbleSand40_Silt_40_Muck
Boulder	Gravel 20 Clay Marl Detrito
In-water Cover Cover Types Present (circle):	Undercut Banks Deep Pool Watercress Aquatic Ve
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone  Riparian Cover (% of watercourse s	shaded, dominant vegetation, mature or early successional)
Cover Types Present (circle): Overhanging Vegetation Wood Riparian Zone	shaded, dominant vegetation, mature or early successional)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s	shaded, dominant vegetation, mature or early successional)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s	shaded, dominant vegetation, mature or early successional)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  10% From tree Side muta  Adjacent Land Use	shaded, dominant vegetation, mature or early successional)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser	shaded, dominant vegetation, mature or early successional)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Migratory Obstructions (seasonal, p	shaded, dominant vegetation, mature or early successional)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser	shaded, dominant vegetation, mature or early successional)  y areas, groundwater upwellings)  permanent)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Migratory Obstructions (seasonal, p  Note any fish observations	shaded, dominant vegetation, mature or early successional)  y areas, groundwater upwellings)  permanent)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Migratory Obstructions (seasonal, p  And Princes  Note any fish observations	shaded, dominant vegetation, mature or early successional)  y areas, groundwater upwellings)  permanent)
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Migratory Obstructions (seasonal, p  Note any fish observations  Waterbody Notes  Natural Watercourse  Trape	shaded, dominant vegetation, mature or early successional)  y areas, groundwater upwellings)  permanent)  provided Channel
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Migratory Obstructions (seasonal, p  And Princes  Note any fish observations	shaded, dominant vegetation, mature or early successional)  y areas, groundwater upwellings)  permanent)  provided Channel
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Migratory Obstructions (seasonal, p  Note any fish observations  Waterbody Notes  Natural Watercourse Trape  Surficial Drainage (i.e. furrows)	shaded, dominant vegetation, mature or early successional)  y areas, groundwater upwellings)  permanent)  grassed Swale Buried Tile Dugout Pond Dominated by Aquatic Veg Dry  fildlife Observations, etc.
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Migratory Obstructions (seasonal, p  Note any fish observations  Waterbody Notes  Natural Watercourse  Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incidental W	shaded, dominant vegetation, mature or early successional)  y areas, groundwater upwellings)  permanent)  Szoidal Channel Grassed Swale Buried Tile Dugout Pond Dominated by Aquatic Veg Dry Y
Cover Types Present (circle): Overhanging Vegetation Wood  Riparian Zone Riparian Cover (% of watercourse s  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurser  Migratory Obstructions (seasonal, p  Note any fish observations  Waterbody Notes  Natural Watercourse Trape  Surficial Drainage (i.e. furrows)	shaded, dominant vegetation, mature or early successional)  y areas, groundwater upwellings)  permanent)  szoidal Channel Grassed Swale Buried Tile Dugout Pond Dominated by Aquatic Veg Dry Y



RYMER RO



J = tuibine



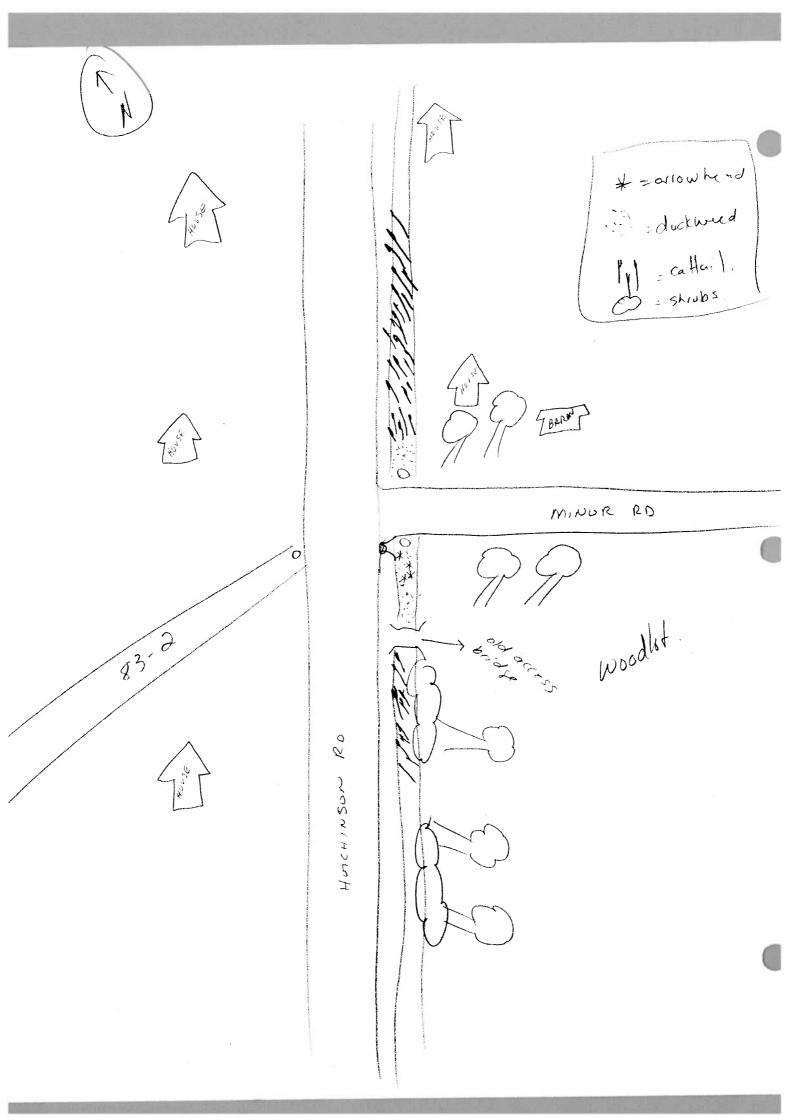
REA	
-----	--

	Project Name Niagara Wind Project #_/60950269
Photos See photo log Date 2012 06 20	Field Staff ME MF
Date 2012 06 20	Time(>;5 ∂′
Weather conditions in previous 24 hrs No	
GPS Coordinates (Zone) 7 E	
Descriptive Location Do Bud Rd ~	- 800m south of Canal Bank Rd
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	
Watercourse Dimensions & Morphology	Maximum Pool Depth 10 (cm)
Mean Watercourse Width 3.0 (m)	Maximum Pool Depth /o (cm)
Mean Bankfull Width 5.0 (m)	Mean Water Depth 2 (cm)
% Riffle	% Pool% Run % F
Evidence of eroding banks, Comments on ba	ank stability None 6064 ved
Substrate (% cover)	
BedrockCobble_	
BoulderGravel _	3೦ Clay <u>Marl</u> Detritus
	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, do	Boulder Other  ominant vegetation, mature or early successional)  o ⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨⟨
Riparian Zone Riparian Cover (% of watercourse shaded, do	ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, do  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, go	ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, do  Adjacent Land Use  As falls, (d  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, go	ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, do 2/6 Cathol & meadow & Cho Adjacent Land Use  Adjacent Land Use  As Ands , (d)  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, go 2005 to 200 Spawn  Migratory Obstructions (seasonal, permanent)	ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, do  Adjacent Land Use  Adjacent La	ominant vegetation, mature or early successional)
Riparian Zone Riparian Cover (% of watercourse shaded, do  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, go  Ossible Spawn  Migratory Obstructions (seasonal, permanent)  And Charas  Note any fish observations  Waterbody Notes  Natural Watercourse  Trapezoidal Cha	ominant vegetation, mature or early successional)  proundwater upwellings)  annel Grassed Swale Buried Tile
Riparian Zone Riparian Cover (% of watercourse shaded, do  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, go  Ossible Spawn  Migratory Obstructions (seasonal, permanent)  And Charas  Note any fish observations  Waterbody Notes  Natural Watercourse  Trapezoidal Cha	ominant vegetation, mature or early successional)
Adjacent Land Use  Adjacent Land	ominant vegetation, mature or early successional)  proundwater upwellings)  annel Grassed Swale Buried Tile t Pond Dominated by Aquatic Veg Dry
Riparian Zone Riparian Cover (% of watercourse shaded, do  Adjacent Land Use  Adjacent La	ominant vegetation, mature or early successional)  proundwater upwellings)  annel Grassed Swale Buried Tile
Riparian Zone Riparian Cover (% of watercourse shaded, do  Adjacent Land Use  Adjacent La	ominant vegetation, mature or early successional)  proundwater upwellings)  annel Grassed Swale Buried Tile t Pond Dominated by Aquatic Veg Dry

out out Previously 1 = cathail CHANNEL BIRD RO CANAL BANK RD



Watercourse Name Web					)ind	
Watercourse Name <u>Unkn</u>		Project #/_				
Photos See photo logo  Date 2012 06 26	· · · · · · · · · · · · · · · · · · ·		NEIME			
		Time	8			
Weather conditions in previou			47492	103	D-4	t. 1/1
GPS Coordinates (Zone)						n NA
Descriptive Location On	ITTINOP ROLA	16 m no1th	of Av	tchins	<u> </u>	₹ <u>८</u> १:
Water Quality			and the same of th			
Dissolved Oxygen (mg/L)	pH	Conduc	ctivity (uS/cn	n)	and the second s	
Water Temperature (°C)		Conduction	· (°C)	3002		
Time in situ measurements tal						
Watercourse Dimensions &						Ve/1
Mean Watercourse Width 2		Maximum Pool I		8	_(cm)	10/1
***************************************	<u>.o(m)</u>	Mean Water De		-	_(cm)	
% Riffle	%P		% Rui	n		%
Evidence of eroding banks, Co	omments on bank s	tability				
none observed.					***************************************	
Substrate (% cover)			11.5			
Bedrock	Cobble	Sand	40	_Silt	30	_Muc
Boulder	Gravel	<u> </u>		Marl		Detr
In-water Cover Cover Types Present (circle): Overhanging Vegetation		•	ol Water other	cress	Aqu	ıatic V
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone	Woody Debris	Boulder O	ther			iatic V
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone  Riparian Cover (% of watercount)	Woody Debris urse shaded, domin	Boulder O	therture or early	succes	sional)	ıatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone  Riparian Cover (% of watercound and water	Woody Debris urse shaded, domin	Boulder O	therture or early	succes	sional)	ıatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone  Riparian Cover (% of watercound and water	Woody Debris urse shaded, domin	Boulder O	therture or early	succes	sional)	iatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound	Woody Debris urse shaded, domin	Boulder O	therture or early	succes	sional)	atic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercounts)  Adjacent Land Use  Fish Habitat Potential	Woody Debris  urse shaded, domin  e shoub the	Boulder O	ture or early	succes	sional)	uatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone  Riparian Cover (% of watercounts)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or present circle)	Woody Debris  urse shaded, domin  adot, ay fixe  ursery areas, groun	Boulder O	ture or early	succes	sional)	uatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound	Woody Debris  urse shaded, domin  a shab + t  adlot, ay fice  ursery areas, groun	Boulder O	ture or early	succes	sional)	uatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound	wrse shaded, doming and of a ground and a ground a ground and a ground a ground and a ground a ground a ground and a ground a gr	Boulder O	ture or early	succes	sional)	uatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercounts)  Adjacent Land Use  The Walsh was  Fish Habitat Potential  Critical Habitat (spawning or put spawn (possible)  Migratory Obstructions (season and particle)	woody Debris  urse shaded, domin  adot, ay fix  ursery areas, groun  (a)  (a)  (b)  (c)  (c)  (c)  (c)  (d)  (d)  (d)  (d	Boulder O	ture or early	succes	sional)	uatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound	woody Debris  urse shaded, domin  adot, ay fix  ursery areas, groun  (a)  (a)  (b)  (c)  (c)  (c)  (c)  (d)  (d)  (d)  (d	Boulder O	ture or early	succes	sional)	uatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercounts)  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or not present to the possible)  Migratory Obstructions (season to the possible)  Note any fish observations	woody Debris  urse shaded, domin  adot, ay fix  ursery areas, groun  (a)  (a)  (b)  (c)  (c)  (c)  (c)  (d)  (d)  (d)  (d	Boulder O	ture or early	succes	sional)	uatic V
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound	woody Debris  urse shaded, domin  a shab the  adlot, ay fine  ursery areas, groun  (ay  nal, permanent)  (the of shan	Boulder O	ture or early	succes	sional)	
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound of the content of the con	woody Debris  urse shaded, domin  added, ag fix  ursery areas, groun  lagu  nal, permanent)  the of shane  Trapezoidal Channe	Boulder O  ant vegetation, man  ce Species.  Ids  ding water upwellings)  Grasse	ture or early	succes	sional)	Tile
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound	woody Debris  urse shaded, domin  added, ag fix  ursery areas, groun  lagu  nal, permanent)  the of shane  Trapezoidal Channe	Boulder O  ant vegetation, man  ce Species.  Ids  ding water upwellings)  Grasse	ture or early	succes	sional)	
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound of the content of the con	wrse shaded, doming a shaded, a shaded, a shaded	Boulder O  ant vegetation, man  ce Species.  Ids  ding walk  Grasse  nd Dominate	ture or early  d Swale_ d by Aquati	succes	sional)	File
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound of the content of the con	wrse shaded, doming a shaded, a shaded, a shaded	Boulder O  ant vegetation, man  ce Species.  Ids  ding walk  Grasse  nd Dominate	ture or early  d Swale_ d by Aquati	succes	sional)	File
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound of the content of the con	wrse shaded, doming a shaded, a shaded, a shaded	Boulder O  ant vegetation, man  ce Species.  Ids  ding walk  Grasse  nd Dominate	ture or early  d Swale_ d by Aquati	succes	sional)	File
Cover Types Present (circle):  Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercound of the content of the con	wrse shaded, doming a shaded, a shaded, a shaded	Boulder O  ant vegetation, man  ce Species.  Ids  ding walk  Grasse  nd Dominate	ture or early  d Swale_ d by Aquati	succes	sional)	Dry_





REP

Station #93-2		Project Name	Mian	ara (a)ir	$\sim d$
	N	Project #/(	095	269	
Photos See Mato lox		Field Staff	NE ME		
Photos 20 Malo 100 Date 10 10 10 10 10 10 10 10 10 10 10 10 10	3	Time 19:10			
vveather conditions in previous	124 Nrs 🗥 🔿 🛚	occiditation -	hot the	amid	
GPS Coordinates (Zone)	T E PROPERTY		N2/22	7/2 D	atum NADRS
Descriptive Location Copye	15 to 93-1 c	and continues	500	HALL FIR	<u> </u>
Hurchinson Rd.				1	
Water Quality		99 N			
Dissolved Oxygen (mg/L) 3,0	)4_ pH	7.90 Condu Air Temperature	ctivity (uS/	cm) $50$	0
Water Temperature (°C)	7.34	Air Temperatur	e (°C)	30°C	
Time in situ measurements take	en	· ··· · · · · · · · · · · · · · · · ·	<u> </u>	200	
Watercourse Dimensions & M	forphology				
Mean Watercourse Width	.5 (m)	Maximum Pool	Denth	10 760 Pla	m)
Mean Watercourse Width 2. Mean Bankfull Width /o.d	(m).	Maximum Pool Mean Water De	onth	30 0 (0	m)
% Riffle	700 % F	Pool	% R	in (C	, % Fla
Evidence of eroding banks, Cor	mments on bank	stability none	- obskue	d.	/0 1 18
Substrate (% cover)	0-5-5-		~ ~	<b>-</b> /.	
Bedrock Boulder	Cobble Gravel	Sand 3 <i>o</i> Clay		Silt <i>40</i> Marl	Muck Detritus
Riparian Zone Riparian Cover (% of watercours  15% wild scape places  Adjacent Land Use	se shaded, domir Sharbs	nant vegetation, ma	ture or ear	ly succession	nal)
Fish Habitat Potential Critical Habitat (spawning or num	al, permanent)				-
Note any fish observations	1574				
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)_ Other Habitat Notes, Incidental	Dugout Por	nd Dominate	ed by Aqua		ed Tile Dry
Field Notes Authored by	Field Note:	s QA/QCed by	management of the second of th		

83-1

* = aronhea!

HUTCHINSON RO



Station # R11 1082	Project Name Niagwa Wind Farm
Watercourse Name 2	Project # 160960269
Photos 8059 - 8067	Field Staff Trevor Chandler, Hamish Aubrey
Date 19 Sept 2012	Time 12:45 am
Weather conditions in previous 24 hrs E E E E	e: Rain day prior
GPS Coordinates (Zone) E 061	3 2257 N 4754 360 Datum Nad 8
Descriptive Location, Gan Keld with W	latercouse 2 correcting downstream
North of Hwy 3 by approx 70	0m, 600m East of Crown 2d
Water Quality NA - no Surface wa	
	DH Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C) 17°C
Time in situ measurements taken	
Watercourse Dimensions & Morphology	No neals - dry
Mean Watercourse Width DC4 (m)	Maximum Pool Depth No pools - dry (cm)
Mean Bankfull Width <u> </u>	Mean Water Depth DQ (cm)
% Riffle	6 Pool % Bun % Flot
Evidence of eroding banks, Comments on ba	nk stability, No evidence of their erosion
- Dans & Lalacen France	S are ploughed to top of bank
Substrate (% cover) -> 501	
BedrockCobble_	Yes-10 Sand Yes -70 Silt X Muck
Boulder Gravel	yes 10 Clay Marl Marl Detritus
In-water Cover	
Cover Types Present (circle): Undercut	t Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other Dry -
Riparian Zone	J
Riparian Cover (% of watercourse shaded, do	minant vegetation, mature or early successional)
Agric	while weeds - 60% shadled - herbacious
Adjacent Land Use	2: (:
Gin field, agriculture	VI
Fish Habitat Potential No water	inlikely to bear fish
Critical Habitat (spawning or nursery areas, gre	oundwater upwellings)
Migratory Obstructions (seasonal, permanent)	LOW-NO Flow
Note any fish observations No	LOW - NO Flow
Note any lish observations No	
Waterbody Notes	
Natural Watercourse No Trapezoidal Char Surficial Drainage (i.e. furrows) No Dugout	
Dugout	Pond No Dominated by Aquatic Veg No Dry 165
Other Habitat Notes, Incidental Wildlife Obs	ervations, etc. Straight travezodial channel
· _ ·	
along entire site. Echo	innel bed does not appeared to be plaushed
along entire site. El Cho	ed to drain agricultural fields. Water source
along entire site. El Cho	
from wetland situated north of c	hand. No aquatic plants
from Wettern situated north of c	ed to drain agricultural fields. Water source



Station # <u>©L - SGR 3</u>	Project Name Magara Wind Farm
Watercourse Name Spring Creek Tributary 1	Project #
Photos 5135 5139 8140	Field Staff Trever + Hamish
Date 19 Sept 2012	Time Si3Spm
Weather conditions in previous 24 hrs Fine	- Rain 15°C
GPS Coordinates (Zone) TE 062000	5 N 4775198 Datum Nad 8
Descriptive Location South Grindy Rd & 26	00 m north of Younge St
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	Conductivity (µS/cm)Air Temperature (°C)
Watercourse Dimensions & Morphology	
Mean Watercourse Width Ord (m)	Maximum Pool Depth(cm)
wean Banktuli Width(m)	Mean Water Depth(cm)
% Nille% P001	% Run % Fla
Evidence of eroding banks, Comments on bank stal	pility
Substrate (% cover)  Bedrock  Boulder  Gravel	Sand 100 (Soil) Silt Muck
	Clay Marl Detritus
In-water Cover  Cover Types Present (circle):  Undercut Bank  Overhanging Vegetation  Woody Debris	s Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dominant	t vegetation, mature or early successional)
Adjacent Land Use  Adjacent Land Use	t vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundw	ater upwellings)
Migratory Obstructions (seasonal, permanent)	1-low flow
Nicke and fich about 15	0
Waterbody Notes Natural Watercourse  Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond_	Dominated by Aquatic Veg M Dry
Other Habitat Notes, Incidental Wildlife Observatio هی دسابودا م وهوره پر کی ا	ons, etc.
juliest, otherwise cha	nnel is dry
Field Notes Authored by Hamish Field Notes OA	100-11- MP



Station # CL SGR	32/A	Project Name	Magara	all had
Watercourse Name Trin to Photos 8141-5	Spring Creor	Project # //a/	Class of Almost	
Photos 819195		Field Staff 1V	exter (nandi	Ord Hand
Date 19/12		IIMe 📐 🖫		A F & DUNION
Weather conditions in previous	24 hrs (2	ain.		
GPS Coordinates (Zone) 17	T E (Yal	I/OS/AT N	477/2015	Datum Nada
Descriptive Location	In Grimst	4 Rd 3, 40	ondoff	Datum Nuggo
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements take	pH_	Conduc	tivity (µS/cm) (°C) 7 °C	
Watercourse Dimensions & M				
Mean Watercourse Width	iorbiiology	Manufacture on the		
Mean Bankfull Width	(''')	Maximum Pool D	epth	_(cm)
% Riffle	(''') % Po		th	_(cm)
Evidence of eroding banks, Con	nments on bank s	tability <u>Stabl</u>	% Run	% Flat
Substrate (0/ second)				
Substrate (% cover)	•			
Bedrock	Cobble	Sand	100% Silt	Muck
Boulder	Gravel	Clay	Mari	Detritus
In-water Cover Cover Types Present (circle): Overhanging Vegetation Wo	Undercut Bar oody Debris	nks Deep Pool Boulder Ott	Watercress ner	Aquatic Veg
Riparian Zone Riparian Cover (% of watercours ) 0 70 a grace Adjacent Land Use			re or early success	ional)
Adiana Alana de la compansión de la comp	posture/e	matter ea	or land	ionai)
Adjacent Land Use	asture		7	
Fish Habitat Potential				
Critical Habitat (angular angular				
Critical Habitat (spawning or nurs		water upwellings)		
Migratory Obstructions (seasonal Deಟ				
ਹਿਟਪ੍ਰ Note any fish observations	NOTRE			
Waterbody Notes Natural Watercourse Trap Burficial Drainage (i.e. furrows)	Dugout Pond	Dominated	by Aquatic Veg	uried Tile
Other Habitat Notes, Incidental	Wildlife Observat	lons, etc. <u>POO</u>	dydefine	1 Channel
eld Notes Authored by Trever (nd.	Fleid Notes O	A/OCed by		



Station #CL-SGR 3 3	Project Name Was and All A
Watercourse Name Spring reek	Project Name Nagora Wind Agreet Farm Project # 160960269
Photos Slub ADI Jalua	Field Staff Trevoc + Hamish
Date	Time 6.05 m
weather conditions in previous 24 hrs	
GPS Coordinates (Zone) E	067 09 37
Descriptive Location South Grinsley food	3- Fty Ad 20 in from South of Fly Rd
	J 19 F4
Water Quality NA - Dougt Cultert	
Water Quality NA - Dry at Cultert Dissolved Oxygen (mg/L) pi Water Temperature (°C)	u / o
Water Temperature (°C)	H Conductivity (μS/cm) Air Temperature (°C)/ ラッ
Time in situ measurements taken	Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width(m)	
Mean Bankfull Width ~ 6 (m)	Maximum Pool Depth <u>~30</u> (cm)
	Mean Water Depth 5cm (cm)
% Riffle% Evidence of eroding banks, Comments on ban	Pool% Run% Fla
	K Stability Stable
Substrate (% cover)	
Redrock Oakla	force 3
BedrockCobbleBoulderGravel	Sand ¹⁰⁰ Silt Muck
Gravel	ClayMarl Detritus
In-water Cover	
Cover Types Present (circle): Undercut	Banks (Door Dool)
Overhanging Vegetation Woody Debris	Boulder Other Watercress Aquatic Veg
	Boulder Other
Riparian Zone	
miparian Cover (% of watercourse shaded, dom	ninant vegetation, mature or early successional)
Adjacent Land Use	grasses & trees & agratic weg  wooded area, agricultural field
Rural residential - laws	The world was
, peep	a wooded area, agricultural field
Fish Habitat Potential	,
Critical Habitat (spawning or nursery areas, grou	undwater unwellings)
	unlikely
Migratory Obstructions (seasonal, permanent)	
·	no-low flow & heavily regelated
lote any fish observations	- Too Champing Officer Cu
Vaterbody Notes	
latural Watercourse Transmidel Change	· · · · · · · · · · · · · · · · · · ·
Surficial Drainage (i.e. furrows)	nel / Grassed Swale N Buried Tile N
urficial Drainage (i.e. furrows) N Dugout Po	ond N Dominated by Aquatic Veg Y Dry N
other Habitat Notes, Incidental Wildilfe Obser	nyatione etc
	ncrete box culvert - approx A-5 m
Watch the poison my!	and our failed - approx 7-3 m
eld Notes Authored by Hawid Field Not	
Field Note	es QA/QCed by
01609\resource\Internal Info and Teams\Aquatic Resources\Field	d Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc
	2 One of Stanley Crom UZ Wind Farm Waterbody Rapid Assessment Form.doc



#### Stanted

Station #_CL-CR4	Project Name Niagara Wind
Watercourse Name_/	Project # /60960269
Photos 3069 - 3070	Field Staff Trever + Hamish
Date SEPT 19,2012	Time _/4:20
	ain 15°C
GPS Coordinates (Zone)   TT E 06/299	Dutuii i kiini
Descriptive Location(ofession Road 4 - 300 t	West of Minor Rd
Water Quality Dry	
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width Pry (m)	Maximum Pool Depth (cm)
Mean Bankfull Width <td>Maximum Pool Depth (cm)  Mean Water Depth (cm)</td>	Maximum Pool Depth (cm)  Mean Water Depth (cm)
% Riffle% Pool	(O)))
Evidence of eroding banks, Comments on bank sta	
Substrate (% cover)	
	Sand /oo' (Sail) Silt Muck
BoulderGravel	Sand/oo/ (Solf) SiltMuck ClayMarl Detritus
in-water Cover	
	O Doop Dool Websers A 15 M
Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris	
Overhaliging vegetation vivous Debits	Boulder Other Grass suale / agricultural w
Riparian Zone	·
Riparian Cover (% of watercourse shaded, dominan	t yegetation, mature or early successional)
Harkultual Treat	NT Manicured 1944 of Jours
Adjacent Land Use  Agricultural + rura	1 mg Nembra
Trytical war . Two	1 19/00/1/4/
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, groundy	vater (inwellings)
Critical Habitat (spawning or nursery areas, groundw	vater upwellings)
Poor more	vater upwellings)
Migratory Obstructions (seasonal, permanent)	vater upwellings)
Migratory Obstructions (seasonal, permanent)	· 11
Migratory Obstructions (seasonal, permanent)	· Al
Migratory Obstructions (seasonal, permanent)  Note any fish observations	· Al
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes	out-no flows
Migratory Obstructions (seasonal, permanent)  Note any fish observations	Grassed Swale / (south of road)  Buried Tile N
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Yes Dugout Pond	Grassed Swale / (south of road)  N Dominated by Aquatic Veg N Dry Y
Migratory Obstructions (seasonal, permanent)  Note any fish observations	Grassed Swale X (south of road)  N Dominated by Aquatic Veg. N Dry.  Pood
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Surficial Drainage (i.e. furrows) Yes  Dugout Pond  Other Habitat Notes, Incidental Wildlife Observations	Grassed Swale X (sub of road)  N Dominated by Aquatic Veg N Dry Y  Fload  Jons, etc. Swhell drangel across.
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incidental Wildlife Observations	Grassed Swale X (south of road)  M Dominated by Aquatic Veg N Dry Y  Fload  Jons, etc. Swholl drangel across,  by ployphing a nottle of road
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Yes Dugout Pond	Grassed Swale X (south of road)  N Dominated by Aquatic Veg N Dry Y  Fload  Jons, etc. Swhell dranguel across.
Migratory Obstructions (seasonal, permanent)  Note any fish observations	Grassed Swale X (south of road)  M Dominated by Aquatic Veg N Dry Y  Fload  Jons, etc. Swholl drangel across,  by ploygling a roll of road



Stantec			# 6 x	j. generali.
Station # CL-CR4		Project Name	Niagara Wi	not tarm
Watercourse Name		Project #	609 1	
Photos 8071 - 3574		Field Staff	mish = 11200	<i>F</i>
	3	Time 2:45 @	> M	
Weather conditions in previous	24 hrs	- Rais	1500	
GPS Coordinates (Zone)	/ \ <del></del>	06 17 1 2 14	4767700	Datum Nad 83
Descriptive Location	Slon Rd 4.	150 m West	of Winar A	Q.d
Descriptive Location				
Water Quality Dry				
Dissolved Oxygen (mg/L)	/ pH	Conduct	tivity (μS/cm)	
Water Temperature (°C)		Air Temperature	(°C)	
Time in situ measurements take	<u></u>	•		
Watercourse Dimensions & M Mean Watercourse Width Mean Bankfull Width  ———————————————————————————————————	lorphology	Maximum Pool D	Depth dry	(cm)
Mean Watercourse Width Do	(m)	Mean Water Der	oth off	(cm)
Mean Bankfull Width / >	(III)	nol	% Run	% Flat
% Riffle Evidence of eroding banks, Col		tability 54.60	footure	
Evidence of eroding banks, Col	ninents on bank s	tability		
and the same and t		and the second second	, and the second se	
Substrate (% cover)	Cobble	Sand/	0/ (S//) Silt_	Muck
Bedrock	Gravel	Clay	Marl	Detritus
Boulder	uavoi			
Overhanging Vegetation V  Riparian Zone  Riparian Cover (% of watercou			ture or early succe	
Adjacent Land Use	31-20 - 91	<u> </u>		erbacous & me
Adjacent Land 666	cultural / R	sod side al	rch/ was he	
Fish Habitat Potential Critical Habitat (spawning or no	urserv areas, drou	ndwater upwellings	)	
		none		
Migratory Obstructions (season	nal, permanent)	no-low flow	<u> </u>	
Note any fish observations	^0			
Waterbody Notes		. /	/	
Notural Matarcourse N	Frapezoidal Chann		sed Swale	Burled Tile 12
Surficial Drainage (i.e. furrows	Dugout Po	ond <u>//</u> Domina	ited by Aquatic Ve	g 🕢 Dry 🗡
			shour /son	16 stell of love
Other Habitat Notes, Inciden	tal Wildlife Obse	rvations, etc. <u>V/</u>	0/254 200	OU
9,000000000	Winder Oak	7	<i>y</i>	
3009/50				
-		./^ /		
Field Notes Authored by	Field No	otes QA/QCed by	<i>j</i>	



	Project Name Niagara Win	A Farm
Station # CL-CR 4	Project Name Nagwa 10.	
Watercourse Name 3	Field Staff Trever - Hamist	
Photos 3075 - 8080		
Date 19 Sept 2012	Time 2:55 pm	
Weather conditions in previous 24 hrs	353 N 4767739	Datum Nad83
000 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Descriptive Location Concession Rol 4	- 50 m East of Whork	<u> </u>
Water Quality Ory		
Dissolved Oxygen (mg/L) pH_	Conductivity (μS/cm)	
2.000	Air Temperature (°C)	_
Water Temperature (°C) Time in situ measurements taken		
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) ————————————————————————————————————	Maximum Pool Depth Dry Mean Water Depth % Run _	(cm) (cm) % Flat
Evidence of eroding banks, Comments on bank	stability <u>Stable reasure</u>	
Substrate (% cover)		
Cabble	Sand (00) (Soll) Sil	tMuck
Boulder Gravel	ClayMa	arl Detritus
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris	Banks Deep Pool Watercres Boulder Other	ss Aquatic Veg
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone  Riparian Cover (% of watercourse shaded, domi	inant vegetation, mature or early suc	ccessional)
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated)	Boulder Other	ccessional)
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated)	inant vegetation, mature or early suc	ccessional)
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domi Adjacent Land Use	inant vegetation, mature or early such	ccessional)
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounding and permanent)  Migratory Obstructions (seasonal, permanent)	inant vegetation, mature or early suc	ccessional)
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domi  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds)	inant vegetation, mature or early such	ccessional)
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domi Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounding and permanent)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Natural Watercourse Surficial Drainage (i.e. furrows)  Dugout F	inant vegetation, mature or early such a flow flow flow flow Dominated by Aquatic \	Buried Tile_
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated to the shaded of the shaded	inant vegetation, mature or early successful grasses  undwater upwellings)  nel Grassed Swale  Pond Dominated by Aquatic \  ervations, etc Possibly 21 mag.	Buried Tile_
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, doming the shaded of th	inant vegetation, mature or early successful grasses  undwater upwellings)  nel Grassed Swale	Buried Tile No Lization and Liz



Station # CL - CR4 Watercourse Name 4	Project Name Megara Wind Farm Project #_ 1609 60269
Photos 3081 - 8096	Field Staff Hanksha Trever
Data M SOAF ANIS	Time 3:05 pm
Weather conditions in previous 24 hrs	- Karn 150
CPS Coordinates (70ne)	N 410 / 14 Datum Vall
Descriptive Location	M RESPOT NOTOR RE
Water Quality Dissolved Oxygen (mg/L)pH Water Temperature (°C) Time in situ measurements taken	Conductivity (µS/cm)Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) % Riffle (m)	% Run% Flat
Evidence of eroding banks, Comments on bank sta	ibility <u>Stable</u>
Substrate (% cover)	
BedrockCobble	Sand 100 (soit) Silt Muck Clay Marl Detritus
BoulderGravel	ClayDetritus
Overhanging Vegetation Woody Debris	
Adjacent Land Use	nt vegetation, mature or early successional)  - grasses + some aquatic grasses - cattails  have residential + road side dikh + wood
Juneary and a wines	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	lwater upwellings)
Migratory Obstructions (seasonal, permanent)	no-low flow
Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond	d N Dominated by Aquatic Veg V Dry Y
Other Habitat Notes, Incidental Wildlife Observa	ations, etc. ~ 300 my CSP
Field Notes Authored by Hamish Aubrey Field Notes	QA/QCed by



Station # CL - CR 4 Watercourse Name 5	Project Name Magara Wood Farm Project # 1609 60 269
Photos	Field Staff Trever + Hamish
Date 19 5co 2012	Time 3:15 pm
Weather conditions in previous 24 hrs	- Rain, 15°C
GPS Coordinates (Zone) 17T E 06198	54 N 4767760 Datum Nod8
Descriptive Location Concession sedd 4	- 300 m east of Minor Rd
Water Quality Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity (µS/cm)  Air Temperature (°C)
Watercourse Dimensions & Morphology	
Mean Watercourse Width Pry (m)	Maximum Pool Depth NA (cm)
Mean Bankfull Width (m)	Mean Water Depth MA (cm)
% Riffle% Poo	% Run % Flat
Evidence of eroding banks, Comments on bank sta	bility Stable
Substrate (% cover)	
BedrockCobble	Sand 501/ (1001/2) Silt Muck Clay Marl Detritus
BoulderGravel	ClayMarlDetritus
Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominar	
Adjacent Land Use	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	water upwellings)
Migratory Obstructions (seasonal, permanent)	ro-low
Note any fish observations	06
Waterbody Notes  Natural Watercourse Natural Watercourse Dugout Pond  Surficial Drainage (i.e. furrows) Dugout Pond	
Other Habitat Notes, Incidental Wildlife Observation with culvery approx 900 me present but limited to readsign	tions, etc. Defined channel associated in size, some aquatic grasser
Field Notes Authored by Hawish Field Notes C	QA/QCed by



Station # CL - CP 4		Project Name	Niagora Wi.	d Farm
Watercourse Name 6		Project #1609		
Photos 8092 - 8096		Field Staff 10000	r & House	
Date <u>19 Sept 2012</u>		Time 3.25 pm		
Weather conditions in previous	s 24 hrs 🗀 🦰	- 2010/15	2/	·
GPS Coordinates (Zone)	TT E 0620	2/2 N	4767775	Datum Nod 8
Descriptive Location	Sion Road 4 - 1	unction with fatte	Son food	<u> </u>
	J			
Water Quality Des				
Dissolved Oxygen (mg/L)	pH	Conductivity	v (μS/cm)	and the second s
Water Temperature (°C)		Air Temperature (°C	1700	
Time in situ measurements tak	cen			
Watercourse Dimensions & I				
Mean Watercourse Width Dre	<u>ط(m)</u>	Maximum Pool Dept	th 0 m	(cm)
Mean Bankfull Width ~   w	(m)	Mean Water Depth_	014	(cm)
% Riffle	% Po	ol .	% Run	% Fla
Evidence of eroding banks, Co	mments on bank st	ability <u>Stable</u>		
Substrate (% cover)	0.1.1.1.	• • • • •		
Bedrock	Cobble	Sand 160 (	<u> </u>	Muck
boulder	Gravel	Clay	Marl	Detritus
In-water Cover D G Cover Types Present (circle): Overhanging Vegetation	Undercut Bar Voody Debris	nks Deep Pool Boulder Other	Watercress	Aquatic Veg
Riparian Cover (% of watercour	rse shaded, domina	int vegetation, mature	or early succes	sional)
Adjacent Land Use	1. showed by acc	isses, some frees		
Aujacent Land Ose  Agrica	Atural roadside	e ditch		
<b>*</b>	7			
Fish Habitat Potential				
Critical Habitat (spawning or nu	rsery areas, ground	lwater upwellings)		
Migratory Obstructions (season	al normanant)	<u>no</u>		
migratory Obstructions (season	ai, permanent)	no-low floo		
Note any fish observations	NO.			
Waterbody Notes				**************************************
Natural Watercourse	canazaidal Channal			/
Surficial Drainage (i.e. furroug)	apezoldai Channei			Buried Tile_ <u>V</u>
Surficial Drainage (i.e. furrows)_	Dugout Pond	Dominated by	Aquatic Veg_/	<u> </u>
Other Habitat Notes, Incidenta	al Wildlife Observa	tions, etc. $600$ mm	culvert -	ypax Ass
<u> Vairage 1</u>	rature crosses	perpindicular to ros	d. Drainage	Feature
present.			,	
Field Notes Authored by	WORW Field Notes (	QA/QCed by		
	1	,		



Station # CL-CR 4	Project Name Nagara Wind Farm	
Watercourse Name	Project # 160966269	
Photos 8697 - 3400	Field Staff Hamish - Trevor	
Date 19 Sept 2012	Time3:35 p/~	
Weather conditions in previous 24 hrs	s Fire - Rain, 15°C.	<del></del>
GPS Coordinates (Zone)	E 0620335 N 4767785 Date	<u>um Nad</u> 8≤
Descriptive Location	food 4, 50 m East of Paterson fd	
Water Quality () Cy Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	pH Conductivity (μS/cm) Air Temperature (°C)	
Watercourse Dimensions & Morph Mean Watercourse Width Mean Bankfull Width Riffle Evidence of eroding banks, Commen	_(m)	
Substrate (% cover)	Cobble Sand 100 (Soil ) Silt	Muck
Boulder	GravelClayMarl	Mook Detritus
Riparian Zone Riparian Cover (% of watercourse sh	Debris Boulder Other	(I)
Adjacent Land Use	a pastal a strainger new	
agriculture		<del></del>
Fish Habitat Potential Critical Habitat (spawning or nursery	areas, groundwater upwellings)	
Migratory Obstructions (seasonal, pe	rmanent)	
Note any fish observations		
Waterbody Notes Natural Watercourse Natural Watercourse Natural Drainage (i.e. furrows)	· · · · · · · · · · · · · · · · · · ·	d Tile Dry <u>Xes</u>
Other Habitat Notes, Incidental Wil		wad as field
No de		our, ay THE
apple x		
Field Notes Authored by Harrish	Field Notes QA/QCed by	



Station # CL-(R4	Project Name Aliana (1)
Watercourse Name8	Project Name Niagara Wind Farm Project #_ 1609 602 69 Field Staff Trevor + Hamish
Photos 801-8104	Field Stoff
Date 19 Sep 2-012	Time 2.45
Weather conditions in previous 24 hrs	Time 3:45 pm - Rach, 15°C
GPS Coordinates (Zone) E 062.050	
Descriptive Location	N 476 7795 Datum Nads
Descriptive Location(oncession Road 4	100 m East of Patterson
Water Quality Dry	
Dissolved Oxygen (mg/L)pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C) 17°C
Time in situ measurements taken	7. Tomporature ( C)
Watercourse Dimensions & Morphology	
Mean Watercourse Width 07 (m)	Maximum Pool Depth(cm)
Mean Bankfull Width 2 6 6 (m)	Mean Water Depth (cm)
% Riffle% Poo	% Run % Flo
Evidence of eroding banks, Comments on bank sta	ibility stable feature
Cubatasta (0)	
Substrate (% cover)	
BedrockCobble	Sand 100 (Soll) Silt Muck
BoulderGravel	Clay Marl Detritus
Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominan  60 /. 9/05865	nt vegetation, mature or early successional)
Adjacent Land Use fural residential, agri	cultural road
Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundw  Migratory Obstructions (seasonal, permanent)	vater upwellings)
10w/moflow	
Note any fish observations ( O ~ )	
Waterbody Notes  Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond_	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
	ons, etc. poorly defined draining
Field Notes Authored by Trans (Lader Field Notes QA	WOCod by MP
i:\01609\resource\Internal Info and Teams\Aquatic Resources\Field She	ets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



Station #	Project Name Niagora Wind Farm
Watercourse Name 9	Project # 160968269
Photos 305 - 808	Field Staff Trever - Hamish
Date 19 Sept 2012	Time 3.55 pm
Weather conditions in previous 24 hrs	- Rain, 15°C
GPS Coordinates (Zone)	2606 N FISTIZ Datum Notes
Descriptive Location Concession Road &	- 400 m East of Patterson
•	
Water Quality Dry	
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	Maximum Pool Depth (cm)
Mean Watercourse Width	Mean Water Depth (cm)
Mean Watercourse Width (m)  Mean Bankfull Width (m)  ———————————————————————————————————	% Run% Flat
Evidence of eroding banks, Comments on bank s	tability
Evidence of eroding banks, Comments on Banks	
Substrate (% cover)	Sand 100 (Soil) Silt Muck
Boulder Gravel	
	ant vegetation, mature or early successional)
Adjacent Land Use fural residential, agr	icultural, roadside ditch drainage
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ndwater upwellings)
	No
Migratory Obstructions (seasonal, permanent)	no- (0W
Note any fish observations	no
Troto dily non observation	
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Po	ond Dominated by Aquatic Veg N Diy
Other Habitat Notes, Incidental Wildlife Obser	vations, etc. Postved Manitured grass lawns, age channels. Small wetland south of road
Field Notes Authored by Hamish Aubrey Field Not	es QA/QCed by



Chambac		
Stantec		Project Name Niagara Wind Farm Project # 160960269
ation #		Project Walle
· Nomo (1)		Field Staff Trever - Hamish
otos <u>9/10 - 9112</u> te <u>19 Sept 2012</u>		Time
te 19 Sept 2012		-0.7
eather conditions in previous	241113	N Cho / SIT Datum 10
eather conditions in provides of Coordinates (Zone)	E 06201	500 West of Huy 20
escriptive Location	23/04/ 420/9/	
Δ.		
ater Quality 1)4	pH_	Conductivity (µS/cm)
issolved Oxygen (mg/L)		Air Temperature (°C) 17°C
later Temperature (°C)	en .	
ime in situ measurements tak		
atercourse Dimensions & N	Morphology	Maximum Pool Depth(cm)
	S 11117	
lean Bankfull Width <del>\</del>	(III) % P	200l% Hun
% Riffle vidence of eroding banks, Co	mments on bank	stability Stable
vidence of eroding banks, oc	A	
1. (0)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	a war (Soil) Silt Muck
Substrate (% cover)  Bedrock	Cobble	Sand_100 (301) Detritus
Boulder	Gravel	Clay Marl Detritus
Riparian Zone Riparian Cover (% of waterco	urse shaded, dom	inant vegetation, mature or early successional) asses north side - manitured cut gracs
70×1× 70	residential, a	
Kulaj	residence , as	7 ( )
Fish Habitat Potential		t to warmellings)
Fish Habitat Potential Critical Habitat (spawning or	nursery areas, gro	aundwater upweilings)
Migratory Obstructions (seas		
Note any fish observations _		V 0
and the bloton		Buried Tile N
Waterbody Notes	Trapezoidal Char	nnel N Grassed Swale / Dunou Dry Y
Surficial Drainage (i.e. furroy	vs) N Dugout	Pond N Grassed Swale Y Buried Tile N Dominated by Aquatic Veg N Dry Y
Juliciai Dialiago (not terro		the state of the s
		loadside dirch 1 9/1/20
Other Habitat Notes, Incide	ental Wildlife Obs	servations, etc. <u>koadside</u> dirch (grass)
Other Habitat Notes, Incide	ental Wildlife Obs	servations, etc. <u>koadside</u> dirch (grasis)
Other Habitat Notes, Incide	ental Wildlife Obs	servations, etc. <u>koadside</u> dirch (grass)
	ental Wildlife Obs Sed Sujale. 3	servations, etc. <u>Koads ide aires (g. s. s.)</u>
Llan +3	ental Wildlife Obs	Servations, etc. Koads ide alles (g. 3)
Llan +3	ental Wildlife Obs	servations, etc. <u>Koads roce arres</u>



	Project Name Niagara Wind Farm
Station # <u>CL-CR4</u>	Project Name 19/20/2007
Watercourse Name	Project # 160960269 Field Staff Trevers Hamsh
Photos 3113 - 3113	T:
Date 19 Sept 2012	
Weather conditions in previous 24 hrs	620973 N 4767844 Datum Nad83
GPS Coordinates (Zone) E 0	6 Mg 13 Set Wet of Hwy 20
Descriptive Location ( on @ssien Rd	6 4 - 475 m = + West of Hwy 20
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	Air Temperature (°C)
Watercourse Dimensions & Morphology	Maximum Pool Depth (cm)  Mean Water Depth (cm)  % Pool % Run % Flat  ank stability 5 fable - mires scorr near culvert
Mean Watercourse Width 0 (4) (m)	Moan Water Denth (cm)
Mean Bankfull Width 1-7 m (m)	% Rool % Run % Flat
% Rittle	nk stability Stable - mirer scour near culvert
Evidence of eroding banks, Comments on ba	The Stability
Substrate (% cover)	Sand 100 (Soll) Silt Muck Clay Marl Detritus
BedrockCobble_	Clay Marl Detritus
BoulderGravel	Olay
Overhanging Vegetation Woody Debris  Riparian Zone	ominant vegetation, mature or early successional)
Adjacent Land Use	rural residential
Agricultural	1990
Fish Habitat Potential Critical Habitat (spawning or nursery areas,	groundwater upwellings)
Migratory Obstructions (seasonal, permaner	no-low flow
Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Cl Surficial Drainage (i.e. furrows) N Dugo	hannel // Grassed Swale / Buried Tile
Field Notes Authored by Hamish Aubrey Fi	eld Notes QA/QCed by



Stamec	I Want
Station # CL-CR4	Project Name Magara Wind Farm
Watercourse Name	Project # 160960269 Field Staff Trever + Hamish
Photos 8/20 - 8/24  Date 19 Sept 2-012	Time 4: 40 pm
Date 19 Sept 2012	Time 4. W PM
Weather conditions in previous 24 nrs	0 N 4767828 Datum Nad 8:
GPS Coordinates (Zone) 177 E 062121	a week of Huly 20
GPS Coordinates (Zone) 177 E 062 (Zine)  Descriptive Location Concession Rd 4 - 30	30 W. West or 11mg =
Water Quality Oct	
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm) Air Temperature (°C)
Motor Tomporature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	Maximum Rool Depth (cm)
Mean Watercourse Width Dig (m)	Maximum Pool Depth (cm)
Mean Bankfull Width(m)	% Run% Flat
Mean Watercourse Width(m)  Mean Bankfull Width(m) % Riffle	tobility Stalde
Evidence of eroding banks, Comments on bank s	tability <u>Jiaco</u>
Substrate (% cover)	Sand to (Sail Silt Muck
Bedrock Cobble	Sand of Soil Silt Muck Clay Marl Detritus
Boulder Gravel	ClayBounds
Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domin	
Adjacent Land Use Agricultural	
V	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou	ındwater upwellings)
	no-low flow
Note any fish observations \rightarrow o	
a company to turrower by Unionic E	Grassed Swale N Buried Tile N Dond N Dominated by Aquatic Veg N Dry Y Prvations, etc. Miser swall packets of standing water of channel dug in ag field
~ 900 mm CSP culvest, South side	or chancel any in my ties
- de	
Field Notes Authored by Field No	otes QA/QCed by



	Duniant Name	· Nimara W	) and farm
Station # <u>CL-(R4</u>	Project Maine	160960269	
Watercourse Name	FIOJECT #	Trevor + Hami	د ا
Photos <u>% 928</u>	T: 1/	50	
Date 19 Sept 2012	<del>-</del>		
Weather conditions in previous 24 hrs GPS Coordinates (Zone)E0	Tire	N 4767853	Datum Nad 83
GPS Coordinates (Zone) E OR	41786	week of Herry 3	
Descriptive Location Concession Loc	d 4 = 30 m s	733. 3: HJ	
Water Quality Organization (mg/L)	pHCor_ Air Tempera	ductivity (μS/cm) _ ture (°C)	
Watercourse Dimensions & Morphology			(am)
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m)  % Riffle  Stidenge of grading banks. Comments on	Maximum Po	ool Depth	(cm)
Mean Bankfull Width 4 (m)	Mean Water	Depth	(CIII) % Flat
% Riffle	_% Pool	% Hun	/6 i lat
% Riffle Evidence of eroding banks, Comments on	oank stability	//0	
Substrate (% cover)			Marale
BedrockCobb	eSand	1 (Soil) 100/.	SiltMuck Marl Detritus
Substrate (% cover)  Bedrock Cobb  Boulder Grave	lClay	N	Mari Detritus
Cover Types Present (circle): Under Overhanging Vegetation Woody Debromand Riparian Zone Riparian Cover (% of watercourse shaded South Side - 10).	S Bouldon		
Adjacent Land Use  Agricultural, 100	disa final re	sidential	,
- Agricanos, ros			
Fish Habitat Potential Critical Habitat (spawning or nursery area	s, groundwater upwel	lings)	
Migratory Obstructions (seasonal, permar	ent) no-low f	lou	
Note any fish observations	V.0		
Waterbody Notes Natural Watercourse Trapezoidal Surficial Drainage (i.e. furrows) Du Other Habitat Notes, Incidental Wildlife	gout Pond N Do	minated by Aquation	
a 450 mm CDF eqluer	Sever size of the	1 = 0/a\$\$0\$ < 09	MUNITURE WILEST
	hannel is plough	ed on south sid	C
Field Notes Authored by Hamish	Field Notes QA/QCed by		



Stantec	A second second
Station # CL Younge	Project Name Nagara Wind Farm
Watercourse Name	Project # 160960259
Photos 3/30 - 3/34	Field Staff Treups & Hamish
Date 19 Sept	Time <u>5:20 p w</u>
Weather conditions in previous 24 hrs	Le - Rain 150
GPS Coordinates (Zone) TT E 061	9315 N 4774960 Datum Nad83
	Young part St
Agricultural land,	(wal residential - 300 east of clayson re
Water Quality HAR -	
Dissolved Oxygen (mg/L)pH	Conductivity (μS/cm)
Dissolved Oxygon (ms)	Conductivity (μS/cm) Air Temperature (°C)
Water Temperature (°C) Time in situ measurements taken	
Watercourse Dimensions & Morphology	Maximum Pool Depth(cm)
Mean Watercourse Width (m)	Mean Water Depth (cm)
Mean Watercourse Width(m)  Mean Bankfull Width(m)	Pool % Run% Flat
Evidence of eroding banks, Comments on bank	K Stability
2 1 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	
Substrate (% cover)	16 Sand 80 Silt Muck
DCG10ON	A 4 - 1 1/2 M. Dotritue
BoulderGravel	
Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, do	minant vegetation, mature or early successional)
Adjacent Land Use  Adjacent Land Use  Adjacent Land Use	d side, rwal residential
779 (201 30)	
Fish Habitat Potential	durator unwallings)
Critical Habitat (spawning or nursery areas, gr	oundwater upweilings)
Migratory Obstructions (seasonal, permanent)	land flow
Note any fish observations	710
Waterbody Notes  Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugour	t Pond Dominated by Aquatic Veg Div
Other Habitat Notes, Incidental Wildlife Ob small to culvest observed, dojac then flows southwards	
- Then tions somewards	15 - 1100
o open	d Notes OA/OCed by
Field Notes Authored by han 5h Field	d Notes QA/QCed by



Stantec	Annual Marie Control
Station # CL-Fly Rd	Project Name Hingary As Wind Farm
Natercourse Name Sacra Jeen	Project # 16076029/
Photos 8156 8160	Field Staff Trevos & Hamish
Date 1 >20 2	Time 6:30 pm
in provious 24 prs	Fine -Pain 15 C 0039 N 4776898 Datum Nad83
GPS Coordinates (Zone) E 062	_0089 N 41788 N Datom Nove
Descriptive Location Fly Ad - 400 W	west of South Grimsley Rd 3
Bossipare Least	
Water Quality NA - Org (worky) Dissolved Oxygen (mg/L) ph Water Temperature (°C)	H Conductivity (μS/cm)
Dissolved Oxygen (mg/L)ph	- Conductivity (po/on)
Water Temperature (°C)	Air Temperature (*C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	Maximum Pool Depth 30 (cm)
Moon Watercourse Width > (III)	Maximum Pool Depth 10 (cm)
% Riffle%	6 Pool% Run% Flat
Evidence of eroding banks, Comments on bar	nk stability Bankeresian south state of road, me
amount	
Substrate (% cover)  Redrock  Cobble	Sand 70 Silt Muck
Bedrock Scobble	Sallu
BoulderGravel _	36 Clay Mari Detritus
Overhanging Vegetation Woody Debris  Riparian Zone  Riparian Cover (% of watercourse shaded, do	ominant vegetation, mature or early successional)
Adjacent Land Use Wooded area lura	Cresidential
Fish Habitat Potential Critical Habitat (spawning or nursery areas, g	
Migratory Obstructions (seasonal, permanent	
Note any fish observations	small one
Waterbody Notes Natural Watercourse May Trapezoidal Che Surficial Drainage (i.e. furrows) Dugou Other Habitat Notes, Incidental Wildlife Of	
Box culvet	- 2 4 m wide
	1 Ace
Field Notes Authored by Hamsh Fie	eld Notes QA/QCed by



Stantec			* .	appare.	
Station # CL-Flyrd		Project Name_		(ALDA	<del></del>
Watercourse Name Tob to	Orina Cutor	Project #	160450 A64	Hams	The
Photos 850-6	The second secon	Field Staff Tye			h 1MVY
Date Sept 19 /A		Time			
Weather conditions in previous 2	24 hrs Vau	n -15°C		Datum	NADE.
GPS Coordinates (Zone)	E 1/22 08(		N 4 776663		
Descriptive Location Fly	PA - Couty	Converse	MIRAUI	<u> Cha</u>	
Descriptive Location					
		1 Dry			
Water Quality	pH	Condi	uctivity (μS/cm)		
Dissolved Oxygen (mg/L)	. 7	Air Temperatu	re (°C) 170		
Water Temperature (°C)		7			
Time in situ measurements take					
Watercourse Dimensions & M	orphology	Maximum Poo	I Depth	(cm)	
Mean Watercourse Width	(m)	Maximum Foo	epth	· ·	
Mean Watercourse Width  Mean Bankfull Width  Of Biffle	(m)	Mean water L	% Run		% Flat
% Riffle	% Poo	)I			
Evidence of eroding banks, Cor	nments on bank sta	iolity 572			
Substrate (% cover)	Cobble	Sand_	00 % Silt		Muck
Bedrock	Gravel		Ma	<u>rl</u>	Detritus
Boulder					
Overhanging Vegetation W  Riparian Zone Riparian Cover (% of watercou	محاصمات المالية	ent vocatation. I	mature or early suc	cessional)	
Adjacent Land Use	_	eld/pa			dente
J					
Fish Habitat Potential Critical Habitat (spawning or no	ursery areas, groun	dwater upwellin	gs)		
Migratory Obstructions (season	nel permanent)			,	
Note any fish observations	0000				
Note any fish observations	11//11/2				
Waterbody Notes		. /	assed Swale	Buried 1	Tile
Natural Matercourse	Frapezoidal Channe		insted by Agustic \	 /en	Dry
Surficial Drainage (i.e. furrows	) Dugout Pol	nu Doi:	inated by Aquatic \		
Other Habitat Notes, Inciden		etions etc	Oppled ina	terink	)AC
Other Habitat Notes, Inciden	Selloe tis	valions, etc つえれし	vicle)		
	-	es QA/QCed by	1/52		
Field Notes Authored by C \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	YOU VE Fleid Note	es QA/QCed by	<i></i>	A. Danid Assass	ment Enm



Stamec	
1-11-14 CI EN 142 /C	Project Name Nagana Wino
ration # CL Flyrd 2 / Creek Vatercourse Name Trub to Pring Creek	Project # 10090000
MAICOUISE MAINE	Field Staff hand an Hamse 1901
hotos	Time 6.40
ate Sept 19/12	
	N 176 82 Datum Na a s
PS Coordinates (Zone) 7 E 06304	west of South Granibyed 3
escriptive Location	
CB14	
DRY /	
Vater Quality  Dissolved Oxygen (mg/L)  pH	Conductivity (µS/cm)
//22014ed Oxygon (a -/	Air Temperature (°C) 17°C
	/ III 1011.por
ime in situ measurements taken	
Vatercourse Dimensions & Morphology	
Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Watercourse Width (m)	Mean Water Depth(cm)
	. % Dun % Flat
% Hille Comments on bank si	tability Aable
Evidence of eroding banks, Comments on Same of	
Substrate (% cover)	Sand 70 SiltMuck
Bedrock Cobble	Out to
BoulderGravel	Clay Marl () Detritus
Riparian Zone Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature or early successional)
	oadside dital
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground for the first of the	
Note any fish observations/\ 0/10	
Surficial Drainage (i.e. furrows) Dugout Po	
Other Habitat Notes, Incidental Wildlife Obser	trations, etc.  Ited by grasses. Read acts drainage  as whole your
Field Notes Authored by T. Chandler Field No.	otes QA/QCed by
Aguatic Resources\Fig	eld Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.do
G:\01609\resource\internal into and Teams vigation	



Stantec	Marrie Parker		1 200		
Station # CLF/4 Rd	3 / <u>L</u>	Project Nam	e <u> </u>		
Watercourse Name Vib to 3	Dring Comple	Project #	1604104		n it Aub
Photos 8 66-8 70	med	Field Staff_	1.(\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		* <u> </u>
Data Spot 1911 A		Time			
Meather conditions in previous 2	24 hrs <u>Rain</u>	. 1590	L. L. surgeoner / _ f	(A) Datu	m NIAAK3
and Opendinated (7000)		210	N 47766	Date Date	
Descriptive Location	u Road, 40	m fact c			
Water Quality	1114				
Dissolved Oxygen (mg/L)	bH	Co	nductivity (µS/cm	"	
Water Temperature (°C)	<del></del>	Air Tempera	ature (°C)		
Time in situ measurements take	en				
· · · · · · · · · · · · · · · · · · ·					
Watercourse Dimensions & M	orpnoiogy	Maximum F	Pool Depth	(cm)	
Mean Watercourse Width	(m)	Mean Wate	r Depth	(cm)	
Mean Bankfull Width	(''') % Po		% Ru	n	% Flat
% Riffle Evidence of eroding banks, Cor	mments on bank s	tability 🖂	able		
Evidence of eroding banks, Col	Timento on burne				
Out strate (% cover)				<b></b>	Munde
Substrate (% cover)	Cobble		10	Silt	Muck
Boulder		Cla	у	Marl	Detritus
Riparian Zone Riparian Cover (% of watercount Adjacent Land Use	rse shaded, domin	nant vegetatio	n, mature or earl	y successiona /harthrid	de is 105 mowed
Adjacent Land Ose	2 vesiden	+2///	MNS / YOU	Kanara a	
Fish Habitat Potential Critical Habitat (spawning or n	urserv areas, grou	ndwater upwe	ellings)		
		VALL NOTO			
Migratory Obstructions (seaso	nal, permanent)	Iru cha			
Note any fish observations	MM				
Waterbody Notes		I	Grassed Swale_	Buri	ed Tile
	Trapezoidal Chann	iel	ominated by Ann	atic Veg	_ Dry
Surficial Drainage (i.e. turrows	s) Dugoul r	Onu	Official by Aqu		
Other Habitat Notes, Incider	aal Wiidlife Obco	rvations etc.	Box cult	RLL IN	1,0000
Other Habitat Notes, Incider	Nai Wildine Cose	i vations, oto		1 1	) 1
bo Han Straight	<u> </u>				
	. /		11		
Field Notes Authored by T. Chay	dev Field N	otes QA/QCed by	111	•	economent Form



Stanuet	1 1	<b>A</b> ***	
Station # Naky Ray		Project Name	TO YOU WALL
Watercourse Name TV 6 TOUR	and the	Project # 100950a	We want by Andrew
Photos 8 1 1 5		Field Staff	
Data CRATING IS		Time 7:05	
Weather conditions in previous 24	hrs $\underline{\qquad}$	N - 17	775 Datum Naci 8
GPS Coordinates (Zone)	<u> E 06214</u>		
Descriptive Location	<u> </u>		
		/	
Water Quality ○R^	/ ·	Canductivity (US/	cm)
Dissolved Oxygen (mg/L)	pH	Air Temperature (°C)	700
Water Temperature (°C)		Air Temperature (C)	
Time in situ measurements taken_			
Watercourse Dimensions & Mor	phology	<b>-</b>	(am)
Moon Watercourse Width	(m)	Maximum Pool Depth	(cm)
Mean Bankfull Width 3	(m)	Mean Water Depth	(CIII) Run % Flat
o/ D:#!o	% PC	OI/0 F	run
Evidence of eroding banks, Comm	nents on bank s	tability <u>Tana</u>	
0		- 11 M	
Substrate (% cover) Bedrock	Cobble	Sand100 %	SiltMuck
Boulder	Gravel	Clay	Marl Detritus
boulder			
Cover Types Present (circle): Overhanging Vegetation Woo  Riparian Zone Riparian Cover (% of watercourse	e shaded, domin	Boulder Other	urly successional)
70%, ara	HU, MUNY		
Adjacent Land Use	felds ru	ral residential	
Fish Habitat Potential Critical Habitat (spawning or nurs	on areas aroun	ndwater upwellings)	
Critical Habitat (spawning or nurs	ery areas, groun	nono noteal	
Migratory Obstructions (seasonal	, permanent)	v channel	
Note any fish observationsY	rane		
Waterbody Notes	idal Chann	Grassed Swale	Buried Tile
Natural Watercourse Tra	pezoldai Chann	The state of the s	
Surficial Drainage (i.e. furrows)_	Dugout Po		
Other Habitat Notes, Incidental	Wiidlife Obser	vations, etc. ( <u>A/I) will (</u>	Jr (Will at, Org,
200 AUG		NA	
Field Notes Authored by Tr Chand	Field No	tes QA/QCed by	



Stallter	Allega a labad
eation # Walker Rd 2.1E	Project Name Niggara Wind
atercourse Name Trub to Coving Cre	Field Staff T. Chandler, Hamish Aubreu
otos 8/16-82	I ICIO Otali
	Time 7:15
eather conditions in previous 24 hrs	N 4 7 7 9 7 3 Datum \ 1.008
no Operation to C / One)	A STOP WAS OF BUILD Rd
escriptive Location	an inchite inchite
500npc	
Veter Quality	
rater Quality issolved Oxygen (mg/L) pH	Conductivity (µS/cm)
rater Temperature (°C)	Air Temperature (°C) 17°C
me in situ measurements taken	
/atercourse Dimensions & Morphology	Maximum Pool Depth(cm)
lean Watercourse Width(")	Moon Water Depth (CIII)
ean Bankfull Width(m) % Riffle% P	% Qun % Fidi
% Riffle	stability Aahle
vidence of eroding banks, Comments on banks	otability -
ubstrate (% cover)  Bedrock Cobble	Sand 100 % Silt Muck
BoulderGravel	
Riparian Cover (% of watercourse shaded, dom	inant vegetation, mature or early successional)
Adjacent Land Use	elds a rural residential
Fish Habitat Potential Critical Habitat (spawning or nursery areas, gro	undwater upwellings)
Migratory Obstructions (seasonal, permanent)	hannel
Note any fish observations	Q .
ur sanbadu Notos	5 Durled Tile
Waterbody Notes Natural Watercourse Trapezoidal Char	Grassed Swale Buried Tile
Outlinial Drainage (i.e. furrows) Dugout	Pond Dominated by Aquatic vog
Durillia Diamago (nor ranono)	COMME OCA CULINER
Other Habitat Notes, Incidental Wildlife Obs	ervations, etc. 900mm CSP CULVEY
Other Habitat Notes, including the wat	er preferit
	7
4.3	State of the state
Field II Chandley Field	Notes QA/QCed by
Field Notes Authored by Field I	Signal Shoots/Stantec/Form 02 Wind Farm Waterbody Rapid Assessment Form
G:\01609\resource\Internal Info and Teams\Aquatic Resources\I	Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form



Stantec	y -	fi
04-41-14 RITOOI-I	Project Name Niagara Wind	<u> </u>
Station #Watercourse Name	Project # 160950269	
Photos See log	Field Staff	
Date Jury 12 2013	Time	
Weather conditions in previous 24 hrs	) I all a land a	
GPS Coordinates (Zone) E V	399 N 4765629 Datu	ım
Descriptive Location Valuable Fol	4 SE 14	
Water Quality	7 \$ ( and with the (v. \$\)(am) 1513	
Water Quality Dissolved Oxygen (mg/L) 10.01 pH_ Water Temperature (°C) 25.05°	A: Township (90)	
Water Temperature (°C)	Air Temperature (°C)	
Time in situ measurements taken	pm	
Watercourse Dimensions & Morphology		
Mean Watercourse Width (m)	Maximum Pool Depth (cm)	
Mean Bankfull Width (m)	Mean Water Depth (cm)	% Flat
% Riffle 0.0 % Po	ool% Run	/0 1 ide
Evidence of eroding banks, Comments on banks	stability	
Substrate (% cover)	~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~	Munk
Bedrock Cobble	2 Sand Silt Silt	Muck Detritus
Boulder Gravel	Clay Marl	
Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris  Riparian Zone	Boulder Other	quatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature or early successional	'/
Adjacent Land Use		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ndwater upwellings)	
Migratory Obstructions (seasonal, permanent)		
Note any fish observations		
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Po	el Grassed Swale Buried ond Dominated by Aquatic Veg	
Other Habitat Notes, Incidental Wildlife Obser	vations, etc.	
- WINNEY INTO	*** *** *** *** *** *** *** *** *** **	
9		
Sield Notes Authored by Field Note	les QA/QCed by	



	WIND FARM	WATERBOD	Y RAPID ASS	ESSMENT FO	ORM	
Stantec					^	JON RFA
Photos <u>\$8</u> Date <u>Jun</u> Weather cond	Name 02-1 50 2 7, 2012 ditions in previous 24 ates (Zone) 17 1		Project #_160 Field StaffT Time 6:10 Pi	1 Chandler	MEllah	
Dissolved Oxy Water Tempe Time in situ m	rature (°C) neasurements taken_	pH	Air Temperatur	e (°C) <u>20</u>		
Mean Watero	Dimensions & Mor ourse Width	1 (m) (m) 2 8 Po	Maximum Pool Mean Water De	Depth//	(cm) (cm)	corn
In-water Cov	Procent (circle):	Cobble Gravel Undercut Bar	Sand_ Clay_ nks: Deep Ro	Sil Ma	arl [	Muck Detritus tic Veg
Riparian Zon	er (% of watercourse :			otherature or early suc	cessional)	
Fish Habitat I	,	ry areas, ground	dwater upwellings	)		
A second and the seco	tructions (seasonal, pobservations	•				
	course Trape age (i.e. furrows)		•		,	
Other Habitat	Notes, Incidental W	/ildlife Observa	ations, etc			
Field Notes Authore	d by T. Chardler	Field Notes	QA/QCed by			



NON

Station # BILTO 02	Project Name NI AGARA	WIND
Photos 3 ST 8851  Date June 7, 2017	Field Staff Chandler M Time	Ellah
Weather conditions in previous 24 hrs 1544 + GPS Coordinates (Zone) E 67 7 39  Descriptive Location	hunder showers; Sunny 4 N 476 5896	Datum
Water Quality DRY - TILE DRA  Dissolved Oxygen (mg/L) pH  Water Temperature (°C)  Time in situ measurements taken	Conductivity (μS/cm) Air Temperature (°C)2	
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m)% Riffle% Pool Evidence of eroding banks, Comments on bank sta		(cm) (cm) % Flat
Substrate (% cover) DRY Bedrock Cobble Boulder Gravel	Sand Silt Marl	Muck Detritus
In-water Cover DRY  Over Types Present (circle): Under tit Ban  Overhanging Vegetation Woody Debris	ks Deep Pool Watercress Boulder Other	Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, dominar	nt vegetation, mature or early succes	ssional)
Adjacent Land Use		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	water upwellings)	
Migratory Obstructions (seasonal, permanent)  NO FLOW  Note any fish observations		
Note any list observations		
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond		
Other Habitat Notes, Incidental Wildlife Observa	tions, etc.	
Field Notes Authored by 1. Chardler Field Notes of	QA/QCed by	



REA

Station #_RITO 0 Z  Watercourse Name0 z - 3  Photos	Project Name NIAGARA WIND Project #_160950269 Field Staff T. Chandler, M. Ellah Time 6:30 PM
Weather conditions in previous 24 hrs  GPS Coordinates (Zone)  Descriptive Location  Rlong property  Line	N476 5973 Datum
Water Quality Dissolved Oxygen (mg/L) pH_ Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/cm) Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width	
Substrate (% cover) BedrockCobble BoulderGravel	Sand Silt 20 Muck Clay Marl 60 Detritus
In-water Cover Cover Types Procest (sircie): Undercut Ban Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domina Adjacent Land Use Agricultural Fields (w. cops	nt vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	dwater upwellings)
Migratory Obstructions (seasonal, permanent)  Note any fish observations	
Waterbody Notes Natural Watercourse / Trapezoidal Channel Surficial Drainage (i.e. furrows) / Dugaut Pone	Grassed Swale Burjed Tile d Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	ations, etc. <u>Sagi Hariam</u> , sedan
Field Notes Authored by Field Notes	QA/QCed by



Station #RITOO		Project Name	Niagava v	lind
Watercourse Name			0450269	0.14.0
Photos See 109		Field Staff	FIG	
Date	1/2012	Time 4:1	NA.	
Weather conditions in previous	s 24 hrs	& Sanny		
GPS Coordinates (Zone)	JTE 6100		4764012	Datum Nac
Descriptive Location	clapor	ov. Soona		Evant 6
	¥ 1			
Water Quality				
Dissolved Oxygen (mg/L)	pH	Conducti	vity (uS/cm)	
Water Temperature (°C)		Air Temperature (	°C)	
Time in situ measurements tak	:en			
Watercourse Dimensions &	Morphology .			
Mean Watercourse Width	(m)	Maximum Pool De	inth /	(am)
wean banktull width	(m)	Mean Water Depth		(cm)
% Riffle	% Poo		9/ D.	(cm)
Evidence of eroding banks, Co	mments on bank sta	bility/	/8 NUII	% F
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Monale
Boulder	Gravel	Clay	Siit Mart	Muck
n-water Cover		<del></del>	iviali	Detritu:
liparian Cover (% of watercours	se shaded, dominan	t vegetation, mature	or early successio	nal)
·				
rish Habitat Potential Critical Habitat (spawning or nurral digratory Obstructions (seasonal	ll, permanent)			
ote any fish observations				
/aterbody Notes atural Watercourse Tra urficial Drainage (i.e. furrows)_/	pezoidal Channel Dugout Pond_	Grassed S	wale Buri	ied Tile
ther Habitat Notes, Incidental	Wildlife Observation	ons. etc. Sunf	b	age or
ld Notes Authored by		Lokald	12	
	FIGURIOTES CAR	Ocad his 1/17 1 Marie	The state of the s	
01609\resource\internal Info and Teams\Aq	Field Notes QA		- Manager	



		1 63
Station # R 11 170 04 - 1	Project Name Niag	ara Wina
Watercourse Name	Project #	1269
Photos	Field Staff KE+ JE	
Date NUMP 12 20	Time 9.16 AM	
Weather conditions in previous 24 hrs	regain NASAE	18 2 Datum New 83
GPS Coordinates (Zone) TE 62	7606 N4768	Datum 7 3 3
Descriptive Location Conc. 4 6 4	10derins Ra	
Beechpare	V	
Water Quality	7.43 Conductivity (μS Air Temperature (°C)	(cm) 984
Dissolved Oxygen (mg/L) pH	Conductivity (µS	7 2 0
Water Temperature (°C)	Air Temperature (°C)	<u> </u>
Time in situ measurements taken 9 20	$+\infty$	ł į
		My except in a
Watercourse Dimensions & Morphology Mosp Watercourse Width (m)	Maximum Pool Depth	(cm)
Medi Matorocares	Mean Water Depth	(cm)
Mean Dankidii Widui	Pool %	Run% F
% Riffle% Evidence of eroding banks, Comments on bank	k stability Some excel	<u> </u>
Evidence of eroding banks, comments		
Substrate (% cover)		Silt Muck
BedrockCobble	20 Sand	SiltMuck MarlDetritu
Boulder Gravel	<u>ନ୍ଧ</u> Clay	water Startain, I'
Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dor	Boulder Other	arly successional)
Riparian Cover (% of watercourse shaded, doi	milane rogues	
Adjacent Land Use	*	
A5-5046Pan		
Fish Habitat Potential		
Critical Habitat (spawning or nursery areas, gro		
Critical Habitat (spawning or nursery areas, grown Migratory Obstructions (seasonal, permanent)		
Critical Habitat (spawning or nursery areas, gro		
Critical Habitat (spawning or nursery areas, grown Migratory Obstructions (seasonal, permanent)		
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes	,	Buried Tile
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Note any Materbody Notes  Note any Materbody Notes	nnel Grassed Swale	
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes	nnel Grassed Swale	
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Characteristical Drainage (i.e. furrows) Dugout  Other Habitat Notes, Incidental Wildlife Observations	nnel Grassed Swale Pond Dominated by Ad	
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Characteristical Drainage (i.e. furrows) Dugout	nnel Grassed Swale Pond Dominated by Ad	quatic Veg Dry
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Characteristical Drainage (i.e. furrows) Dugout  Other Habitat Notes, Incidental Wildlife Observations	nnel Grassed Swale Pond Dominated by Ad	quatic Veg Dry

REAS Conc. H REA-6 loses definition grassy suble NON REA-5



	REA	
qeestomou.	T004-	ستخصر بر پزوردوس محمد بروم

Stantec	F43				
Station # R 11 TO 04 - 2	Project Name Niagara Wind				
Watercourse Name	Project # 160950269				
	tos <u>see lan</u> Field Staff KE+ JK				
Date JUNC 12 2012					
Weather conditions in previous 24 hrs	h				
GPS Coordinates (Zone)	27568 N 4768177 Datum				
Descriptive Location Conc. 4 @ U	Warins Rd				
Water Quality	- 4/1				
	HConductivity (μS/cm)				
Water Temperature (°C)	Air Temperature (°C) 13'				
Time in situ measurements taken	All formporators ( o)				
Tille III Situ Tileasurei Tierits takeri					
Watercourse Dimensions & Morphology	The state of the s				
Mean Watercourse Width(m)	Maximum Pool Depth(cm)				
Mean Bankfull Width (m)	Mean Water Depth(cm)				
	Pool% Run% Flat				
Evidence of eroding banks, Comments on ban	k stability				
Substrate (% cover)					
Bedrock Cobble	O Sand W Silt Muck				
Boulder O Gravel					
In-water Cover Cover Types Present (circle): Undercut	Banks Deep Pool Watercress Aquatic Veg				
Overhanging Vegetation Woody Debris					
Riparian Zone					
Riparian Cover (% of watercourse shaded, don	minant vegetation, mature or early successional)				
Adjacent Land Llag					
Adjacent Land USE					
Fish Habitat Potential					
Critical Habitat (spawning or nursery areas, gro	oundwater upwellings)				
Minutes Obstacling (according					
Migratory Obstructions (seasonal, permanent)	Org .				
Note any fish observationsV ⋈					
•					
Waterbody Notes					
Natural Watercourse Trapezoidal Chan	nnel Grassed Swale Buried Tile				
Surficial Drainage (i.e. furrows) Dugout F					
· · · · · · · · · · · · · · · · · · ·					
Other Habitat Notes, Incidental Wildlife Obse	ervations, etc.				
Debod chand by deter agrate ver					
) ) ) )					
1.0.1	1 There				
Field Notes Authored by LFAL Field N	lotes QA/QCed by				





Station # RN TO OUL -	3	Project Name	Viagara W	lind
Watercourse Name		Project # //oc	1950269	
Photos See lon		Field Staff		
Date June 12 201	- Japan .	Time 1		
Weather conditions in previous	24 hrs 6000	<u></u>		
GPS Coordinates (Zone)	T E 027	(o ( ) N	4767868	Datum
Descriptive Location Conc	11 @ Works	Vins Rd. 0	100 80x 400 m	sinhol come.4
	U U	7		
Water Quality	and the same of th		dul	
Dissolved Oxygen (mg/L)	pН	Conducti	vity (μS/cm)/	
Water Temperature (°C)			°C)	
Time in situ measurements take				
Watercourse Dimensions & N	Morphology			
Mean Watercourse Width		Maximum Pool De	epth	_(cm) /\/ / /
Mean Bankfull Width	(m) [.]	Mean Water Dept	h	_(cm) /
% Riffle	% Pc	•	% Run	% Flat
Evidence of eroding banks, Con	mments on bank s	tability		
veg + stable				
Substrate (% cover)				
Bedrock	Cobble20	Sand		Muck
Boulder	Gravel 80	Clay	<u>Marl</u>	Detritus
Overhanging Vegetation W  Riparian Zone  Riparian Cover (% of watercour				sional)
Ripanan Cover (% oi watercoul	se siladed, domin	ant vegetation, mate		
Adjacent Land Use	010,504	a hay.		
		/		
Fish Habitat Potential	å			
Critical Habitat (spawning or nu	rsery areas, groun	idwater upwellings)	•	
Migratory Obstructions (season	al, permanent)			•
Note any fish observations		,		
Waterbody Notes			_	
	apezoidal Channe			uried Tile
Surficial Drainage (i.e. furrows)	Dugout Por	nd Dominated	l by Aquatic Veg	Dry
Other Habitat Notes, Incidenta	al Wildlife Observ	ations, etc		
estimated a Florida	< < < \ / \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	+ Dumous	no crackit	(Fallicantions fodies
3 agricula Flora		Λ Λ.		<u> </u>
Field Notes Authored by	Field Note:	s QA/QCed by	2 January 18 mily 18 m	

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



# WIND FARM WATERBODY RAPID ASSESSMENT FORM RITTO 94-4

Station # 12 11 10 04 - 4	Project Name Niagara Wind
Matercourse Name	Project #_160950269
Photos (se 149	Field Staff
Photos See 19 Date June 3-24 hrs 6/1	Time <u>9:55</u> Am
	W 151651607 Potum
SPS Coordinates (Zone) E Descriptive Location	27484 N 4767693 Datum
3pg Coordinates (2010) Sware of Crow	pright by fail feet foods - south it Cove. 4 oppose 600 -
Descriptive Location	
Water Quality	pH Conductivity (μS/cm)
Dissolved Oxygen (mg/L)	Air Temperature (°C)
Notor Temperature (°C)	Air Temperature ( 0)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	Maximum Pool Depth(cm)  Mean Water Depth(cm)  % Pool% Run% Flat
Mean Watercourse Width(m)	Maan Water Denth (cm)
Mean Bankfull Width(m)	_% Pool% Run% Flat
v uma	/0 / 001
Evidence of eroding banks, Comments on	bank stability
- Landa (W. cowod)	
Substrate (% cover)  Bedrock Cobb	oleSandSiltMuck
Boulder Grave	
Doningi	· ·
Overhanging Vegetation Woody Debr Riparian Zone Riparian Cover (% of watercourse shaded	dominant vegetation, mature or early successional)
40 10 0011000 3 3 1000	6 S
Adjacent Land Use	
7.5	
Fish Habitat Potential Critical Habitat (spawning or nursery areas	s, groundwater upwellings)
Migratory Obstructions (seasonal, perman	ient)
CONNECTIVITY	
Note any fish observations	7
Waterbody Notes	Channel Grassed Swale Buried Tile
Natural Motorcourse Trapezoidal	Channel Grassod Gwals Day
Surficial Drainage (i.e. furrows) Du	gout Pond Dominated by Aquatic veg_v 5.5
Other Habitat Notes, Incidental Wildlife	Observations, etc.
- Law Lynn, wet area	CANTINA BARRASED EN
waterboant ain	the washe about connections.
- vet a rea in the pude	AVIETH THE PACE CORLING INTO IT
Field Notes Authored by	Field Notes QAQCed by John
PIGG IN THE ALUIU OU VI	



Ni maria	Ministracian	Westernam .	00	Contraction of the second	R	for f
<	and design the state of the contract of the co	المتحارض أخروه والمستريدة	And described	0	OX	1-
				Para.	-9"	** Constant

Station # RITOUY-S	Project Name Niagara L	1/1/9		
Watercourse Name	Project # 160950269			
	Field Staff Karana Staff			
Photos Date June 12 2017	Time <u>0.40</u>			
Weather conditions in previous 24 hrs				
CDC Coordinatos (7one) F	N	Datum /		
Descriptive Location Conc. 4 100 /	n east of 400gus	i Ra		
at 400 m south in	6010			
Water Quality	Conductivity (μS/cm)			
Dissolved Oxygen (mg/L) pH	Air Tomperature (°C)			
Water Temperature (°C)	All Temperature ( 0)			
Time in situ measurements taken				
Watercourse Dimensions & Morphology				
Maan Watercourse Width (m)	Maximum Pool Depth	_(cm)		
Mean Bankfull Width (m)	Mean Water Deptn	_(CIII)		
% Riffle % Po	ool	% Flat		
Evidence of eroding banks, Comments on bank s	tability <u>/</u>			
Substrate (% cover)  Redrock Cobble	Sand Silt_	Muck		
	Clay Mari	Detritus		
BoulderGravel	Old)	*		
Overhanging Vegetation Woody Debris				
Riparian Zone Riparian Cover (% of watercourse shaded, domin		sional)		
Diversion Zone		sional)		
Riparian Zone Riparian Cover (% of watercourse shaded, domin		sional)		
Riparian Zone Riparian Cover (% of watercourse shaded, domin  Adjacent Land Use		sional)		
Riparian Zone Riparian Cover (% of watercourse shaded, domin  Adjacent Land Use  Fish Habitat Potential	ant vegetation, mature or early succes	sional)		
Riparian Zone Riparian Cover (% of watercourse shaded, domin  Adjacent Land Use	ant vegetation, mature or early succes	sional)		
Riparian Zone Riparian Cover (% of watercourse shaded, domin  Adjacent Land Use  Fish Habitat Potential	ant vegetation, mature or early succes	esional)		
Riparian Zone Riparian Cover (% of watercourse shaded, domin  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groun  Migratory Obstructions (seasonal, permanent)	ant vegetation, mature or early succes	esional)		
Riparian Zone Riparian Cover (% of watercourse shaded, domin  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ant vegetation, mature or early succes	esional)		
Riparian Zone Riparian Cover (% of watercourse shaded, domin  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groun  Migratory Obstructions (seasonal, permanent)	ant vegetation, mature or early success dwater upwellings)  Grassed Swale	Buried Tile		
Riparian Zone Riparian Cover (% of watercourse shaded, domin  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groun  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse  Trapezoidal Channe	ant vegetation, mature or early success  dwater upwellings)  Grassed Swale  Dominated by Aquatic Veg	. Buried Tile		
Riparian Zone Riparian Cover (% of watercourse shaded, domin Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groun Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Por	ant vegetation, mature or early success  dwater upwellings)  Grassed Swale  Dominated by Aquatic Veg	. Buried Tile		



K	6	77			
KII	1	)J	To the second of	**************************************	K
		with.			

Stantec			F 43
Station # RILTOO4 - 6	Project Name	Niagaral	Jind
Watercourse Name	Project # /	60950269	
Photos See lon	Field Staff	CE 4 N Kum	
Date	Time 0	24 Am	
Weather conditions in previous 24 hrs			
GPS Coordinates (Zone) E	27698	N 4 2 6 6 8	<u>Datum</u>
Descriptive Location	100 m	m Onat Of	LOXSIAN
Descriptive coodion		b	
Water Quality		<u> </u>	
Dissolved Oxygen (mg/L)		ductivity (μS/cm)	
Water Temperature (°C)	/ Air Temperat	ure (°C)	
Time in situ measurements taken			
Watercourse Dimensions & Morphology		\$	
an interpretation of the second of the secon	Maximum Po		(cm)
Mean Bankfull Width (m)	Mean Water	Depth	(cm)
% Riff a management of the contract of the con	% PUUI		% Flat
Evidence of eroding banks, Comments on b	ank stability		
Substrate (% cover)  BedrockCobble	<u> </u>	Silt_	
Boulder Gravel		Marl	Detritus
Overhanging Vegetation Woody Debris  Riparian Zone  Riparian Cover (% of watercourse shaded,	Boulder dominant vegetation,	w.·	ssional)
0.6			
Adjacent Land Use	•		
SON + May			4
Fish Habitat Potential			
Critical Habitat (spawning or nursery areas,	groundwater upwellin	ıgs)	
Citical Habitat (Spawing or Haros) and it	·		
Migratory Obstructions (seasonal, permane	nt)		•
Note any fish observations			
Note any list observations	/		
Waterbody Notes Natural Watercourse Trapezoidal C	hannel Gra	assed Swale	Buried Tile
Natural Watercourse Trapezoidal C Surficial Drainage (i.e. furrows) Dugo	1100111101	inated by Aquatic Veg	
Other Habitat Notes, Incidental Wildlife C			
- some channel debrit	ao var co	29 FOY CLP	
5 a then becomes in	DUNDA BU	axe up to	<u> </u>
	<u> </u>	8	
	^	**************************************	



REA	3m.l.
	active of the second

Water Couries Name   Maria   Project #   P	Station # RITOO	5-1	Project Name	Niaga	vd h	)ind
Date Meather conditions in previous 24 hrs  GPS Coordinates (20ne)	1/11/	1000	Project #17	20950269		
Weather conditions in previous 24 hrs  GPS Coordinates (Zone)  Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Water Temperature (°C)  Harrourse Dimensions & Morphology  Mean Watercourse With  Mean Bankfull Width  Mean Bankfull Width  Mean Water Depth  Water Temperature (°C)  Substrate (% cover)  Bedrock  Boulder  Gravel  Clay  Mari  Detritus  In-water Cover  Cover Types Present (circle):  Overhanging Vegetation  Woody Debris  Boulder  Gravel  Clay  Mari  Other  Riparian Zone  Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Waterbody Notes  Natural Watercourse  Natural Watercourse  Trapezoidal Channel  Grassed Swale  Buried Tile  Buried Tile  Surficial Drainage (i.e. furrows)  Dugout Pond  Dominated by Aquatic Veg  Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.		<u> </u>	Field Staff	KC MY		
GPS Coordinates (Zone)						***************************************
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Water Temperature (°C) Air Tempe	CPS Coordinates (7-12)	s 24 hrs	OC asers	ast.		
Water Quality Dissolved Oxygen (mg/L) Water Temperature (*C) Water Temperature (*C) Air Temperature (*C) Air Temperature (*C) Air Temperature (*C) Air Temperature (*C)  Water Course Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm) Mean Bankfull Width Evidence of eroding banks, Comments on bank stability  Substrate (*K cover) Bedrock Gobble Sand Clay Mari Detritus In-water Cover Over Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg  Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (*K of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Descriptive Leasting	7 E 0621	399 N	1 47476	3 Datum	MADA
Dissolved Oxygen (mg/L) PH Conductivity (µS/cm) Water Temperature (°C) Air Temperature (°C) Complete Mair Measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Maximum Pool Depth (cm) (cm) Mean Bankfull Width (m) Mean Water Depth (cm) % Rifle (m) % Pool (cm) % Rifle (m) % Pool (cm) % Rin (cm) % Flat Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Cobble Sand Silt (cm) Muck Boulder (clay (cm) Marl (cm) Detritus  In-water Cover (cover Types Present (circle): Undercut Banks (cover) Watercress (circle): Undercut Banks (cover) Types Present (circle): Undercut Banks (cover) Watercress (circle): Overhanging Vegetation (cover) Woody Debris (cover) Watercress (circle): Aquatic Veg (cover) Types Present (circle): Undercut Banks (cover) Watercress (circle): Overhanging Vegetation (cover) Woody Debris (cover) Watercress (circle): Overhanging Vegetation, mature or early successional)  Adjacent Land Use (cover) Watercourse shaded, dominant vegetation, mature or early successional)  Fish Habitat Potential (critical Habitat Potential (critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations (seasonal, permanent)  Note any fish observations (cover) Dugout Pond (cover) Dominated by Aquatic Veg (cm) Dry (cover) Dry (c	Descriptive Location					
Water Temperature (°C) Air Temperature (°C) 20°C  Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Maximum Pool Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm)  % Riffle % Pool % Run % Flat  Evidence of eroding banks, Comments on bank stability  Bedrock Cobble Sand Silt Muck Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Adjacent Land Use  Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.		no wa	Her		***************************************	***************************************
Water Temperature (°C)	Dissolved Oxygen (mg/L)	pH	Conduc	tivity (uS/cm)		
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm) % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Water Temperature (°C)	1	Air Temperature	(°C) 20°C		
Mean Watercourse Width (m)	8.3		•			
Mean Bankfull Width	Watercourse Dimensions & Mean Watercourse Width	Vorphology				
Riffle	Mean Bankfull Width	(m)	Maximum Pool [	Depth&O	(cm)	
Substrate (% cover)  Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.					(cm)	
Bedrock Cobble Sand Silt Muck Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Seasona  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Evidence of eroding banks, Co	mments on bank s	tability Stable	>% Run		% Flat
Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Accordance  Waterbody Notes Natural Watercourse Note any fish observations  Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Substrate (% cover)			-4		Market and the second s
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Bedrock	Cobble	Sand	S) Cilt	50	M. A a.l.
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Graffen Pady  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Seasonal  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Boulder	Gravel	Clav			
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse  Trapezoidal Channel  Grassed Swale  Buried Tile  Surficial Drainage (i.e. furrows)  Dugout Pond  Dominated by Aquatic Veg  Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Riparian Cover (% of watercour	oody Debris se shaded, domina	Boulder Ot	her	ssional)	
Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Trapezoidal Channel  Grassed Swale  Buried Tile  Surficial Drainage (i.e. furrows)  Dugout Pond  Dominated by Aquatic Veg  Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Adjacent Land Use	and grass	es, early			
Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Fish Habitat Potential Critical Habitat (spawning or nu	rsery areas, ground	dwater upwellings)			·
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc	Migratory Obstructions (seasona	al, permanent)			***************************************	***************************************
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc	Note any fish observations					
Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc						•
Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc		anezoidal Channol	1	l Consta		
Other Habitat Notes, Incidental Wildlife Observations, etc.		Punnit Don	- Grassed	o Swale	Buried Til	
	•					
	outer manitat notes, incidenta	ı Wildlife Observa	tions, etc.			
Field Notes Authored by Field Notes QA/QCed by Field Notes DA/QCed by						
	Field Notes Authored by	Field Notes	DA/OCed by MF			PERMIT AND ADDRESS OF THE PERMIT ADDRESS OF THE PERMIT AND ADDRESS OF THE PERMIT AND ADDRESS OF THE PERMIT ADDRESS OF THE PERMIT ADDRESS OF THE PERMIT AND ADDRESS OF THE PERMIT ADDRESS OF

bushlot RTI1005-3 bush lox PREA RT11005-1 REA PT 11005-2 ag-field X 20m1 as steld Farm Loubery. Non participant } Road Ryme



NON

Stantec		ė.	1 1	1.
Station #		Project Name	Maya V	<u> 1ma </u>
Natercourse Name Inknau	M	Project # Vande	0269	
Photos 18-124	<u> </u>	Field Staff		
Data Anyla/1		Time		
Weather conditions in previous 24	hrs 2º	C, over cast		- Vt. d 8
GPS Coordinates (Zone) 171	E	17	Date	
Descriptive Location		f Rumer, 400	w mg27	<u> </u>
Dicktrut	Carlo i	1 1		
	-no wat	ev		
Water Quality	pH	Conductivity (u	S/cm)	
Dissolved Oxygen (mg/L)	рп	Air Temperature (°C)		
Water Temperature (°C)		All Temperature ( 0)		
Time in situ measurements taken_				
Watercourse Dimensions & Mor	phology		,	
Mean Watercourse Width	(m)	Maximum Pool Depth_		•
Mean Bankfull Width	(m)	Mean Water Depth	(cm	
% Riffle			Run	% Flat
Evidence of eroding banks, Comn	nents on bank s	tability		
2 to to to (9/ 20/07)				
Substrate (% cover)  Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel		Marl	Detritus
Riparian Zone Riparian Cover (% of watercourse	e shaded, domin	nant vegetation, mature or	early successior	nal)
Adjacent Land Use				
mi i iliabitat Datamtial				
Fish Habitat Potential Critical Habitat (spawning or nurs	serv areas, grou	indwater upwellings)		
Childa Habitat (Spawiing of Hart	Annual Control of the			
Migratory Obstructions (seasona	I, permanent)			
Note any fish observations	<u>Nale</u>			
Note any fish observations				
Waterbody Notes				•
Natural Watercourse Tra	pezoidal Chani	nel Grassed Sw	Aguatic Vea	Dry
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)_	Dugout P	ondDominated by	Aquatic veg	
Other Habitat Notes, Incidenta				
		1 1		•
Field Notes Authored by	Field N	otes QA/QCed by		

Refer TO
RITTOOS-3 Or
RITTOOS-1
For Drawing of
grassy wate
grassy wate



REA

-		<b>1</b>
<b>N</b>		7
	28	

Watercourse Name Property Photos Property Property Photos Property	oject Name Niagara Wind oject # 160950269 eld Staff 160, MF me 4:32 arer cast N 4748086 Datum Nad 83 Rymer Road 400m 1204
Water Quality Dissolved Oxygen (mg/L) 7,24mg/L pH 8.7 Water Temperature (°C) 19,04°C Ai Time in situ measurements taken 4.3	r Temperature (°C) <u>るの°C</u>
Substrate (% cover)  Bedrock Cobble	Sand O Silt HO Muck O Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Bo	Deep Pool Watercress Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, dominant of Signature of Sig	regetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwa	
Migratory Obstructions (seasonal, permanent)  Note any fish observations School of cup	cin idae:
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observation	ns, etc. frogs - chorus
Field Notes Authored by V Field Notes OA	OCed by MF

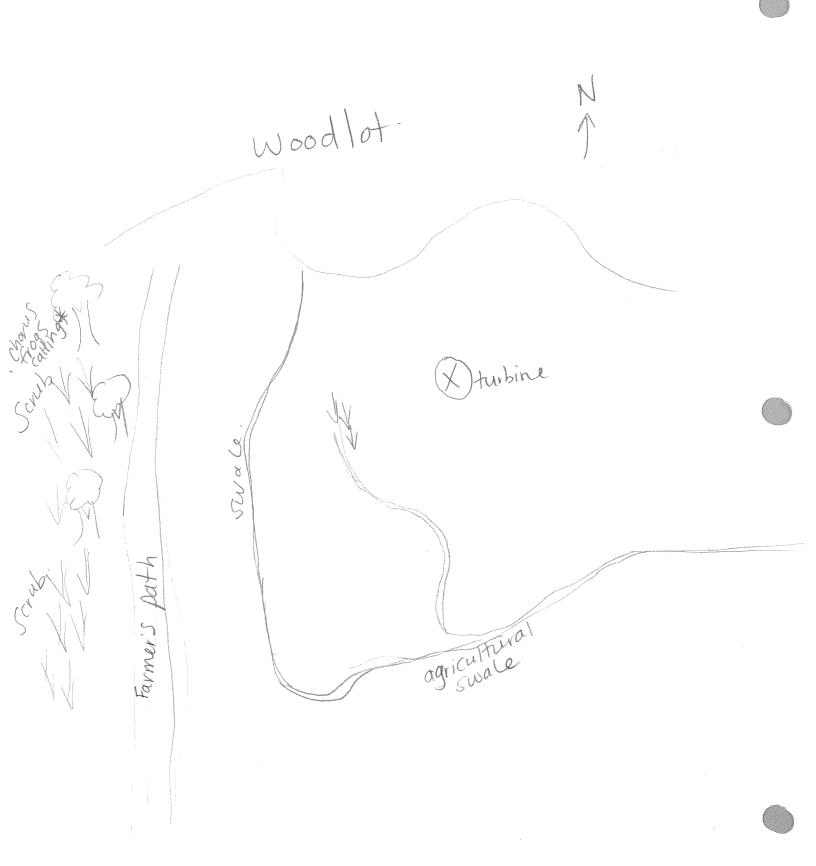
bushlot og field REATOOS-3 -RITTOOS-1 swale 1 R1 HOOS-2 ag. field. ag field Rymer Road



Non REA

Stantec Station # RTTOO6 Project Name Niggara Wind Watercourse Name UNKNOWN Project # 160950625 Photos 24-28 Field Staff H. Clayton, M Date _ April 4 /2012 Time 10:40 aug Weather conditions in previous 24 hrs GPS Coordinates (Zone) 17T E 06230 Datum NA Descriptive Location ROOM DOW to Water Quality - not enough water Dissolved Oxygen (mg/L)____ ____ Conductivity (μS/cm) _____ pН Water Temperature (°C) Air Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width 0.40 (m) Maximum Pool Depth Mean Bankfull Width 0.50 (m) Mean Water Depth (cm) % Riffle % Pool 100 % Run Evidence of eroding banks, Comments on bank stability durant changes tuccous 20 Substrate (% cover) Bedrock Cobble Sand Silt Muck Boulder Gravel Clay___ Mari Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other algal. Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use **Fish Habitat Potential** Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) seaconal -Note any fish observations _____ Waterbody Notes Natural Watercourse ____ Trapezoidal Channel Grassed Swale **Buried Tile** Surficial Drainage (i.e. furrows) ____ Dugout Pond ____ Dominated by Aquatic Veg_ Other Habitat Notes, Incidental Wildlife Observations, etc. Chauc Lyon Wild tukeus, White tail deen

Field Notes Authored by Field Notes QA/QCed by MF.



tile 31





Station # RUTOO +		Project Name Nac	jara Win	<u>a</u>
Watercourse Name uniona	75T	Project #	0269	
Photos	ptos - Field Start L. Clastic Programmer			
Date June 3/12		Time _ 3:30 pm		
Weather conditions in previous	24 hrs <u>101,5</u>	onn	6 1 6 2 1 <b>5</b>	
GPS Coordinates (Zone)	- <b> </b>	$\alpha \mapsto \mathbf{N} + \mathbf{N}$	(1426) DE	
Descriptive Location	KNU NOT	Elcho Coad,	1/300m	MAKNATO
Kric	L Road			
Water Quality	Water			
		Conductivity (μ	S/cm)	
Dissolved Oxygen (mg/L) Water Temperature (°C)		Air Temperature (°C)	<b>25</b>	
Time in situ measurements tak	en			
*		Y		
Watercourse Dimensions & I	worbing od A	Maximum Pool Depth	(C	m)
Mean Watercourse Width	(m)	Mean Water Depth	(c	m)
Mean Bankfull Width	(''') % P	ool%	Run	% Fla
% Riffle Evidence of eroding banks, Co		OO(		
Evidence of eroding banks, Co	Millionia on barik			
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel	Clay	Marl	Detritus
Riparian Zone Riparian Cover (% of watercou	urse shaded, domi	nant vegetation, mature or	eany successio	nai)
Adissont Land Liga		<u> </u>		
Lord Canary	avacs ta	rm ar		
Fish Habitat Potential Critical Habitat (spawning or n Migratory Obstructions (seaso	ursery areas, grou	indwater upweilings)		
_	dry and	alignedight and provide photocomy and provide at the		
Note any fish observations				
Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows	Trapezoidal Chann	nel Grassed Swa	le Bu	ried Tile
Surficial Drainage (i.e. furrows	) Dugout Po	ond Dominated by A	Aquatic Veg	Ury <u></u>
Other Habitat Notes, Inciden	itai Wildlife UDSei	rvations, etc.		
Field Notes Authored by K Class	Field No	otes QA/QCed by		
W:\resource\internal Info and Teams\Aqu			erbody Rapid Assessi	ment Form.doc
W:\resource\internal Info and Teams\Aqu	ISTIC RESOURCES VIOLED SINE	ides de la company de la compa		

RIT007-1 Say beans. ElchoRoad



NON

Station # RILOTO8	Project Name NIAGARA WIND
Watercourse Name <u>0</u> 8 - 1 A  Photos <u>8895 - 965 8899 8900 - 52</u>	Project #_160950269 Field Staff T CHANDLER MELLAH
Date TUNE 8, 20/2	Field Staff T CHANDLER MELLAH Time 3:00 PM
Weather conditions in previous 24 hrs	w cloudy periods 28 N 4765440 Datum
Water Quality  Dissolved Oxygen (mg/L) pH  Water Temperature (°C)  Time in situ measurements taken	Conductivity (μS/cm)Air Temperature (°C)5
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m)% Riffle% Pool Evidence of eroding banks, Comments on bank stal	Maximum Pool Depth(cm) Mean Water Depth(cm)% Run% Fla
Substrate (% cover)BedrockCobbleBoulderGravel	Sand Silt Muck Clay Marl Detritus
In-water Cover  Cover Types Present (circle): Undercat Bank Overhanging Vegetation Woody Debris	s Deep Fool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dominan	t vegetation, mature or early successional)
Adjacent Land Use ARGRICULTURAL FIELD- E	ROPPED
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds	vater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond	
Other Habitat Notes, Incidental Wildlife Observat	ions, etc.
Field Notes Authored by T. C. HANDLER Field Notes C	MOONE NO.



REA

Stantec

Station # RITO DS Watercourse Name DS - I B Photos 8903 - 09 , 8910	Project Name NIAGARA WIND Project # 160950269 Field Staff TCHANDLER MELIAH
Date JUNE 9 2002 Weather conditions in previous 24 hrs Sunna GPS Coordinates (Zone) 171 E 614618 Descriptive Location	Time 3:40
	8.34_ Conductivity (μS/cm)565 Air Temperature (°C)25
Watercourse Dimensions & Morphology Mean Watercourse Width	ol % Run % Flat
Substrate (% cover) BedrockCobble BoulderGravel	Sand Silt too Muck Clay Marl Detritus
( a ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	nks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domina  60% grasses togurhe vesetation  Adjacent Land Use  Agricultural Seld (towest) W  + north	and trees (mature)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Note any fish observations	
	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	itions, etc. Green flogs, aquabe
Field Notes Authored by T.CHANDLER Field Notes	QA/QCed by



# WIND FARM WATERBODY RAPID ASSESSMENT FORM $Non\mathcal{REA}$

Station # RITOOR	Project Name NIAGARA WIND
Watercourse Name 98-2	Project # 160950269
Photos <u>8897 - 98</u>	Field Staff TCHANDLER MELLAH
Date JUNE 8 2012	Time 3:20 PM
Weather conditions in previous 24 hrs>	4502 N 4765222 Datum
GPS Coordinates (Zone) 177 E 6/	4503, N 4765222 Datum
Descriptive Location	
Water Temperature (°C) 19.91 Time in situ measurements taken 3.26	pH7.51_ Conductivity (μS/cm)2459 Air Temperature (°C)25 PM SMALL POND - 1.5 m × 5 m
Watercourse Dimensions & Morphology	SMALL TOND 3
Mean Watercourse Width PONY (m)	Maximum Pool Depth 36 (cm)
Mean Bankfull Width // /A (m)	Mean Water Depth (cm) % Pool % Run% Flat
% Riffle	
Evidence of eroding banks, Comments on ba	ank stability
Substrate (% cover)	Sand / Silt / OU Muck
	Sano
Boulder Gravel	ClayDetritus
La system Coulor	
In-water Cover	out Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other Duckweed
Riparian Zone Riparian Cover (% of watercourse shaded, of the shaded of	dominant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas,	groundwater upwellings)
Migratory Obstructions (seasonal, permane	
Note any fish observations	
Waterbody Notes SMALL PONDER  Natural Watercourse Trapezoidal C  Surficial Drainage (i.e. furrows) Dugo	out Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife (	Observations, etc. <u>LEOPARD &amp; GREEN FROG</u>
	e proming s
Field Notes Authored by T CHANDLER F	Field Notes QA/QCed by

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



REA

Stanted

Station #	Project Name NIAGARA WIND
Watercourse Name 08-3A	Project # 160950269
Photos 8912 25 Date JUNE 8, 2012	Field Staff TOHANDLER & M, ELLAH Time 4:0
Weather conditions in previous 24 hrs Sunny u	Cloudy Perials
GPS Coordinates (Zone) 17 E 614239	N 4765160 Datum
Descriptive Location	N
Water Quality ISOLATED WETLAND	- MUDON AROUND MARGINS
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C) 2 5
Time in situ measurements taken	
Watercourse Dimensions & Morphology	~ 80 × 100 m.
Mean Watercourse Width // /A (m)	Maximum Pool Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth (cm)
% Riffle % Poo	
Evidence of eroding banks, Comments on bank sta	
Substrate (% cover)  Bedrock Cobble	Sand Silt 100 Muck
Bedrock Cobble Gravel	Sand Silt O Muck Clay Marl Detritus
In-water Cover	
	ks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dominar	nt vegetation, mature or early successional)
Adjacent Land Use	
Wooded area (west) Plonghed	agricultural Reld (toeast)
Fish Habitat Potential	- 1
Critical Habitat (spawning or nursery areas, ground	water upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations Nove	
Trote any high observations	
Waterbody Notes Natural Watercourse Trapezoidal Channel	Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	Dry Dominated by Aquatic Veg Dry
	tions, etc. Catails, societarian bullruste
210000	
	h
Field Notes Authored by TICHANDLER Field Notes O	QA/QCed by



REA

Station # RUTOS	Project Name Naga	va W.ND
Watercourse Name 08-36	Project # 1609 50 269	R WELLAH
Photos 8911	Field Staff TCHANDLE Time 4:00	AC, MECHI
Date 18 , 2017	- I I I I I	
Weather conditions in previous 24 hrs Sunn GPS Coordinates (Zone)     E 6144	7 7 N 4765	Datum
ar 0 000ramates (====)		
Descriptive Location		
Water Quality DRY Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/c Air Temperature (°C)	cm)
Watercourse Dimensions & Morphology		
Mean Watercourse Width D 2-1 (m)	Maximum Pool Depth	
Mean Bankfull Width 2 (m)	Mean Water Depth Pool% R	(cm) % Flat
		lug Stable
Evidence of eroding banks, Comments on bank	Stability 1988 of 19	
Cultivate (9/ cover)		
Substrate (% cover)  BedrockCobble	Sand 70	SiltMuck
Boulder Gravel	30 Clay	MarlDetritus
In-water Cover DC (circle): Undercut	Banks Doen Pool Wat	ereress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other	/
Overhanging vegetation - Woody 252115		
Riparian Zone Riparian Cover (% of watercourse shaded, don	ninant vegetation, mature or ea	rly successional)
Adjacent Land Use		1 1 -1
wooded area ( west) plough	ned agricultural fie	W-toeast
Fish Habitat Potential	undurator unwallings)	
Critical Habitat (spawning or nursery areas, gro	undwater upweilings)	
Migratory Obstructions (seasonal, permanent)		
Note any fish observations	. :	
Note any non-observations		
Waterbody Notes	1	<i>,</i>
Natural Watercourse / Trapezoidal Chai	nnel Grassed Śwale_	
Surficial Drainage (i.e. furrows) Dugout	Pond Dominated by Aq	uatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obs	ervations, etc. <u>+eres hia</u>	Nes on day
and channel duy to drain	wetland @ 08-3A.	upstream
The second secon		
Field Notes Authored by Trough ANDLER Field	Notes QA/QCed by	
Field Notes Authored by Field	NOIGS WAY WOOD BY	maken.



WIND FARM WATERBO Stantec	DY RAPID ASSESSMENT FORM  Wetland /
Station #_RITOO8 Watercourse Name08-4 Photos 8926-27 Date June 8, 2012 Weather conditions in previous 24 hrsSunname GPS Coordinates (Zone)17T	7
Water Quality DRY ( recently ) Dissolved Oxygen (mg/L) pH_ Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/cm) Air Temperature (°C)2_5
Watercourse Dimensions & Morphology  Mean Watercourse Width(m)  Mean Bankfull Width(m) % Riffle% Po Evidence of eroding banks, Comments on bank s	Maximum Pool Depth(cm)  Mean Water Depth(cm)  Ool % Bun % Flat
Substrate (% cover) BedrockCobble BoulderGravel In-water Cover production of the content of t	Sand Silt Muck Clay Marl Detritus  unks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated to be set to be a so cultural	Boulder Otherant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	
Indigratory Obstructions (seasonal, permanent)    Own   Worley     Otto any fish observations	
ther Habitat Notes, Incidental Wildlife Observa	I Grassed-Swale Buried Tile nd Dominated by Aquatic Veg Dry ations, etc # Angi Havium



Stantec				1 Fin
Station # RITO 10 + 3	> 7	Project Name Niac	gara Win	9
Watercourse Name		Project #	0269	
Photos See (3)		Field Staff KE V.		
note 11100 13 2010	n ₀ ,	Time <u>4/30⊋</u> ∧		
Weather conditions in previous 24 hr	s MNN	+ SUVO		
GPS Coordinates (Zone) 17.T	E 620	150 N 475	<u>9579</u> Da	tum
Descriptive Location	6000	donad 4a	<b>***</b>	
Descriptive coodion				
Water Quality		Conductivity (µ	S/cm)	
Dissolved Oxygen (mg/L)	_ pH	Air Temperature (°C)		
Water Temperature (°C)		Air remperature (*C)_		
Time in situ measurements taken			- A	
Watercourse Dimensions & Morph				
Watercourse Dimensions a morpi	(m)	Maximum Pool Depth_	(cr	n)
Mean Watercourse Width	_(w). _(…)	Mean Water Depth	(cr	
Mean Bankfull Width	_() % Pod	· · · · · · · · · · · · · · · · · · ·	Run	% Flat
Evidence of eroding banks, Comme				
Evidence of eroding banks, comme				
Substrate (% cover)	Cabble	Sand	Silt	Muck
Bedrock	_Cobble	Clay	Marl	Detritus
Boulder	Gravel			•
Overhanging Vegetation Woody  Riparian Zone  Riparian Cover (% of watercourse s		ant vegetation, mature or	early succession	nal)
Adjacent Land Use				
Fish Habitat Potential		·		
Critical Habitat (spawning or nursen	y areas, groun	dwater upwellings)		
/				
Migratory Obstructions (seasonal, p	ermanent)			
Note any fish observations				
/				
Waterbody Notes				er al Tilla
	zoidal Channe	Grassed Swa	ile Bur	ried Tile
Natural Watercourse Trape Surficial Drainage (i.e. furrows)	Dugout Por	nd Dominated by	Aquatic Veg	_ Dry
Other Habitat Notes, Incidental W	ildlife Observ	ations, etc		
no unterreative	>			
- & GO dro Lan	o pond	<u> </u>		
		s QA/QCed by fre Mass		
Field Notes Authored by	Field Note	s QA/QCed by		



Station # RUTO 12 -		Project Name	liagara Wi	nd 13
Watercourse Name		Project #_//oC	1950269	
Photos See log		Field Staff	7-3 6	
Date VIAU 5 2012		Time 9:07-	Sandan A. A. A.	
Weather conditions in previous 2	!4 hrs <u>/ △ △ △</u>	)   SSS N	11754233	Datum
GPS Coordinates (Zone)	E 62	1 2 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	WINE WASTER LY.	and ror etchy len
I JEST IDRAG COOKIO!	100 m m	21 1 1 Court 2 Court		
work of Mayby 3 - m field	\	, X	\ 1	
Water Quality		1 too le	He wat	er (nois
Dissolved Oxygen (mg/L)	pH_	Conductiv	vity (μS/cm)	
Water Temperature (°C)		Air Temperature (	°C)	
Time in situ measurements take	n			
Watercourse Dimensions & Mo	orpriology (m)	Maximum Pool De	oth /	(cm)
Mean Watercourse Width	(w). (…)	Mean Water Dept		(cm)
Mean Bankfull Width	% P		% Run	% Flat
Evidence of eroding banks, Com			$\overline{/}$	
EAIGBLICA OF GLOCIFIED PRINCE, CON-				
Substrate (% cover)	Orbble	Sand	Silt	Muck
Bedrock	Cobble Gravel	Clay	Marl	Detritus
Boulder	Glavel	O.u.y	•	•
Overhanging Vegetation We Riparian Zone Riparian Cover (% of watercours	re shaded domil		re or early success	ional)
Adjacent Land Use				
-43 37				
Fish Habitat Potential				
Critical Habitat (spawning or nur	sery areas, grou	ndwater upwellings)	•	
Migratory Obstructions (seasons	al, permanent)	•		
Note any fish observations		· · · · · · · · · · · · · · · · · · ·		
more		,		
Waterbody Notes	apezoidal Chann	el Grassed	Swale B	uried Tile
Natural Watercourse Transcription   Surficial Drainage (i.e. furrows)_	Dugout Pr	· ~ ·	d by Aquatic Veg	Dry
Sunicial Drainage (i.e. lullows)_	Dugout.		•	
Other Habitat Notes, Incidenta	ai Wildlife Obser	rvations, etc.	agreatic ve	<u> </u>
		Λ .Α		
Field Notes Authored by		(1 1/1 .		
FIEID MOSES MUNICIPOLDY	Field No	ites QA/QCed by Jul Miles	Andrew Control of the	
W-tracource\Internal Info and Teams\Aquati	Field No	tes QA/QCed by http://www.ets\Stantec\Form 02 Wind Fai	m Waterbody Rapid Asses	ssment Form.doc



NOREA

Stantec			RE
Station # RITOI3 - Watercourse Name	Time 14 20 1405 N 4 N of Hwy 3 - Wainflet	liagara co Impfon. H	and Z
Water Quality - *Agricultur a	NOWALK		
Dissolved Oxygen (mg/L)pt	H Conductivit	y (μS/cm)	
Water Temperature (°C) Time in situ measurements taken	H Conductivit Air Temperature (°C	S)	
Watercourse Dimensions & Morphology			
Mean Watercourse Width (m)	Maximum Pool Dept	th	_(cm)
wear bankfull width (m)	Mean Water Depth_		(cm)
% Riffle% Evidence of eroding banks, Comments on bank		% Run	% Fla
Evidence of eroding banks, comments on bank	k stability		
Substrate (% cover)BedrockCobbleBoulderGravel	Sand Clay		Muck Detritus
In-water Cover Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dom	Boulder Other		
Adjacent Land Ose			
Fish Habitat Potential Critical Habitat (spawning or nursery areas, growning or nursery areas, grownigh digratory Obstructions (seasonal, permanent) Note any fish observations			
Vaterbody Notes Iatural Watercourse Trapezoidal Chanr Burficial Drainage (i.e. furrows) Dugout P Other Habitat Notes, Incidental Wildlife Obse	ond Dominated by	Aquatic Veg	Dry

Field Notes Authored by K. Cay to

Field Notes QA/QCed by M. Faic A



REA

Stamec	Marie La Direction
tation #	Project Name Niagara Wind
Vatercourse Name why hair	Project # 605000
hotos	Field Staff A.C. M.F.
ata Any 4 1 2.	Time 14:30
leather conditions in previous 24 hrs	(2) 229 N 4755999 Datum Nad
PS Coordinates (Zone)	palati palatin inter
Descriptive Location approx 600	n North of Hory S. J. Arm Was
0+Dunville-1	Nametrica
Vater Quality	pH 8.72. Conductivity (μS/cm) 843
vissolved Oxygen (mg/L) Had mg/L	Air Temperature (°C) 2°C
Vater Temperature (°C)	, ui
ime ili situ measuremente taken.	
Vatercourse Dimensions & Morphology	Maximum Pool Depth ~ 0.75 (cm)
Mean Watercourse Width 6 (m)	( D 1
Mean Dankium Wider	Mean Water Depth
% Riffle	
Evidence of eroding banks, Comments on I	's- very Hable
banks are two stringing	
Substrate (% cover)	le Sand <u>SO</u> Silt <u>Muck</u>
BedrockCobbl	leOaridN
BoulderGrave	jiOid/
5% a grasses.	, dominant vegetation, mature or early successional)
Adjacent Land Use	
Fish Habitat Potential Critical Habitat (spawning or nursery areas	s, groundwater upwellings)
Con Inina a Dunit	AU TOXOGOUS
the descriptions (coasonal nerman	1 <del>2</del> (11)
Note any fish observations	
/	
Waterbody Notes	Channel Grassed Swale Buried Tile_
Natural Watercourse Trapezoidal Surficial Drainage (i.e. furrows) Du	Day
Other Habitat Notes, Incidental Wildlife	Observations, etc. trog jumping in ic
\$ 1	11-11-
Field Notes Authored by K. Clayton	Field Notes QA/QCed by

K11T013-2 as reld Scrub P. Pour our 1900 OER WATER BODY OSTANTAL SWOLDER PER 09:5210 va. Eng. greenhouses



# WIND FARM WATERBODY RAPID ASSESSMENT FORM R 11 TO13 -3

Sub-lice C		( )(0	1
Station # <b>RNTO 13-3</b>	Project Name Nid	Shara Wir	
Watercourse Name	Project # 1609	SURIO	
Photos	Field Staff 126 +	V)	-
Date June 13 20/2	Time 10: 54 Per	¥ /	
Weather conditions in previous 24 hrs rd r	196 N 4	755 274 Da	tum
and Orandinaton (7ana)			300 m south
Descriptive Location Approved 700 m W			
Water Quality Dissolved Oxygen (mg/L) 9.04 pH_ Water Temperature (°C) 18.59 Time in situ measurements taken 10.35	Conductivity ( Air Temperature (°C)	(μS/cm) <u>5 7 3</u>	
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) % Riffle (m)	Maximum Pool Depth Mean Water Depth		•
Evidence of eroding banks, Comments on bank s			
Stop stable, veg	-		
Substrate (% cover)  Redrock Cobble	Sand	Silt	Muck
Deditor	Clay	Marl	Detritus
Boulder Gravel	-		Jemno Mino-
Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature o	r early succession	al)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ndwater upweilings)		
Migratory Obstructions (seasonal, permanent)  Note any fish observations	www most		•
2006	,		
Waterbody Notes Natural Watercourse Trapezoidal Chann Surficial Drainage (i.e. furrows) Dugout Po	el Grassed Sw ond Dominated by		ed Tile Dry
= Evaporet covered in tem	vations, etc.	oved 3 f	ons Cu
W-\resource\Internal Info and Teams\Aquatic Resources\Field Sher	ets\Stantec\Form 02 Wind Farm W	aterbody Rapid Assessm	ent Form.doc
Wiresource\internal Info and Teams\Aquatic Resources\rield Stield	and to the second of the secon		



RM P 11TO 12

Statitet				•
Station # RITO 3 - 3	9x4	Project Name	Niagaral	vind
Watercourse Name Whom			0950269	
Photos An Incom		Field Staff K		
Date June 3 2012		Time <u>n : 2</u>	0 '	
Weather conditions in previous 24	hrs Com			
GPS Coordinates (Zone)			N 475556	
Descriptive Location   Huu	3, 100 m We	stor Townsm/	Dunnella Wantlet	the soproriety
200 m Not highway 3	<i></i>			
Water Quality Dissolved Oxygen (mg/L)	(ittle pH_		n SOMAP ectivity (μS/cm) e (°C)	<u>le</u>
Water Temperature (°C)	<del></del> ><	_ All remperatur	G ( O)	
Time in situ measurements taken_	- Carlander			
Watercourse Dimensions & Mor Mean Watercourse Width Mean Bankfull Width	(w). (w)	Maximum Pool Mean Water De	epth	(cm)
% Riffle	100 % P	<u> </u>	% Run	% Flat
Evidence of eroding banks, Comm	nents on bank s			
Substrate (% cover)				
Bedrock	Cobble	<u>Q</u> Sand	Silt	Muck
Boulder	Gravel	Clay	<u>Marl</u>	Detritus
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential	shaded, domin	Boulder (	Other	Aquatic Veg
Critical Habitat (spawning or nurse	ry areas, groun	uwater upweilings	, ·	
Migratory Obstructions (seasonal, slas Ondly d	permanent)			
Note any fish observations /	**************************************	,		
Waterbody Notes				
	ezoidal Channe	I Grass	ed Swale_\/	Buried Tile
Surficial Drainage (i.e. furrows)			ed by Aquatic Veg_	Dry
Other Habitat Notes, Incidental V	-		da vatic.	
minimal Junes	177 V 1 77	A A A A A A A A A A A A A A A A A A A	7 7/	<u> </u>
	relaply	YEAR D	- George	La Para
-not directly conne	repably	result by	dyden F	fond fair



Startice  Station # DITOTY RITTORS Project Name   Congress   Name   Project Name   Project Name   Project Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name	WIND FARM W	ATERBODY RAI	PID ASSESSME	NT FORM	RZ
Photos Date Art 5/2 Date Art 5/2  Field Staff 6/24/2  Time  Weather conditions in previous 24 hrs GPS Coordinates (Zone) Descriptive Location Descriptive Lo	Stantec	الله الله الله الله الله الله الله الله	RIITO43		
GPS Coordinates (Zone)  Descriptive Location  Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Mean Watercourse Dimensions & Morphology  Mean Watercourse Width  Mean Water Depth  (cm)  Mean Water Depth  (cm)  Mean Water Depth  (cm)  % Riffle  % Pool  Evidence of eroding banks, Comments on bank stability  Bedrock  Boulder  Gravel  Gravel  Cobble  Sand  Gravel  Substrate (% cover)  Bedrock  Boulder  Gravel  Cover Types Present (circle):  Undercut Banks  Deep Pool  Watercress  Aquatic Veg  Riparian Zone  Riparian Zone  Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Migratory Obstructions (seasonal) permanent)  Says Landaurus  Migratory Obstructions (seasonal) permanent)  Says Landaurus  N 17 86666  Datum   Location	Photos 100-106  Date April 5/12	Field Time	Staff b. clayter	H' Faicla	<u>d</u>
Dissolved Oxygen (mg/L)	GPS Coordinates (Zone)	E 0624423	N 474		- Company of the Comp
Mean Watercourse Width	Dissolved Oxygen (mg/L) 11.21 A Water Temperature (°C) (6.27	~ All 16	_ Conductivity (µS mperature (°C) _ ்	/cm)_263и	s/cm
Substrate (% cover)  Bedrock Cobble Sand 40 Silt 10 Muck Boulder Gravel 50 Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal) permanent)  Says Land Aurous  Says Land Aurous	Mean Watercourse Width  Mean Bankfull Width  Riffle  Evidence of eroding banks. Comment	(m) Maxim (m) Mean% Pool ts on bank stability	Water Depth % F	(cm) (cm) Run	% Flat
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal) permanent)  Says Landaurus  (Says Landaurus)	Substrate (% cover) Bedrock	cobble	Sand 40	silt_10	Muck
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal) permanent)  Says land aures	In-water Cover Cover Types Present (circle):	Jndercut Banks	Deep Pool Wat	·	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal) permanent)  Says landaunes	Riparian Cover (% of watercourse sha	ided, dominant veget Hails, early	ation, mature or ear	rly successional)	
Critical Habitat (spawning or nursery areas, groundwater upwellings)  Spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal) permanent)  (says land aunus)	Adjacent Land Use	- an Aeld	,		
Migratory Obstructions (seasonal) permanent)  (says landaunes)	Critical Habitat (spawning or nursery a	reas, groundwater up	owellings)		
	Migratory Obstructions (seasonal) perm	manent)	7 7		
Waterbody Notes					

Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Other Habitat Notes, Incidental Wildlife Observations, etc.

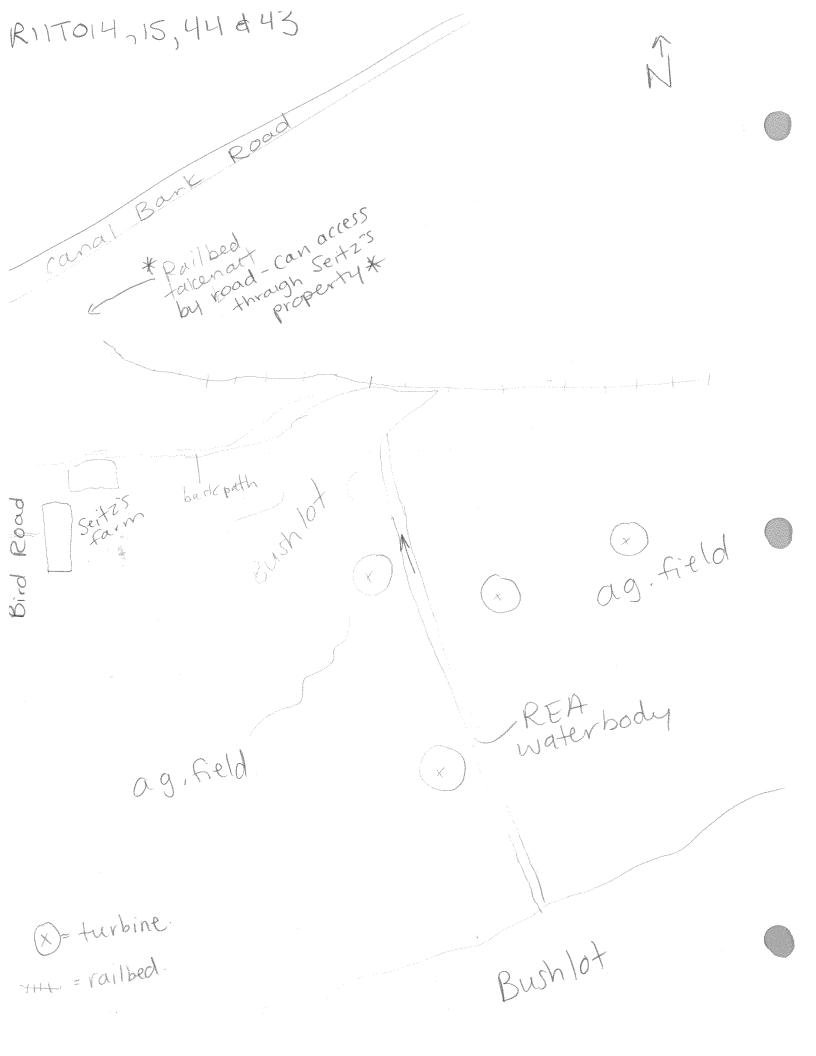
Field Notes Authored by K. Claudan

Natural Watercourse ____ Trapezoidal Channel ____

Field Notes QA/QCed by A. Faie la

Grassed Swale

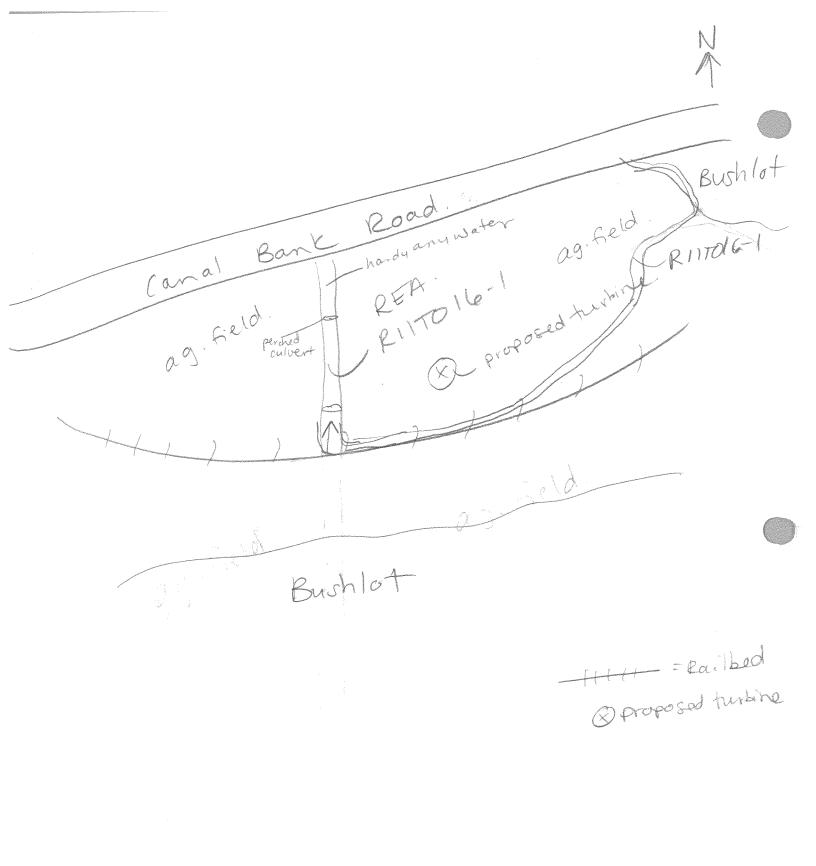
Buried Tile





REA

Station # RITO 1(0 -)	Project Name Aller
Watercourse Name Linkhaux	Project Name Niggara Wind
Photos 83-95	Project # 160950 a 69
Date April 19/20	Field Staff LC & MF
M/	Time 12:30
	Johns
Descriptive Location South of	3656 N 4749832 Datum Nad8
Of Big Road	Canal Bank Road 2 Km Part
Water Quality	•
	8 30 0 1 11 11 11 11 11 11
Water Temperature (°C) 15.80	$8.75$ Conductivity ( $\mu$ S/cm) $462$
	Air Temperature (°C) 12°C
Watercourse Dimensions & Morphology	
Mean Watercourse Width (m)	Maximum Deat Death
Mean Bankfull Width (m)	Maximum Pool Depth(cm)
% Riffle% P	Mean Water Depth(cm)
Evidence of eroding banks, Comments on banks	70 1 Idl
	stability unstable banks,
Substrate (% cover)	very turbid
BedrockCobble	
Boulder Gravel	Sand Silt 60 Muck
	<u> </u>
In-water Cover	water consideration and the second se
Cover Types Present (circle): Undercut Ba	anks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Rinarian Cover (% of watercourse sheded demain	
Riparian Cover (% of watercourse shaded, domin	ant vegetation, mature or early successional)
Adjacent Land Use	Creatif
Cold	
ay Atio.	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, groun	advanta a company and a compan
Control of the service of the servic	dwater upweilings)
Migratory Obstructions (seasonal, permanent)	4, toraging
the state of the s	10000
Note any fish observations	manent
Waterbody Notes	
Natural Watercourse Trapezoidal Channe	0
Surficial Drainage (i.e. furroug)	Daniod Inc
Surficial Drainage (i.e. furrows) Dugout Por	nd Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observ	otione etc
	ations, etc.
ield Notes Authored by Field Notes	OA/OCed by MF





Stantec	
Station # RIITO 17 & RIITO	47 Project Name Niagara Wind
Watercourse Name Unknown	Project # 1609 \$0 69 3
Photos 69-89	Field Staff K.C. M. F.
Date Proc 4 112	Time 16:30
Weather conditions in previous 24 hrs	·C. Clardy
GPS Coordinates (Zone) E O	022792 N 4748529 Datum NAD8
Descriptive Location 1 Km Fast o	if Bird Rd & Ikm South of Cana
Bank Ro	ad
Motor Quality	
Water Quality  Discolard Owigen (mg/l) 14 24mg/L	pH 9.03 Conductivity (μS/cm) <u>510 μS / CVY</u>
Dissolved Oxygen (ing/L)	pH 9.03 Conductivity (μS/cm) 510 μS/cm
Time in situ measurements taken	1:00
Watercourse Dimensions & Morphology	Maximum Pool Depth O. (cm)
Mean Watercourse Width (m)	Mean Water Depth 0.50 (cm)
Mean Bankfull Width (m)	% Pool% Flat
% Riffle	
Evidence of eroding banks, Comments on b	ank stability Hable banks, some erosion for
agacent lan	
Substrate (% cover)	Sand 50 Silt 0 Muck
BedrockCobble	Sand
BoulderGravel	Clay Marl Detritus
Riparian Zone Riparian Cover (% of watercourse shaded, 6	dominant vegetation, mature or early successional)
· farm lan	COL.
Fish Habitat Potential Critical Habitat (spawning or nursery areas,	ery tarager
Migratory Obstructions (seasonal, permane	int)
Note any fish observations	-/
Waterbody Notes Natural Watercourse Trapezoidal C Surficial Drainage (i.e. furrows) Dug	Channel Grassed Swale Buried Tile out Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife	Observations, etc. <u>frogs-leopard</u> chons
	1 2
Field Notes Authored by K. Clayton	Field Notes QA/QCed by M. Fairla.

NIIIUIT & 4+ woodlot distribed area planted agica sold ag held lots of Jegetation pool/standing ROMA Bird Road anoan BAANAM



HEAD KE

#### Stantec

Station # RITOIS	Project Name Niagara Wind
Watercourse Name 18~1	Project # 18.0950 769  Field Staff T Class address M Ellah
Photos 8837-34	rielu Stati
	Time 4:25
Weather conditions in previous 24 hrs hounders	howed inaferroon of Lerwise Sunny
GPS Coordinates (Zone)	NA/ROOD Datam
Descriptive Location At proposed access Road	( VACSONC
Descriptive Location	
Water Quality DRY	
Water Quanty	Conductivity (µS/cm)
Dioce ( ) ,	Air Temperature (°C) 20
Water Temperature (°C)	/iii romporatoro ( o)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	Maximum Pool Depth (cm)
Mean Watercourse Width DRY (m)	(VICENTIAL CO. C.
Mean Bankfull Width(m)	Mean Water Depth (cm) % Flat
% Riffle% Poo	70
Evidence of eroding banks, Comments on bank sta	ability None
Substrate (% cover)	Sand 100 Silt Muck
BedrockCobble	Janu
BoulderGravel	Clay Marl Detritus
084	
In-water Cover PRY	nks Deep Pool Watercress Aquatic Veg
Cover Types Present (circle): Undercut Bar	into Egypt est
Overhanging Vegetation Woody Debris	Boulder Onio
Riparian Zone	and the motorion motors or early successional)
Riparian Cover (% of watercourse shaded, domina	ant vegetation, mature or early successionary
30% gras/shinb	
Adjacent Land Use	
Agricaltural field	
Fish Habitat Potential	dwater unwellings)
Critical Habitat (spawning or nursery areas, groun	dwater upweimige)
Migratory Obstructions (seasonal, permanent)	
1 ALL /W + (AV	
Note any fish observations	
Nove	,
Waterbody Notes	
Transported Channe	Grassed Swale Buried Tile Dry
Surficial Drainage (i.e. furrows) Dugout Po	nd Dominated by Aquatic Veg Dry_X
Other Habitat Notes, Incidental Wildlife Observ	
Other Habitat Notes, incidental Wildlife Observ	of the select mosent but not commo
with well-defined bed & banks;	The state of the s
	10
Field Notes Authored by TIC handler Field Note	es QA/QCed by





#### **Stantec**

Station #_RITO [8	Project Name: Nagara Wind
Watercourse Name	Project #: 1609 So 269  Field Staff T. Chander M. Ellah
Photos <u>8839 - 44</u>	I ICIG CIGIT
Date <u>June 7,2017</u>	Time
	2 d N 4766486 Datum
GPS Coordinates (Zone) E 629 8	34 N 4766486 Datum
Descriptive Location	
Water Quality DRY	
Dissolved Oxygen (mg/L) pH	N / A Conductivity (µS/cm) N / A
Water Temperature (°C)	Air Temperature (°C) <u>20</u>
Time in situ measurements taken	
Watercourse Dimensions & Morphology Green	ular wetarea 15×30m
Moan Watercourse Width ALA (m)	Maximum Pool Depth (cm)
Mean Watercourse Width // (m) Mean Bankfull Width (m)	Mean Water Depth (cm)
% Riffle% Po	ol% Run% Flat
Evidence of eroding banks, Comments on bank st	ability Stable
Cubatrata (9/ cover)	
Substrate (% cover)  BedrockCobble	Sand / 90 Silt Muck
Boulder Gravel	Clay Marl Detritus
Boulderaraver	
In-water Cover DRY	A. alfallan
Cover Types Present (circle): Undercut Ba	nks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
/	<i>"</i>
Riparian Zone Riparian Cover (% of watercourse shaded, dominated)	ant vegetation, mature or early successional)
Bull rush - No water	ant vogotation, materio of carry control
Adjacent Land Use	
Cocnfield (planted)	
- Wilkerick Abronia	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, groun	dwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations NONE	
-	
- Largerian L	ith veg - not playsher not dug,  Buried Tile
Waterbody Notes	Crossed Swale Buried Tile
Natural Watercourse Trapezoidal Channe	el Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry_/_
	An An
Other Habitat Notes, Incidental Wildlife Observ	vations, etc. leopard frog.
Office Habitat Notes, moracinal manie essential	, ,
and the second s	11 N
Field Notes Authored by T. Chandler Field Note	es QA/QCed by



NOTA

Station # RITO 18	Project Name NIAGARA WIND
Watercourse Name	Project # 160950269
Photos <u>8845-46</u>	Field Staff Tichandler M Ellah
Date June 7, 2012	Time <u>4:55</u>
Weather conditions in previous 24 hrs	thunder showers /syn
GPS Coordinates (Zone) 17 E 6298	37 N 4766384 Datum
Descriptive Location Near RR Tracks	
Water Quality DRY	
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C) 22
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width DR7 (m)	Maximum Pool Depth (cm)
Mean Bankfull Width (m)	Mean Water Depth // (cm)
% Riffle% Poo	ol% Run% Flat
% Riffle % Poor Evidence of eroding banks, Comments on bank sta	ability minor rill feature
(ploughed over)	
(	
Substrate (% cover)	0 0 m d / / 50 10 11 1 1 1 1 1
Bedrock Cobble	Sand OO Silt Muck Clay Marl Detritus
BoulderGravel	Clay Marl Detritus
in-water Cover DRY	
Cover Types Present (circle): Undercut Ban	ks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominal	nt vegetation, mature or early successional)
O'lo- Counceld	
Adjacent Land Use	
Cornfield	
Pieto Heldres Descript	
Fish Habitat Potential	-1
Critical Habitat (spawning or nursery areas, ground	water upweilings)
Migratory Obstructions (seasonal, permanent)	
<del>//</del>	
Waterbody Notes DRY DRAINAGE F	EARLE WHIED
Natural Watercourse Trapezoidal Channel	Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	tions, etc.
<del></del>	į.
Field Notes Authored by T. Chaw lov Field Notes	QA/QCed by



Watercourse Name Photos		ct name in his a da	ra Wind	
<del></del>	Proje	ct # 1/00950		······
	Field	Staff K F TIK		
Date June 13 2012	Time	10:50 An		
Weather conditions in previous 24	hrs <u>ndub</u>			
GPS Coordinates (Zone)	T.E 620311	N 4791	5174 Datum	
Descriptive Location Supply Hu	tchings w food, approx	3-0×17 600- Noth	iot harmy 3	
			* /	
Water Quality	/		,	
Dissolved Oxygen (mg/L)	pH/\(\lambda\)	² _ Conductivity (μS/c emperature (°C)	m) <u>15みの</u>	
Water Temperature (°C)	Air Te	emperature (°C) <u>S</u>	5	
Time in situ measurements taken_	10:55			
Watercourse Dimensions & Morr	phology			
Mean Watercourse Width		num Pool Depth	(cm)	
Mean Bankfull Width		Water Depth	<u>니 (cm)</u>	
	7.00 % Pool	% Ru	າກ	% Flat
Evidence of eroding banks, Commo	ents on bank stability	•		
style & ver				
Substrate (% cover)				
	Cobble 29	Sand	Silt	Muck
Boulder	Gravel 80	_Clay	Marl	Detritus
In-water Cover Cover Types Present (circle): Overhanging Vegetation Wood	Undercut Banks ly Debris Bould		rcress Aqua	tic Veg
Riparian Zone Riparian Cover (% of watercourse s	shaded, dominant vege	tation, mature or early	/ successional)	
Adjacent Land Use				
AUJAUGIII LAIIU USB				
Adjacent Land Use				
AS- 1011				
Fish Habitat Potential		- Valinga\		www.damana.damana.da
AS- 1011	y areas, groundwater u	pwellings)		november and design an
Fish Habitat Potential Critical Habitat (spawning or nurser Migratory Obstructions (seasonal, p		pwellings)		
Fish Habitat Potential Critical Habitat (spawning or nurser Migratory Obstructions (seasonal, p	ermanent)	pwellings)		
Fish Habitat Potential Critical Habitat (spawning or nurser Migratory Obstructions (seasonal, p	ermanent)	pwellings)	ele back	
Fish Habitat Potential Critical Habitat (spawning or nurser Migratory Obstructions (seasonal, p	ermanent)	pwellings)	cleback	
Fish Habitat Potential Critical Habitat (spawning or nurser Migratory Obstructions (seasonal, p Note any fish observations Waterbody Notes	ermanent)	anok sta		
Fish Habitat Potential Critical Habitat (spawning or nurser) Migratory Obstructions (seasonal, p Note any fish observations  Waterbody Notes Natural Watercourse Trape:	ermanent)	Grassed Swale		
Fish Habitat Potential Critical Habitat (spawning or nurser Migratory Obstructions (seasonal, p Note any fish observations Waterbody Notes	ermanent)	anok sta		=
Fish Habitat Potential Critical Habitat (spawning or nurser) Migratory Obstructions (seasonal, p Note any fish observations  Waterbody Notes Natural Watercourse Trape:	zoidal Channel	Grassed Swale_ Dominated by Aquat		
Fish Habitat Potential Critical Habitat (spawning or nurser Migratory Obstructions (seasonal, p Note any fish observations  Waterbody Notes Natural Watercourse Trape: Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidental W	zoidal Channel	Grassed Swale_ Dominated by Aquat		
Fish Habitat Potential Critical Habitat (spawning or nurser Migratory Obstructions (seasonal, p Note any fish observations  Waterbody Notes Natural Watercourse Trape: Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidental W	zoidal Channel	Grassed Swale_ Dominated by Aquat		





Station # RITORO-1		Project	Namet	Miaga	ra W	<u>nd</u>
Watercourse Name unknow		Project	#_1/20	1950	269	
Photos 735-740		Field St	aff <u>V                                   </u>	laute	n. H.	Faiella.
note become the		Time_	0:01		· ·	
Weather conditions in previous	24 hrs	Fod, no.	-, hum	nid		
		and the same of th	1.0	the state of the state of	143	<u>Datum NaQ</u>
GPS Coordinates (Zone)  Descriptive Location  OA	fofin	man R	and	(Ac	450	roperty)
600 m no	yth of	Cond	S.C.	K R	oad .	· · · · · · · · · · · · · · · · · · ·
Water Quality — no w	sater					
Dissolved Oxygen (mg/L)	pH		Conduct	ivity (μS/c	m)	
Water Temperature (°C)		Air Tem	perature	(°C) <u> </u>		
Time in situ measurements take	an					
Watercourse Dimensions & N	Morphology		1/2			()
Mean Watercourse Width	/m)	Maximu				(cm)
Mean Bankfull Width	(m) [.]	mean v	/-	th		(cm) % Fid
% Riffle	%	P001		% R	un	
Evidence of eroding banks, Cor	mments on bank	stability	e 4546	* 1		
	stable	- 00	t tutt	<u> </u>		
Substrate (% cover)	Cobble		Sand	50	Silt	Muck
Bedrock	Gravel		Clay		Marl	Detritus
Boulder	Glaver	<u> </u>		•		· _<
in-water Cover						
Cover Types Present (circle):	Undercut l	Banks	Deep Poo	ol Wate	ercress	Aquatic Veg
Overhanging Vegetation W	Voody Debris	Boulde	r 01	ther		And the second s
Cvomanging regeneration						
Riparian Zone			ntion mot	uro or oar	ly europe	ional)
Riparian Cover (% of watercoul	rse shaded, dom	ıınant vegeu	auon, mat	UIO UI GAI	y Success	ional)
	IND OF GH	TEX 13 GAT ) N	*V 100 3 1 1		5.75	
Adjacent Land Use						
+a.m.i.g						
Fish Habitat Potential	recent areas are	undwater ur	wellings)	4		
Critical Habitat (spawning or nu	arsery areas, gro	didwater up	, wogu,			
Migratory Obstructions (season	nal nermanent)					
Migratory Obstructions (season	vater					*
Note any fish observations						
Note any list observations						
Waterbody Notes		,				
11 / 114/	ranezoidal Chan	nnel 🗸	Grasse	d Swale_		Buried Tile
Surficial Drainage (i.e. furrows)	Dugout f	Pond	Dominate	ed by Aqu	atic Veg_	<u> </u>
Other Habitat Notes, Incident	tal Wildlife Obse	ervations, e	tc	mant/fin		,
Onidi Hantet Hotos, Holden						
Field Notes Authored by K. Cau-	Field N	Votes QA/QCed t	y <u>////</u> /			

as field. as field proposed ad dydniel Roga nmax

NA

TIESA



S. Andrews	14000	
		procession of the second
		ULA
		and the second

Water Quality Dissolved Oxygen (mg/L) Dissolved Oxygen (mg/L) Water Temperature (°C) Weather conditions & Morphology Mean Watercourse Width Mean Bankfull Width Mean Bankfull Width Mean Bankfull Width Mean Water Depth Substrate (% cover) Bedrock Boulder Gravel Cover Types Present (circle): Overhanging Vegetation Woody Debris Boulder Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Waterbody Notes Natural Watercourse Natural Watercourse Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dominated	Station # RIII 0 09-	and the same of th	Project Name _	Niaga	ra Win	d
Date Weather conditions in previous 24 hrs GPS Coordinates (Zone)  Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Mater Temperature (°C) Mater Temperature (°C) Mater Temperature (°C) Mean Bankfull Width Mean Bankfull Width Mean Bankfull Width Mean Water Depth Com Water Cover Evidence of eroding banks, Comments on bank stability Dissolved Oxygen (mg/L) Substrate (% cover) Bedrock Boulder Gravel Clay Marl Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparlan Zone Riparlan Zone Riparlan Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent) Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.			Project #//	0950	269	
Date Meather conditions in previous 24 hrs  GPS Coordinates (Zone)	Photos See alasta los		Field Staff	Clauten	M. Fail	la
Obscriptive Location Descriptive Location Description Descripti				35 PM		
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Water Depth (cm) Mean Water Depth (cm) Mean Water Depth (cm) Water Water Cover Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Mari Detritus In-water Cover Riparian Zone Riparian Zone Riparian Zone Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Weather conditions in previous	24 hrs <u>Rau</u>	1. hot ethun	10.		
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) Mean Water Depth (cm)  % Riffle % Pool % Run % Fla Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Boulder Gravel Clay Marl Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overfianging Vegetation Woody Debris Boulder Cither Riparlan Zone Riparlan Zone Riparlan Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use  Flsh Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent) Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.					<u>⁄₀S Da</u>	itum NIAD8
Water Quality Dissolved Oxygen (mg/L) Dissolved Oxygen (mg/L) Water Temperature (°C) Dissolved Oxygen (mg/L) Water Dis		meart o-	P Buckott A	Codd .	00 NON-	public
Dissolved Oxygen (mg/L)	Roce			,		
Dissolved Oxygen (mg/L)	Water Quality	_				
Water Temperature (°C)	-	37 pH	7.59 Conduction	ctivity (uS/c	m) 248	
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Maximum Pool Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm)  % Riffle % Pool % Run % Fla  Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.		.35	Air Temperature	• (°C) \ \alpha =	70/	
Mean Watercourse Width	• • • • • • • • • • • • • • • • • • • •	en <u> </u>	<u> </u>	- ( )		
Mean Watercourse Width	Watercourse Dimensions & M	<b>J</b> ombology				
Mean Bankfull Wildth (m) Mean Water Depth (cm) % Riffle % Pool % Run % Fla  Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Mari Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.			Maximum Pool	Denth (	50 lem	<b>.</b> )
% Riffle  % Pool  % Run  % Fla  Evidence of eroding banks, Comments on bank stability  Substrate (% cover)  Bedrock  Cobble  Sand  Silt  Muck Boulder  Gravel  Clay  Marl  Detritus  In-water Cover  Cover Types Present (circle):  Undercut Banks  Deep Pool  Watercress  Aquatic Veg Overfranging Vegetation  Woody Debris  Boulder  Other  Riparian Zone  Riparian Zone  Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Trapezoidal Channel  Grassed Swale  Buried Tile  Surficial Drainage (i.e. furrows)  Dugout Pond  Dominated by Aquatic Veg  Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.					- Con-	
Substrate (% cover) Bedrock Boulder Gravel Substrate (% cover) Bedrock Boulder Gravel Solution Solutio						
Substrate (% cover) Bedrock Goavel Gravel Gr						
Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Mari Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.			- Lucianiero -		Secular	
Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Substrate (% cover)					
Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.		Cobble	Sand	40	Silt /	Muck
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.				3.34		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc	Riparian Zone Riparian Cover (% of watercour	rse shaded, domin	ant vegetation, ma	ture or early	successiona	ai)
Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile  Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Adjacent Land Use	· ·				
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc	Critical Habitat (spawning or nul	rsery areas, groun	dwater upwellings)			
Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Migratory Obstructions (seasons	al. permanent)		•		
Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Note any fish observations					
Field Notes Authored by K. Claudian Field Notes QA/QCed by W. Field Notes DA/QCed by W. Field No	Waterbody Notes Natural Watercourse Transcription Surficial Drainage (i.e. furrows)_	apezoidal Channel	Grasse Dominate	ed by Aquat	ic Veg	Dry
	Field Notes Authored by K. Clanta	Field Notes	QA/QCed by	· ·		

Bushlot (X) 024 RITO24 ag. field SELLOGH. drascumed Road 29. Feld. with callale Road LakeShove



Non

10000	Time 12:35 (	950269 ayton, M. 9 20 20 20 20 20 20 20 20 20 20	etum NAD 83 of Regional
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m)% Riffle% Poc Evidence of eroding banks, Comments on bank sta		(CI	n)
Bedrock Cobble Boulder Gravel  In-water Cover Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domina	Boulder Other	Marl Watercress	Muck Detritus Aquatic Veg 
Adjacent Land Use  Fish Habitat Potential			
Critical Habitat (spawning or nursery areas, ground Migratory Obstructions (seasonal, permanent)	water upwellings)		
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Ponce Other Habitat Notes, Incidental Wildlife Observa	Dominated b	y Aquatic Veg	ied Tile Dry Bushlot
Field Notes Authored by R. Clayton. Field Notes	QA/QCed by M. Fair	la	



NOT YEAR ANAH

h.	
	Station # R) TO28 Project Name Nagara (Wind
	Watercourse Name unknown Project # 160950269
	Date Apr 4/12 Field Staff K. Clayton M. Faiella Time 12:40 and
	Weather conditions in a visit of the conditio
	Descriptive Location N 4769098 Datum Nad 8 3
	DOSCIPLIVE LOCATION
	Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Conductivity (μS/cm)
	Dissolved Oxygen (mg/L) PH Conductivity (μS/cm)
	Air Temperature (°C)
	Time in situ measurements taken
	Watercourse Dimensions & Morphology
	Mean Pentiful Width (m) Maximum Pool Depth (cm)
	wear bankfull width (m) Mean Water Denth (cm)
	Evidence of eroding banks, Comments on bank stability
-	exposed soil
;	Substrate (% cover)
•	Bedrock Cobble Sand SO Silt Muck Boulder Gravel SO Clay Marl Detritus
_	
	n-water Cover
(	Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg
(	Overhanging Vegetation Woody Debris Boulder Other Aquatic Veg
	Overhanging Vegetation Woody Debris Boulder Other Terrestrial plants
	Riparian Zone
ŀ	Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
F	djacent Land Use
	- agricultural land
	ish Habitat Potential
Ĺ	ritical Habitat (spawning or nursery areas, groundwater upwellings)
<u> </u>	ligratory Obetructions (accessed to 1)
17	ligratory Obstructions (seasonal, permanent)
N	ote any fish observations
•	ote any list observations
N	aterbody Notes
Ν	atural Watercourse Trapezoidal Channel Grassed Swale Buried Tile
S	urficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry
0	ther Habitat Notes, Incidental Wildlife Observations, etc
Fie	Id Notes Authored by K. Clayton Field Notes QA/QCed by H. Faielly
. , .	Field Notes QA/QCed by Y TAIRIA

przylez ag. field Hurbine. defined water flaw agricultural and water. No not changed bushlot ag. field



REA

#### Stantec

Station # RITD 29 Watercourse Name 29-1 Photos 8865-69 Date June 8, 2012 Weather conditions in previous 24 hrs Sunny GPS Coordinates (Zone) E 6286 Descriptive Location	Project Name NIAGARA WIND Project # 160950269 Field Staff T. CHANDLER M ELLAH Time 10:55AM Cloudy periods. mR N 4763603 Datum
Water Quality DAY BUT SOIL WET Dissolved Oxygen (mg/L)A pH Water Temperature (°C)A Time in situ measurements takenA	<u>N/A</u> Conductivity (μS/cm) <u>N/A</u> Air Temperature (°C) <u>25</u>
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width	Mean Water Depth (cm)
In-water Cover DP / Cover Types Present (circle): Undereut Bar Overhanging Vegetation Woody Bebris  Riparian Zone  Riparian Cover (% of watercourse shaded, dominations)	Boulder Other
Adjacent Land Use  Adjacent Land	
Migratory Obstructions (seasonal, permanent)  Low from Flow  Note any fish observations  How	
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observa	Greecod Swolo
Field Notes Authored by TICHANDLER Field Notes	



Stantec	REA
Station # RITO 29 Watercourse Name 29-2 Photos 8670 - 7  Date June 8, 2012 Weather conditions in previous 24 hrs 40 y 6 GPS Coordinates (Zone) 171 E 628309	Project Name NIAGARA WIND Project # 160950269 Field Staff ICHANDER MEUAH Time 1115AM N 4763066 Datum
Descriptive Location	
Water Quality DRY Dissolved Oxygen (mg/L) pH Water Temperature (°C) N/A Time in situ measurements taken N/A	MIA Conductivity (μS/cm)N(A
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) % Riffle (m) Evidence of eroding banks, Comments on bank st	
Substrate (% cover) BedrockCobble BoulderGravel	Sand Silt Muck Clay Marl Detritus
In-water Cover De Cover Types i'recept (circle): Undercut Bar Overhanging Vegetation Woody Debris	nks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domina	ant vegetation, mature or early successional)
Adjacent Land Use	bean.
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	dwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Po	nd Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obser	/ations, etc

Field Notes Authored by TICHANDUER





Station #_RITO29 Project Name NIAGARA WIND
Watercourse Name <u>₹29, −3</u> Project # 1609 50269
Photos 8872-76 Field Staff T. CHANDEER, M ELLAH
Date Time 11:35
Weather conditions in previous 24 hrs Sunny with cloudy periods
GPS Coordinates (Zone) 17T E 62 8 560 N 4762922 Datum
Descriptive Location
Water Quality
Dissolved Oxygen (mg/L) 6:30 pH 7:95 Conductivity (μS/cm) 1608
Water Temperature (°C) 15.17 Air Temperature (°C) 25
Time in situ measurements taken
Watercourse Dimensions & Morphology
Mean Watercourse Width 3 (m) Maximum Pool Depth 40 (cm)
Mean Bankfull Width (m) Mean Water Depth 5 (cm)
30 % Riffle 50 % Pool /0 % Run /0 % Fla
Evidence of eroding banks, Comments on bank stability NINDR BASAC SCOUR: SOME
TREES WITH BENT TRUNKS
Substrate (% cover)
Bedrock Cobble 40 Sand 26 Silt Muck Solder 36 Gravel Clay 6 Marl Detritus
Boulder
In-water Cover
Cov - Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  95% - Mature trees  Adjacent Land Use
Noodlot - mature
Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Spawary a nur Sery potential
Migratory Obstructions (séasonal, permanent)
Note any fish observations None observed
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observations, etc. Green Rrog. Naturally sinuous channel with well do Gined valley. Town Observed (214/5)
Field Notes Authored by T. CHANDLER Field Notes QA/QCed by



January II was a	in the second se
Station # R   TO3   1-7   2	Project Name Niagara Wind
Watercourse Name	Project # 160950269
Photos Seelos	Field Staff
Date JULY 11 2010	Time 5 000
Weather conditions in previous 24 hrs	SULDAY
GPS Coordinates (Zone) E 6,25	089 N 476507 Datum
Descriptive Location Valuthon Fo	1000 m upot of Heasup Ra
Water Quality	<i>)</i>
	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	Maximum Pool Depth (cm)
Mean Bankfull Width(m)	Mean Water Depth (cm)
% Riffle% Poo	
Evidence of eroding banks, Comments on bank sta	Dility
Substrate (% cover)	6
BedrockCobble	SandSiltMuck
BoulderGravel	Clay Mart Detritus
In-water Cover	
Cover Types Present (circle): Undercut Bank	ks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Overhanging vegetation vicedy beams	
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominar	nt vegetation, mature or early successional)
Adissantiandilla	
Adjacent Land Use	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground)	vater upwellings)
Migratory Obstructions (seasonal, permanent)	
	`
Note any fish observations	
	,
Waterbody Notes	
Natural Watercourse Trapezoidal Channel _	Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	
Other Habitat Notes, Incidental Wildlife Observat	
- surricial drainage CM	much soy hold
	0 0
	and the Meet



,	16	/ / 3	
R	**************************************	103	-consequence.
,	Motoragasion	8	

Stantec			, Fig 35
011-0215,60	Droject Name	liagara Wind	
Station # RITO 31 - 8	Project #//_/	1950269	1
Watercourse Name	Field Staff	4.12	
Filotos,	Time 4:57	(pr	
Date June 1 20 d	+ or summi		
Weather conditions in previous 24 hrs \( \lambda \)		U76 < 694 Date	um /
GP3 Cooldilates (2010)	(a) (b) (a) 14 K	OF UMS	To RO
Descriptive Location Jaughan Ko			
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	Air Temperature	vity (μS/cm)	sal d
Watercourse Dimensions & Morphology Mean Watercourse Width 15 (m) Mean Bankfull Width 3:5 (m)	Mean Water Dep		•
Substrate (% cover)	Sand	Silt	Muck
Bedrock Cobble Gravel			Detritus
BoulderGravel _	<u> </u>		•
Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, do  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, go	ominant vegetation, mate	ner	al)
Migratory Obstructions (seasonal, permanent	)		•
Note any fish observations	7		
11012			
Waterbody Notes Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugout		d Swale Burie	d Tile

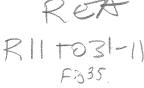




	WIND FARM	WATERBOO	Y RAPID ASSES	SMENT FORM	KIITO
Stantec					gogandelein.
Station # Watercourse Name Photos Date Weather condition GPS Coordinates Descriptive Location	s in previous 24	hrs 6+3	Project #_ // O Field Staff Field Staff Field Staff Field Staff Field Fi	1765,209 E	
Water Quality					
Dissolved Oxygen Water Temperatur Time in situ measu	e (°C)		Conductivi Air Temperature (°0	ty (μS/cm) C)	
Watercourse Dim Mean Watercourse Mean Bankfull Wid	Width th iffle	(m) (m) % Poo			cm) :m) % Fla
Substrate (% cove	er) rock	Cobble	Sand	Silt	Muck
	der	_Gravel	Clay	Marl	Detritus
Overhanging Vege <b>Riparian Zone</b>	ation Wood	y Debris	ks Deep Pool Boulder Other nt vegetation, mature		Aquatic Veg
Adjacent Land Use					***************************************
F <b>ish Habitat Poten</b> Critical Habitat (spa		∕ areas, ground\	vater upwellings)		
Migratory Obstruction	ns (seasonal, pe	ermanent)			
Note any fish observ	ations		7		
<b>Vaterbody Notes</b> Vatural Watercourse Surficial Drainage (i.	Trapez	oidal Channel _ _ Dugout Pond	Grassed Sv	valeBurie v Aquatic Veg	ed Tile
Other Habitat Note:	, Incidental Wi	Idlife Observat	lons, etc	Lyateria	we-

Field Notes QA/QCed by Jr. Mare Field Notes Authored by





	Y RAPID ASSESSMENT FOR	M R 11 to 31-11
Startec  Station # Plant Station # Photos Station Stat	Project Name Nagara V Project #_ 1/0095/02/09 Field Staff Time 30pm	Datum Leasup Kd
Water Quality Dissolved Oxygen (mg/L) pH Water Temperature (°C) pH Time in situ measurements taken	Air Temperature (°C)	XO)
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m)  ———————————————————————————————————		(cm) (cm) % Flat
Substrate (% cover)  Bedrock Cobble  Boulder Gravel	Sand Silt Mari	Muck Detritus
In-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris	Boulder Other	Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, domina  Adjacent Land Use	ant vegetation, mature or early succe	essional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	dwater upwellings)	
Migratory Obstructions (seasonal, permanent)  Seasonal  Note any fish observations	,	
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Por	nd Dominated by Aquatic veg	
Other Habitat Notes, Incidental Wildlife Observ	melised plu cu	Sicle Trest +
Field Notes Authored by Field Note	s QA/QCed by Jelle	annual Form doc

Non REA 378



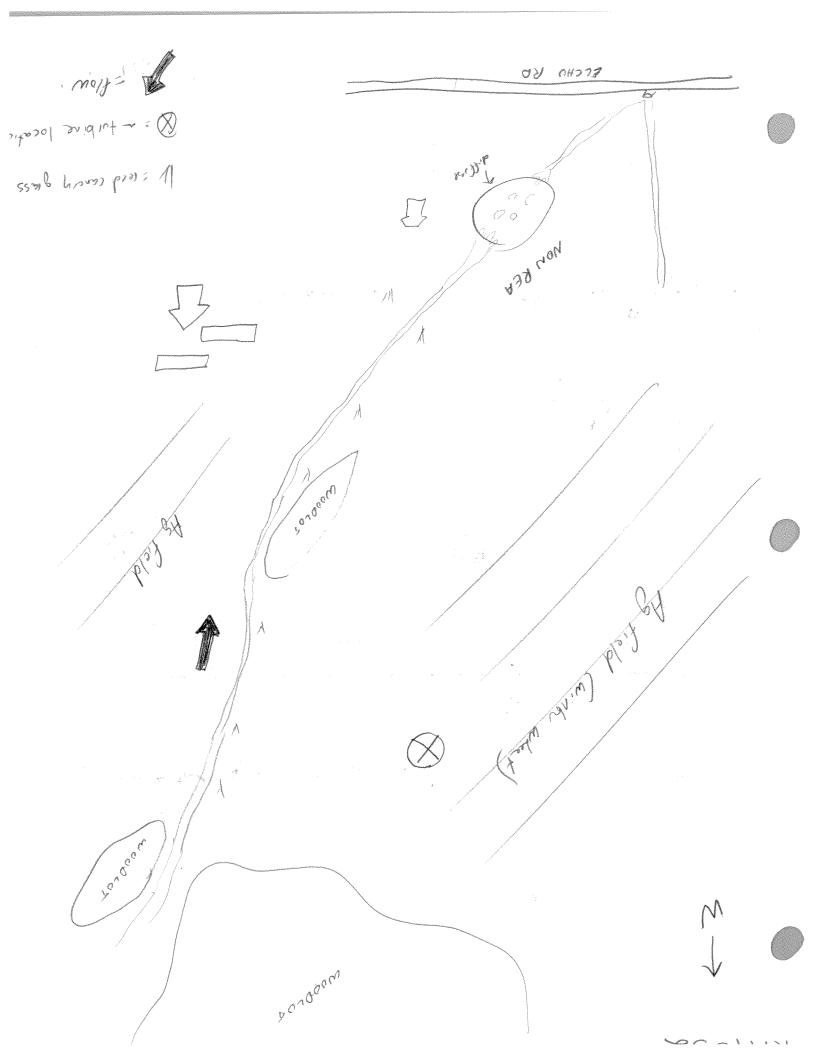
21.		Project NameN	$(a \circ a \circ a \circ a)(a)$	$\sim d$
Station # Rimos		Project # //o	250269	
Watercourse Name			7 1 K	
Photos 50 65  Date June 1 201		Time 5:450	\	
Weather conditions in previous 2	A hre			
GPS Coordinates (Zone)	T = 3/1 3/2	ABID N L	17652160	atum .
Descriptive Location Naudo	00 80			leasux
Descriptive Location Vision				
Water Quality	Pr7			
Dissolved Oxygen (mg/L)	pH_	Conductivit Air Temperature (°C	y (μS/cm)	
Water Temperature (°C)		Air Temperature (°C	) <u> </u>	
Time in situ measurements taken				
Watercourse Dimensions & Mo	orphology	Maximum Baal Dani	a drugge	-m)
Mean Watercourse Width	(m)	Maximum Pool Dept	" <del>-//-/-</del> "	om)
Mean Bankfull Width	(m)	Mean water Deput	% Pun	% FI
Mean Watercourse Width  Mean Bankfull Width  Riffle  Evidence of eroding banks, Communications	ments on hank	stability	- WINGII	
Evidence of eroding banks, com	THERITS OF Daries			
Substrate (% cover)		400-4	Cil4	Muck
Bedrock	Cobble	SandClay	SII[	Wuck Detritus
Boulder	Gravel	Clay	Maii	
Riparian Cover (% of watercourse	e shaded, domi	nant vegetation, mature	or early successio	nal)
Adjacent Land Use	Q VCS	Lorbal		
Fish Habitat Potential				
Critical Habitat (spawning or nurs	ery areas, grou	indwater upwellings)		
Migratory Obstructions (seasonal	, permanent)			•
Note any fish observations				
Note any histi observations	<u>e</u>	/		
Waterbody Notes	noroidal Chann	ol Grassed S	wale Rur	ied Tile
Natural WatercourseTrap	pezoidai Charii Dugout B	el Grassed S	y Aquatic Veg	Dry 1/
Surficial Drainage (i.e. furrows)	Dugout Pi	Dild Dominated b	y Aquatic Veg	
Other Habitat Notes, Incidental	Wildlife Obser	rvations, etc.	·	
Other Habitat Notes, incidental	CULVERA	wer acces	rourl.	
	DI-			
- soasonalli	rel de	Knution (	11-ditired)	MY
V/	Elald Ma	tes QA/QCed by Je Mon	•	•
Field Notes Authored by				
			Interhadu Danid Access	nent Form doc



REA

C14	4 1
<b>NT3</b>	ntor
Ju	

Station # RII To 3 2	Project Name Niasava Wind
Watercourse Name Unknown	Project Name <u>Niasava Wind</u> Project #/60950269
Photos 8-23	Field Staff Kc.mF
Date April 4, 2012 Weather conditions in previous 24 hrs 0 and	Time 9: 20 am
GPS Coordinates (Zone) 177 F 060	4862 N 476 4452 Datum NAD 8
Descriptive Location ~ 300mNo(th at El	cho Rd + ~1.4km NE of Culver Rd.
	END ROLL STORY ROLL ROLL
Water Quality	
Dissolved Oxygen (mg/L) 13.5/mg/LpH	9.36 Conductivity (µS/cm) 1003
Water Temperature (°C) <u>5.05°C</u>	9.36 Conductivity (μS/cm) 1003 Air Temperature (°C) 10°2
Time in situ measurements taken 9:33	Sam.
Watercourse Dimensions & Morphology	
Mean Watercourse Width 20 (m)	Maximum Pool Depth 20 (cm)
wear bankfull width 5.0 (m)	Mean Water Depth /5 (cm)
% Riffle 30 % P	ool % Run 70 % Flat
exposed so; ).	stability Undercut, minor slumping
Substrate (% cover)	
Bedrock Cobble Gravel	SandSOSiltMuck_ ClayMarlDetritus
In-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris	anks Deep Pool Watercress Aquatic Ver
Riparian Zone Riparian Cover (% of watercourse shaded, domin	nant vegetation, mature or early successional)
Adjacent Land Hear overhancing sip	Parian grasus.
agriculture.	U
agriculture.	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groun	ndwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Non REA Section dis is diffuse 10	ack of definition many raws obstruction
Note any fish observations $N_{ONO}$	
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Po	el Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry
	vations, etc.
Many bird species.	vations, etc.
Field Notes Authored by MF Field Note	es QA/QCed by W





REA

Stanted

Station # RILTO33 Project Name NIAGARA WIND
Watercourse Name 33-1 Project # 160 950 269
Photos 9857-61, 8862deletal 8863-64 Field Staff Thandler of M. Ellah
Date Tune 7, 2017 Time 61,55 PM
Weather conditions in previous 24 hrs Light thunder showers and sunny
GPS Coordinates (Zone) 171 E 626876 N 4765898 Datum
Descriptive Location Datum
Water Quality
- many
Time in situ measurements taken 7:00 PM
Watercourse Dimensions & Morphology
Mean Watercourse Width 1,5 (m) Maximum Pool Depth 15 (cm)
Mean Bankfull Width (m) Mean Water Depth 3-4 (cm)
Evidence of eroding banks, Comments on bank stability MINDR BANKSCOUR
Substrate (% cover)
Bedrock 4 Cobble 5 Sand 60 Silt Muck Detritus
In-water Cover  Cover Types (rescent reine): Undercut Banks Deep Pool Watercress Aquatic Veg  Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  So do Grasses, minor tree early  Adjacent Land Use
Planghed Agricultural field w coops planted
The state of the s
Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Doknial spawning or hursery areas
Migratory Obstructions (seasonal, permanent)
LOW/NO Flow
Note any fish observations
Waterbody Notes  Natural Watercourse 77 Trapezoidal Channel 77 Grassed Swate Buried Tile
Curficial Drainage / a furnish
Sumicial Drainage (i.e. furrows) Dugout Pond Deminated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observations, etc. green frog
No flow- water ponded i Watercourse Flows along Gee Road
alongits down stream section.
Field Notes Authored by 1. Chardler Field Notes QA/QCed by

RO1033 33-1 PROPERTY LINE Watercourse has been realished along fee Pd. (old) □ FARM HousE



			NOT REA
WIND FARM WATERBOD	Y RAPID ASSESS	MENT FORM	2 11To 34
Stantec			E12
Station # R   TO 3   Watercourse Name Photos See log Date Weather conditions in previous 24 hrs Surry cl	Project Name No Project # 1600 Field Staff No Project # 1600 Field Staff No Project Time 2140 project Name No	150269	
GPS Coordinates (Zone) E 62 C Descriptive Location C A A A A A A A A A A A A A A A A A A	04 500 m	1763909 De	atum
Water Quality Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity Air Temperature (°C)		
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width		n(cr (cr _% Run	•
Substrate (% cover)  Bedrock  Boulder  Gravel	SandClay	Silt Marl	Muck Detritus
In-water Cover Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominant	ks Deep Pool Boulder Other_	Watercress	Aquatic Veg
Adjacent Land Use	Trogozation, materio		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds	water upwellings)		14-25-16-24-34-34-34-34-34-34-34-34-34-34-34-34-34
Migratory Obstructions (seasonal, permanent)			•
Note any fish observations			
Waterbody Notes Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Sw Dominated by	ale Burie Aquatic Veg	d Tile
Other Habitat Notes, Incidental Wildlife Observat	hea 1		
Field Notes Authored by Field Notes C	DAYQCed by Free		





Station # RIITO35H	Project Name Niagara Wind F54
Watercourse Name	Project #_1/00950269
Photos See log	Field Staff REQUE
Date 1408 11 2012	Time 1:50 pm
Weather conditions in previous 24 hrs Sunn	1 or 100+.
GPS Coordinates (Zone)   TE 627.10	69 N, 476 453 2 Datum
Descriptive Location Ger Rd South	of Vaushan
Water Quality	2
Dissolved Oxygen (mg/L) pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	Maximum Pool Depth (cm)
Mean Bankfull Width (m)	Mean Water Depth(cm)
Mean Bankfull Width (m)	% Run % Flat
Evidence of eroding banks, Comments on bank sta	bility
Substrate (% cover)	
Bedrock Cobble	SandSiltMuck
Boulder Gravel	ClayDetritus
	•
In-water Cover	Door Dool Materiana Assetia Vas
Cover Types Present (circle): Undercut bank	ks Deep Pool Watercress Aquatic Veg Boulder Other
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominar	nt vegetation, mature or early successional)
Adjacent Land Use	
Fish Habitat Potential	votor unualtingal
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds	water upwellings)
	water upwellings)
Critical Habitat (spawning or nursery areas, grounds Migratory Obstructions (seasonal, permanent)	water upwellings)
Critical Habitat (spawning or nursery areas, grounds	
Critical Habitat (spawning or nursery areas, grounds  Migratory Obstructions (seasonal, permanent)  Note any fish observations	
Critical Habitat (spawning or nursery areas, grounds  Migratory Obstructions (seasonal, permanent)  Note any fish observations	
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel_	treas normally farmed now dry Grassed Swale Buried Tile
Critical Habitat (spawning or nursery areas, grounds  Migratory Obstructions (seasonal, permanent)  Note any fish observations	treas normally farmed now dry Grassed Swale Buried Tile
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows)  Dugout Pond	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel_	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Critical Habitat (spawning or nursery areas, grounds  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse  Trapezoidal Channel Surficial Drainage (i.e. furrows)  Dugout Pond  Other Habitat Notes, Incidental Wildlife Observat	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Critical Habitat (spawning or nursery areas, grounds  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse  Trapezoidal Channel Surficial Drainage (i.e. furrows)  Dugout Pond  Other Habitat Notes, Incidental Wildlife Observat	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Critical Habitat (spawning or nursery areas, grounds  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse  Trapezoidal Channel Surficial Drainage (i.e. furrows)  Dugout Pond  Other Habitat Notes, Incidental Wildlife Observat	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry





Field Notes Authored by KC

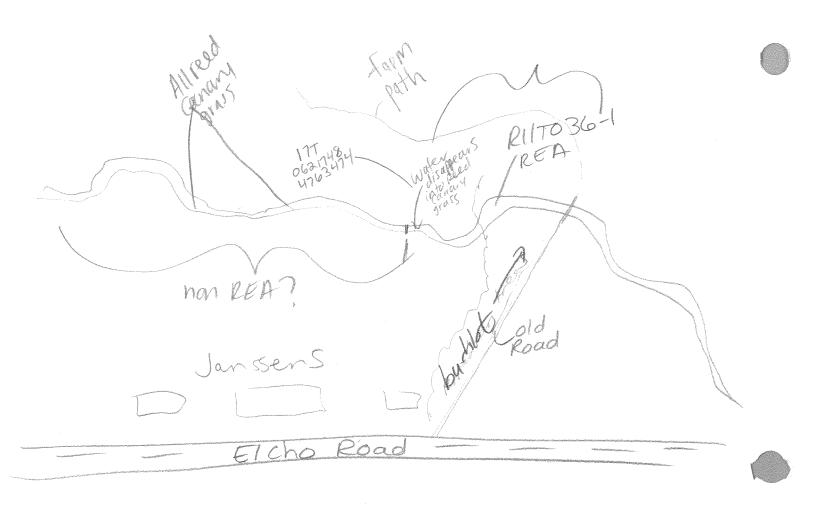
#### WIND FARM WATERBODY RAPID ASSESSMENT FORM

Station # RII TO35 H Project Name Niagara Wind Project #_ Watercourse Name Field Staff Photos 500 Time 2:10 Date Jul Weather conditions in previous 24 hrs Datum GPS Coordinates (Zone) Descriptive Location 699 **Water Quality** 7. / Conductivity (μS/cm) ___ Dissolved Oxygen (mg/L) ______ Air Temperature (°C) 25°C Water Temperature (°C) __ Time in situ measurements taken Watercourse Dimensions & Morphology Maximum Pool Depth (cm) Mean Watercourse Width Mean Water Depth (cm) Mean Bankfull Width (m). % Flat % Run % Pool % Riffle Evidence of eroding banks, Comments on bank stability Substrate (% cover) Silt Muck Cobble Sand **Bedrock Detritus** Gravel Clay_ Boulder In-water Cover Aquatic Veg Watercress Deep Pool **Undercut Banks** Cover Types Present (circle): Other Boulder Woody Debris Overhanging Vegetation Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) low How or clasional Note any fish observations Mre Waterbody Notes **Buried Tile** Trapezoidal Channel Grassed Swale____ Natural Watercourse Dominated by Aquatic Veg_ Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observations, etc. _ M. Singal Dub

Field Notes QA/QCed by W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



						Tile 25
90						REA DIS inbushla
	WIND FARM	M WATERBO	DY RAPID	ASSESSI	MENT FORM	Afon REA
Stantec					Mf-	artesto
Date June Weather cond GPS Coordin	1/2 /2 /2ch.	<u> </u>			50269 Han M.Fa	Datum Nad 83
	west of	Janc	Ceac	Propert	<del>\</del>	
Water Tempe	ygen (mg/L) <u>6 · 0</u>	pH_		Conductivity perature (°C)	(μS/cm) <u>38</u> 21°C	
Mean Waterc Mean Bankfu	% Riffle	(m) (m) % P	Mean Wa	n Pool Depth ater Depth	0.60 0.40 % Run	(cm) (cm) % Flat
Evidence of e	eroding banks, Com	e tated c		CAS .		<u> </u>
Substrate (%	cover) _Bedrock	Cobble		and	Silt S	Muck
	_Boulder	Gravel	<u>// 🔾 ·</u> C	Clay	<u>Marl</u>	Detritus
In-water Cov Cover Types Overhanging	Present (circle):	Undercut Ba	anks D Boulder	eep Pool Other_	Watercress	Aquatic Veg
Riparian Zor Riparian Cov	er (% of watercours	se shaded, domir	nant vegetat	ion, mature o	or early success	ional)
Adjacent Lan	d Use	and:	abour			
Fish Habitat Critical Habita	Potential at (spawning or nur	sery areas, grou	ndwater upw	veilings)		
Migratory Obs	etructione (easeons	il nermanent)	F	9		
Note any fish	observations	Nama ang ang ang ang ang ang ang ang ang an				
Waterbody Natural Water Surficial Drain	Notes rcourse Tra nage (i.e. furrows)_	apezoidal Channo	el ond [	Grassed Sw Dominated by	vale B v Aquatic Veg	uried Tile Dry
Other Habita	nt Notes, Incidenta ಕ ಬಳಿಗು	l Wildlife Obser	vations, etc	·		
	300					
Field Notes Author	red by K. Claytu	Field Not	es QA/QCed by	MIK	, inches de la constantina della constantina del	



N





Station # PNT038-	<u>-1                                    </u>	Project Name _	Niaga	ra Wir	\d
Watercourse Name unkna		Project #/_	0950		
Photos Su photo by		Field Staff	Clauda	h, M, to	liella.
Date Wels/13/13		, Time <u>11:30</u>	<b>)</b> (	*	
Weather conditions in previous	24 hrs <u>\lambda \lambda \lambd</u>	V			
GPS Coordinates (Zone)	T E 0626	<u> </u>	1476	D00	atum Nad
Descriptive Location Now T	1911 Gt				*
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements take	pH	Conduc Air Temperature	ctivity (μS/cr (°C) <u></u>	m)	
Watercourse Dimensions & N	lombology	Ť			
Mean Watercourse Width		Maximum Pool	)anth	(or	m)
Mean Bankfull Width	(m) ⁻	Mean Water Dep	oth Jepui	(Cl	n)
	% Poc	ilican water bei	% Ru	(C/	% Flat
Evidence of eroding banks, Cor		***************************************	/0 110		
Substrate (% cover)				and the same of th	
Bedrock	Cobble Gravel	Sand	<u> </u>	_Silt_ <u>&gt;</u>	<u>&gt;</u> Muck
Boulder	Gravel	Clay		Marl	Detritus
Overhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours		nt vegetation, mat	ther	succession	ai)
Aujaconi Lanu USO	Janc.				>
Fish Habitat Potential Critical Habitat (spawning or nur					
Migratory Obstructions (seasona	II, permanent)				
Note any fish observations					
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)			d Swale d by Aquati		d Tile
			- vj riquali	- 1-9	U. y
Other Habitat Notes, Incidental	Wildlife Observat	ions, etc.			
. 8					
Field Notes Authored by K. Clayfor	Field Notes Q	A/QCed by	•		

Bushlat 164 8751 Say beans. (RIM0381) i pitos ? Moled H.O. at the series Jerros 361 Make street Silver





Station # RIT038-3	<b>)</b>	Project Name	iagaral	vind	
Watercourse Name Lancaco	. 1	Project #/_O	950269		
Photos _ Set on to lose	<del>~</del>	Field Staff KClo	when a v	1 Fair	<u>ella -</u>
Date June 3/12		Time <u>12:20</u>			
Weather conditions in previous	24 hrs Hot	dhumod.			
GPS Coordinates (Zone)	T E OGZ	750 N_	476950	Datum	Nacks
Descriptive Location	W Santh	of lilver	Street.		
Water Quality	n ater	Canductivi	ity (S/cm)		
Dissolved Oxygen (mg/L)	pH	Conductiv	ιι <b>y</b> (μο/σιτή		
Water Temperature (°C)		Air Temperature (°	C)		
Time in situ measurements take	m				
Watercourse Dimensions & M	lorphology		- 41-	(000)	
Mean Watercourse Width	<u>&gt;(m)</u>	Maximum Pool De	otn	(CIII)	
Mean Bankfull Width Q	(m) [·]	Mean Water Depth	% Run	(CIII)	% Flat
% Riffle	% Po		% Ruii		/0 1 100
Evidence of eroding banks, Cor	nments on Dank s	stability			
Substrate (% cover)					
Bedrock	Cobble	Sand	<u> </u>		_Muck
Boulder	Gravel	Clay	Mari		_Detritus
	rse shaded, domin	nant vegetation, matur	e or early succe	essional)	·
Adjacent Land Use	ians ·				
MIZZZZZZZZ					
Fish Habitat Potential Critical Habitat (spawning or nu	rsery areas, grour	ndwater upweilings)	·		
Migratory Obstructions (season	al, permanent)			•	
Note any fish observations					
Waterbody Notes			<b>O</b> issale	م المسام المساوح	Tilo
Natural Watercourse T	rapezoidal Channe			Buried 7	
Surficial Drainage (i.e. furrows)	Dugout Po	ond Dominated	by Aquatic Veg	3	Dry
Other Habitat Notes, Incident	al Wildlife Obser	vations, etc. <u>Col</u>	pir to	Chick	20
VI CLA.	V	AND	,		
Field Notes Authored by K VIW	10Y \ Field Not	es QA/QCed by			

Sel mar Del mar Del





のいせるこの	
Station # <b>R11 T0</b> 3 9	Project Name Niagara Wind
Watercourse Name_unknaw?	Project # 160958269
Photos 708-714 Date June 11/12	Field Staff K. Clauten, M. Farcla
Date June 1/12.	Time 13:00
Weather conditions in previous 24 hrs	pain, clardy, light breeze not
GPS Coordinates (Zone)     E	Vaughn Road West of Part David
Descriptive Location Sath of Road	Vaughn Rood, WEVE OF FORT LAWO
Water Quality DC4	
Dissolved Oxygen (mg/L)	pH Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width (m)	Maximum Pool Depth(cm) Mean Water Depth(cm)
Mean Bankfull Width (m)	Mean Water Depth (cm)
% Riffle	_% Pool% Run% Flat
Evidence of eroding banks, Comments on I	bank stability
Substrate (% cover)	
Bedrock Cobble	eSandSilt <i>SO</i> _Muck
Boulder Grave	eSandSiltSO_Muck
In-water Cover Cover Types Present (circle): Under Overhanging Vegetation Woody Debris	cut Banks Deep Pool Watercress Aquatic Veg s Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded	dominant vegetation, mature or early successional)
Adjacent Land Use	Cambridge
	Tar Mila la
Fish Habitat Potential Critical Habitat (spawning or nursery areas,	, groundwater upwellings)
Migratory Obstructions (seasonal, permane	ent)
Waterbody Notes Natural Watercourse Trapezoidal C Surficial Drainage (i.e. furrows) Duge	Channel Grassed Swale Buried Tile out Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife C	Observations, etc. Campletely dry, Surficial augh - non REA
Field Notes Authored by K. Cauton. F	Field Notes QA/QCed by

Non REA



# WIND FARM WATERBODY RAPID ASSESSMENT FORM

RIITO41-

Station # 5110941	1			
Watercourse Name		Project #	agara Wi	7.4
Photos		Field Staff KE +	10000	
Photos Date Date	f Lighter	Time 9:31 A	M	
vveather conditions in previous	s 24 hrs 🗸 🗸 🦯	Ġ		*
GPS Coordinates (Zone)	ME bal	127 N 4	17569921	Datum
Descriptive Location 60 CC	<u> </u>	ALDINOND OF		ot ty
4 900 m Past	into he			
Water Quality				
Dissolved Oxygen (mg/L)	pH_	Conductivity	(uS/cm)	
Water Temperature (°C)		Air Temperature (°C)	<u> </u>	
Time in situ measurements tak	en			
Watercourse Dimensions & M	Morphology			
Mean Watercourse Width	(m)	Maximum Pool Depth	) ( <i>(</i>	rm)
Mean Bankfull Width	(m).	Mean Water Depth	((	em)
% Riffle	% Pc		_% Run(\	% Els
Evidence of eroding banks, Co	mments on bank s	tability /		/O 1"10
		_/		
Substrate (% cover)				
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel/_	Clay	Marl	
Cover Types Present (circle):	Undercut Bar	nks Deep Pool	Watercress	Aquatic Veg
Cover Types Present (circle): Overhanging Vegetation W Riparian Zone	oody Debris	Boulder Other_		Aquatic Veg
Cover Types Present (circle): Overhanging Vegetation W  Riparian Zone  Riparian Cover (% of watercours	oody Debris	Boulder Other_		
n-water Cover Cover Types Present (circle): Overhanging Vegetation W Riparian Zone Riparian Cover (% of watercours Adjacent Land Use	oody Debris	Boulder Other_		
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  djacent Land Use	se shaded, domina	Boulder Other_		
Cover Types Present (circle): Overhanging Vegetation W Riparian Zone Riparian Cover (% of watercours adjacent Land Use	se shaded, domina	Boulder Other_		
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone  Riparian Cover (% of watercours  Riparian Cover (% of watercours)  Riparian Cover (% of watercours)	se shaded, domina	Boulder Other_		
Cover Types Present (circle): Dverhanging Vegetation W Riparian Zone Riparian Cover (% of watercours adjacent Land Use  ish Habitat Potential critical Habitat (spawning or nurs	se shaded, domina	Boulder Other_		
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Rigratory Obstructions (seasona	se shaded, domina	Boulder Other_		
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Rigratory Obstructions (seasona	se shaded, domina sery areas, ground	Boulder Other_		
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  ligratory Obstructions (seasona  ote any fish observations  /aterbody Notes	se shaded, domina	Boulder Other_		
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Iligratory Obstructions (seasona  Tote any fish observations  Atterbody Notes  atural Watercourse Tra	se shaded, domina sery areas, ground I, permanent)	Boulder Other_ Int vegetation, mature or water upwellings)  Grassed Swal	early succession	nal)
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  ligratory Obstructions (seasona  ote any fish observations  /aterbody Notes	se shaded, domina sery areas, ground I, permanent)	Boulder Other_ Int vegetation, mature or water upwellings)  Grassed Swa	r early succession	nal)
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Indigratory Obstructions (seasonate  Total Adjacent Seasonate  Cote any fish observations  Traintical Drainage (i.e. furrows)	se shaded, domina sery areas, ground I, permanent)  pezoidal Channel Dugout Pond	Boulder Other_ Int vegetation, mature or Iwater upwellings)  Grassed Swall Dominated by A	r early succession	nal)
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Iligratory Obstructions (seasonal  ote any fish observations  Atterbody Notes  atural Watercourse Tra  urficial Drainage (i.e. furrows)  ther Habitat Notes, Incidental	se shaded, domina sery areas, ground I, permanent)  pezoidal Channel Dugout Pond Wildlife Observat	Boulder Other_ ant vegetation, mature or water upwellings)  Grassed Swall Dominated by A	r early succession	nal)
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurs  Iligratory Obstructions (seasona  Tote any fish observations  Atterbody Notes  atural Watercourse Tra	se shaded, domina sery areas, ground I, permanent)  pezoidal Channel Dugout Pond Wildlife Observat	Boulder Other_ ant vegetation, mature or water upwellings)  Grassed Swall Dominated by A	r early succession	nal)
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Iligratory Obstructions (seasonate any fish observations  Atterbody Notes  attral Watercourse Transport of the Habitat Notes, Incidental  The Habitat Notes, Incidental	se shaded, domina sery areas, ground I, permanent)  pezoidal Channel Dugout Pond Wildlife Observat	Boulder Other_ ant vegetation, mature or water upwellings)  Grassed Swall Dominated by A	r early succession	nal)
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Iligratory Obstructions (seasona  ote any fish observations  atterbody Notes  attural Watercourse  Tra  urficial Drainage (i.e. furrows)  ther Habitat Notes, Incidental	se shaded, dominated server areas, ground l, permanent)  pezoidal Channel Dugout Pond  Wildlife Observat	Boulder Other_ Int vegetation, mature or Iwater upwellings)  Grassed Swall Dominated by A	r early succession	nal)
Cover Types Present (circle): Dverhanging Vegetation W  Riparian Zone Riparian Cover (% of watercours  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nurs  Iligratory Obstructions (seasonate any fish observations  Atterbody Notes  attral Watercourse Transport of the Habitat Notes, Incidental  The Habitat Notes, Incidental	se shaded, dominated server areas, ground l, permanent)  pezoidal Channel Dugout Pond  Wildlife Observat	Boulder Other_ ant vegetation, mature or water upwellings)  Grassed Swall Dominated by A	r early succession	nal)



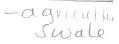
REA

		7117
Stantec	4	1-4

Station #RITO	,	Project Name	N 1.	. 3	40
Watercourse Name_\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Project #	Niaga	ra Win	1
. Photos <u>600-68</u>		Field Staff	247506	- <u>a</u> 4	
Date Apr 4/12		Time 5	, clayton	$M \cdot F 0$	uella
Weather conditions in previous 24	hrs		:		
GPS Coordinates (Zone)	E 06199=	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	V 4757	7 <b>5</b> -	4
Descriptive Location For	Some E	d A	<u> </u>	Da Da	tum Vac
		1			
Water Quality					
Dissolved Oxygen (mg/L)		284		<u> </u>	7
Water Temperature (°C)	200 " PI'-	Ala Tarre	ctivity (µS/cm	1) <u>+ 0 0</u>	2 45 cm
Time in situ measurements taken	5 1	Air Temperature	e (°C)	<b>∂°</b> C	, , , , , , , , , , , , , , , , , , ,
	1.0	standing			
Watercourse Dimensions & Mor	phology	Stawater			
Mean Watercourse Width		Maximum Pool [	Depth 🔿 🗸	(cm	1
Mean Bankfull Width	(m)	Mean Water Der	oth 🔿 .	(cm	
% Riffle	<u>√⊘</u>		% Run	(CIII	<i>)</i> % Fla
Evidence of eroding banks, Comm	ents on bank sta	bility			
tairlys	<u> </u>	wered in	Mach	7	
Substrate (% cover)					
Bedrock	Cobble	Od	10		*
Boulder	GravelZ	Sand		Silt	Muck
		Clay		Mari	Detritus
In-water Cover			-Stand	MA	
Cover Types Present (circle):	Undercut Bank	s Deep Poo	Markey	ater:	
			Waterc her	ress Ac	quatic Veg
Riparian Zone	,	Dodiaci Ol	1161		
Piparian Cover (%)					
Riparian Cover (% of watercourse s	haded, dominan	t vegetation, matu	ure or early s	uccessional	1
Adjacent Land Use	grasses,.	early			,
Adjacent Land USB	4				
- CANNIAN	<u>14 -                                   </u>				
Fish Habitat Potential					
Critical Habitat (spawning or numer					
Critical Habitat (spawning or nurser)	/ areas, groundw	ater upwellings)			
Migratory Obstructions (seasonal, pe	VINVA-CALT	toraging			
mg. Ltd. y oboti detions (seasonal, pe	ermanent)				
Note any fish observations	4 M T 4 S				
The distribution of the di	<u> 211 - 4556 </u>	- Cyprini	dal p		
		*	*		
Waterbody Notes					•
Natural Watercourse 💛 Trapez	oidal Channel	<b>O</b>			
Surficial Drainage (i.e. furrows)	_ Dugout Pond	Grassed	Swale	Buried	Tile
			by Aquatic	Veg	Dry
Other Habitat Notes, Incidental Wil	dlife Observativ	ma ata			
- from	Small	ons, etc.	7		
	1 2111111	Trinia	X *		
: , }					
ield Notes Authored by K.C. author	Elaberta e e e	V C	**************************************		
	Field Notes QA/	QCed by	<u>itila</u>		

Bush lot as Seldi Gore Road





Stantec

Out " OUTAILS					K6
Station # RIITO 42-1		Project Name	NI San	ura lali	
watercourse Name_water and			(00950)	FLO MY	$\wedge a$
Watercourse Name unknown Photos		Field Stoff		<u> </u>	
Date Apr Cilia		Field Staff	1 layten	Mitaic	Nα
Weather conditions in previous 24 hrs		Time 9:070 a	th		
GPS Coordinates (Zone)	· JANNA				
Descriptive Location	<u>= 96199</u> U	<u> </u>	49536	a 7 Dat	um M.
Descriptive Location 1. 2 km s	uth off		1.4 Km	ATCD+ OF	C NOC
	utchinson	r Koad .			
Water Quality no water		ag. Swall			
Dissolved Oxygen (mg/L)	pH	Air Tomporature	tivity (uS/cm)	١	
vvaler remperature (°C)		Air Temperature	CONTRACTOR IN		
Water Temperature (°C) Time in situ measurements taken		· ··· romporature	(9)		
Watercourse Dimensions & Morpho	Joans .	/			·
Mean Watercourse Width		/	•		
Mean Bankfull Width	n)	Maximum Pool D	epth epth	(cm)	1
0/ 5:55	•••	Mean Water Dep	oth	(cm)	
% Riffle	% Pool		% Run	(GII)	
Evidence of eroding banks, Comments	on bank stat	jility	// /\dii	***************************************	% Flat
Sub-A-4 (N)	$\leftarrow$				
Substrate (% cover)					-
BedrockC	obble	Cond			
<b>D</b> 1.1	ravel	Sariu		Silt	Muck
	, a, c,	Clay	,	Varl	Detritus
n-water Cover				41	
Cover Types Present (circle):	ndercut Ranke	Deep Poo		* -	
Overhanging Vegetation Woody D	ohrie Danks	Deep Poo	Matercre	ess Aq	uatic Veg
	20119	Boulder Ott	ner		
Riparian Zone	`	\			
Riparian Cover (% of watercourse shad	ed dominant	Voqetetien			
Riparian Cover (% of watercourse shad	ou, dominiant	vegetation, matu	ire or early su	ıccessional)	
Adjacent Land Use	,				
7			- 0 0	land	
			- ag	rarva	
ish Habitat Potential		-			
Critical Habitat (spauming or					
Critical Habitat (spawning or nursery are	as, groundwa	ter upwellings)			
ligratory Obstructions (seasonal, perma	anent)				
lote any fish observations					
	$\times$				
/aterbody Notes					
mArrian 1347 1					*
atural Watercourse Trapezoida	l Channel	Grassed	Swala	D	
urficial Drainage (i.e. furrows) Du	Igout Pond	Dominate d	Swale	_ Buried 1	「ile
		— Pominated	by Aquatic V	eg	Dry
ther Habitat Notes, Incidental Wildlife	Oboomist'	:		-m- 5	
A TITLE STATE OF THE STATE OF T	, Observation	ns, etc	· lots of	= Red III	i na i
		black bind	c Callio	101	
				<i>'</i>	
					·
1/ \ (					
d Notes Authored by K. Clay +an	Field Notes QA/Q	Carlo M. T.			



Stantec	· · · · · · · · · · · · · · · · · · ·
Station # RITTO 42 - 2	. KE
Watercourse Name	Project Name Niagara Wind
Watercourse Name Unividant	Project # (609503.69
Date Apr 5/13	_ Field Staff
	Time 9:0
Weather conditions in previous 24 hrs(	2001,1200
GPS Coordinates (Zone) TEO Descriptive Location Square	The state of the s
Descriptive Location Km Sauth	not they 3 a 1.4 Km west of
- AMCNJW	Rd.
Water Quality	
Dissolved Oxygen (mg/L) 1) - 85mg/L	pH Conductivity (μS/cm) / (μS/cm)
Water Temperature (°C) 5.79°C	Air Tomperature (20)
I man in a 11.	- / w remperature (*C)
	doum
Watercourse Dimensions & Morphology Mean Watercourse Width (m)	Standit 9
	Maximum Pool Depth 0.40 (cm)
0/ 0://	Mean Water Depth 0.60 (cm)
Evidence of eroding banks, Comments on b	_% Pool % Run % Flat
Stable banks, comments on b	ank stability
2144	riparian regetation.
onpariate (% cover)	
BedrockCobble	SandSO Silt \0 Muck
Boulder Gravel	Sand S Silt Muck  4 Clay Marl Detritus
Riparian Zone Riparian Cover (% of watercourse shaded, do	ominant vegetation, mature or early successional)  ary — also lots of Redoucer Dogn
Carrieda	\$ broplars.
tar Wiland	
ish Habitat Potential	
critical Habitat (spawning or nursery areas, g	roundwater upwellings)
ligratory Obstructions (seasonal, permanent)	Transfer .
ote any fish observations	
/aterbody Notes	
atural Watercourse Trapezoidal Cha	nnol .
urficial Drainage (i.e. furrows) Dugout	
	Diy
ther Habitat Notes, Incidental Wildlife Obs	servations, etc. Redunda blackby to
	orvacions, etc
	,
d Notes Authored by K. Classico Field N	Notes QA/QCed by M. Facel a.

RIH042-2 Bush lot Bushlot agricultural 212-1 as field. as field Hufchian Rd [] _ buses Faris



RITO42-3 Non REA

Station # RITO42-	2 t 042-4	Project Name	Niagara	Wind	i j
Watercourse Name unknow		Project #	16095026	7	*
Photos 34-41		Field Staff	· Claciton.	MEA	716
Date Apr 19/13		Time			
Weather conditions in previous 2	24 hrs     3,00				
GPS Coordinates (Zone)			1 4753674	Datum	Vad83
Descriptive Location _600m			m east of		n Road
Water Quality	- Standir	y wate			
Dissolved Oxygen (mg/L)	pH_	Conduc	ctivity (µS/cm)		
Water Temperature (°C)		Air Temperature	e (°C) "		
Time in situ measurements takei	n		,		
Watercourse Dimensions & Mo	orphology		Stand	ingwo	Her
Mean Watercourse Width 6.5	h (m)	Maximum Pool	Denth 0.30	(cm)	
Mean Bankfull Width	(m)	Mean Water De	nth 0.35	(cm)	
% Riffle	% Po	ol 107		(011)	% Flat
Evidence of eroding banks, Com	ments on bank st	ability	/0 IXUII	:	/0 1 lat
			ble in we	24dion	\
Substrate (% cover)		<i>ş</i>			
Bedrock	Cobble	Sand	Silt	50	Muck
Boulder	Gravel	Sand Clay	Siit_ Marl		Detritus
bodidei	Oraver	Oiay	iviaii	28	Deu illus Ti
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone			ool Watercress Other	Aqua	atic Veg
Riparian Cover (% of watercours	e shaded, domina	ınt vegetation, ma	iture or early succe	essional)	
<590, grass	es, ane z	willow so	Chryda.		
Adjacent Land Use					
ag · field					
Figh Hobitat Datastial					
Fish Habitat Potential	2001.02000.02000	tuator unuallingo	` .		
Critical Habitat (spawning or nurs	sery areas, ground	awater upweilings	)		
Migratory Obstructions (seasona	I, permanent)				
Note any fish observations	7 COC O K AC C .				
Waterbody Notes					•
Natural Watercourse Tra	nezoidal Channel	Grace	ed Swale	Buried T	مان
Surficial Drainage (i.e. furrows)					Dry
	Dagout Poil	u Domina	ica by Aqualic Vec	J	بر ال
Other Habitat Notes, Incidental	Wildlife Observa	ations, etc	***		
#					
1/ 2/	3	. 8			
Field Notes Authored by A. Claut	Field Notes	QA/QCed by	raiella.		

Bush lot. harse grande ag, field. stonder ag. Field. REA RITTO42-2 farm Swale -RITO42-4 Midefred channel nowater a culvert 30m Not standing water about 30m Not culvertives talged a lack of a lack of the culvertives to a lack of the culvertive t · we is de rive through. nowater a culvert REA hase *photos: 42-54 - willows, actorive, backgrape, Ther hinge HWY3



REA

Stanted

	Station # RITO 44 Watercourse Name un Knam Photos 93-101	Project Name Niagara Wind Project # 1609 50 369 Field Staff
٠	Date Apr 19/12	
	Weather conditions in previous 24 hrs 17°	Time 2:40pm
	GPS Coordinates (Zone)	24474: N 4748438 Datum NAD83
	Descriptive Location Sa	Ath of Canal Bank Rd. 18m
	east of Bird P	a caracter and
	Water Quality Dissolved Oxygen (mg/L) 13.85 C  Water Temperature (°C) 13.85 C  Time in situ measurements taken 12	OH_8_96 Conductivity (μS/cm) 300μs/cm
		Maximum Pool Depth 60 (cm)  Mean Water Depth 60 (cm)  % Pool 8 Run 8 Flat
	Evidence of eroding banks, Comments on ba	
	Substrate (% cover)  Bedrock Cobble	
	BedrockCobble_ Boulder Gravel	SandSiltO_Muck SO_ClayMarlSO_Detritus
	OOJO, ASh, Will	
	Adjacent Land Use	shlot
	Fish Habitat Potential	
	Critical Habitat (spawning or nursery areas, gr	roundwater unwellings)
	Spaunina, nu	
·	Migratory Obstructions (seasonal, permanent)	
	Note any fish observationshuge Sch	100 Of shiners
ı	Waterbody Notes Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugout	
-	Other Habitat Notes, Incidental Wildlife Obs	servations, etc. hundreds of shiners
F	Field Notes Authored by Field	Notes QA/QCed by

Bush lot ag. Field Bushlot 多 REA! RIMOHY



REA

Station # RITO 4 S - I Watercourse Name In Known Photos O FO Date A STATE OF THE ST	Project Name Niagara Wind Project # 16.0950269 Field Staff Le + MF Time 11:43 Carrage Cast  N 4748406 Datum NAD83 Th of Canal Bank Rd, 500 m Cast
Water Quality	Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m)	Maximum Pool Depth 0.40 (cm)  Mean Water Depth 0.30 (cm)  Pool 100 % Run % Flat  k stability Lable to begetation
Substrate (% cover) BedrockCobbleBoulderGravel  In-water Cover Cover Types Present (circle):	Sand 30 Silt 50 Muck Clay Marl 20 Detritus  Banks Deep Pool Watercress Aquatic Veg Boulder Other
Adjacent Land Use	ninant vegetation, mature or early successional) ag. field.
Fish Habitat Potential Critical Habitat (spawning or nursery areas, growning) Migratory Obstructions (seasonal, permanent)	undwater upwellings)
Note any fish observations Permaneh	
Other Habitat Notes, Incidental Wildlife Obse	nel Grassed Swale Buried Tile Pond Dominated by Aquatic Veg Dry Prvations, etc
1 . a 1	otes QA/QCed by M. Faiella

con a Bank pad pail way bed Briylox setis farm REA (previously) Bush lot buildared REAWaterbody PITTO45-1





Station #	2	Project Name	Migago 1	. \ ` ~ d
Watercourse Name <u>why</u>	naun	Project #	1609 5021	2017 00
Photos		Field Staff	C & ME	3-1
DateApr 19 // 2		Time\		
Weather conditions in previou	s 24 hrs	DIFFE COS		
GPS Coordinates (Zone)	T F ALGE		N 474 8832	Detroit 1 1 2
Descriptive Location 500	no Citta	of Can		
	Bird Road	- A LAN	al Bank A	ed; soom e
Water Quality	- Standinger			
Dissolved Oxygen (mg/L)	pH	Condu	ctivity (uS/cm)	
Water Temperature (°C)		Air Temperature	2 (°C)	
Time in situ measurements tal	čen	, romporator		
Watercourse Dimensions &	Morphology		istan	
Mean Watercourse Width	(m)	Maximum Pool	Depth 20	(cm)
	(m)	Mean Water De	ofth 15	(cm)
% Riffle	` % Po		% Run	(cm) % Flat
Evidence of eroding banks, Co	mments on bank s	4 . 1 . 1114		
	table bunks			
Substrate (% cover)				
Bedrock	Cobble	Sand	_∂O Silt	60 Muck
Boulder	Gravel	Clay	Mar	
In-water Cover Cover Types Present (circle): Overhanging Vegetation	Undercut Ba Voody Debris	nks Deep Po Boulder C	ol Watercress Other	Aquatic Veg
Riparian Cover (% of watercou	rse shaded, domin	ant vegetation, ma	ture or early succ	essional)
Adjacent Lend Hea	grasses 1	<u>'ayly</u>		
	·			
- farm o	<u> </u>			
Fish Habitat Potential				
Critical Habitat (spawning or nu	rsery areas, groun	dwater upwellings)	)	
Migratory Obstructions (season	al, permanent)			
Note any fish observations				
Trote any fish observations	6034 Spanish			
Waterbody Notes				
Natural Watercourse Tr	rangzoidal Channel		-d O1.	Ph. 1 1 mm.
Surficial Drainage (i.e. furrows)	Dugout Pon	d Grasse	ed Swaleed by Aquatic Veg	Buried Tile Drv
Other Habitat Notes, Incidenta				-
Field Notes Authored by K. Clarific	Field Notes	CANCELL WIE	Ex olla	

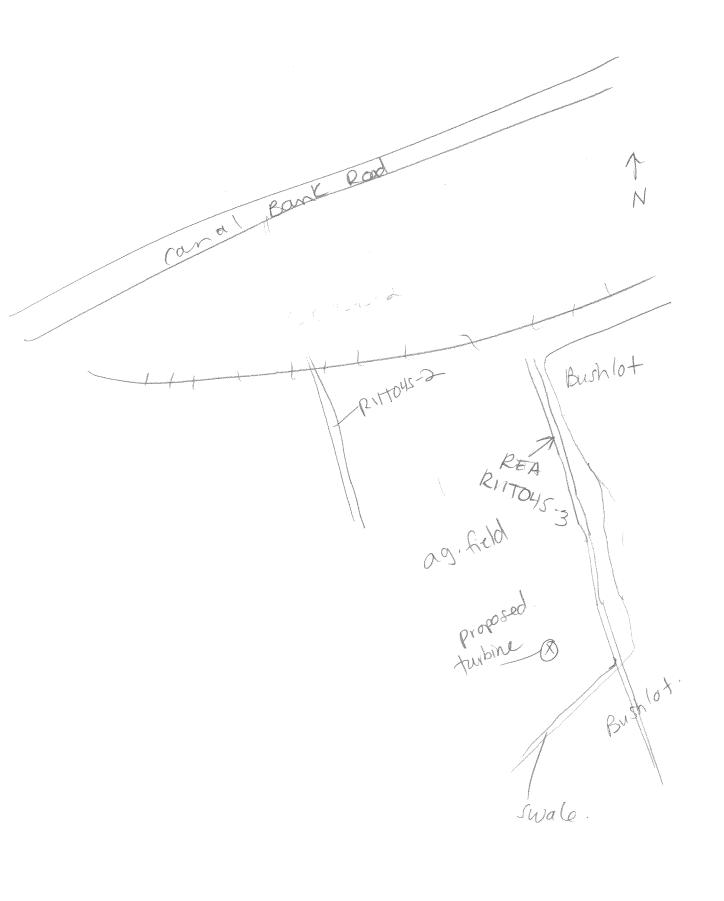
Canal Bank Rd Railbed REA (Previously) water drive it dominated by again buildored Section Bushlot





Stanted

Station # PUTO 45		Project Name _/\	ianara	Wind
Watercourse Name WAY	have	Project #	60950 20	99
Photos	****	Field Staff/		·
Date		Time <u>la :⊘</u> 8		
Weather conditions in previous	24 hrs \@	- overtast		
GPS Coordinates (Zone) 17	1 E0623	blot N	4749128	Datum NAD
Descriptive Location 400	m south o	f Manal B	unc Rel	
Water Quality	dandiat	Kr.		
Dissolved Oxygen (mg/L)	pH_	Conductivi	h. ( Olama)	
Water Temperature (°C)	PII	Conductivi	ιy (μδ/cm)	
Time in situ measurements take	en ·	Air Temperature (°0	J)	
				·
Watercourse Dimensions & N	lorphology			
	<u>) (</u> m)		th&O	(cm)
	<u>△(</u> m)	Mean Water Depth	15	(cm)
% Riffle	% Po	ool <u>  100</u>	% Run	% Flat
Evidence of eroding banks, Cor	nments on bank s	tability		
Substrate (% cover)	<u></u>		* * _	
Bedrock	Cobble	Sand		40 Muck
Boulder	Gravel	Clay	Marl	20 Detritus
Cover Types Present (circle): Overhanging Vegetation W Riparian Zone	oody Debris	Boulder Other	r	Aquatic Veg
Riparian Cover (% of watercours	se shaded, domina	ant vegetation, mature	or early succes	ssional)
Adjacent Land Use	Cattails,	early		
	C. 14	· · · · · · · · · · · · · · · · · · ·		
<u> </u>				
Fish Habitat Potential				
Critical Habitat (spawning or nur	CODY OFFICE OFFICE	dundon i mi i nilla a a		
Charact (opamiling of Hail	Sery areas, ground	awater upweilings)		
Migratory Obstructions (seasona	l permanent)		٠.٠	
and a series of the series of	intermitte	NE OF BEXWAY	- 11T	La but in
Note any fish observations		NII (N PRAIVIUN	1001 100	Tation Very
				- Carried M
				CI
Waterbody Notes		J.		•
latural Watercourse Tra	pezoidal Channel	Grassed S	wale	Ruried Tile
Surficial Drainage (i.e. furrows)_	Dugout Pon		y Aquatic Veg_	Dry
			, , iqualio rog_	Oiy
Other Habitat Notes, Incidental	Wildlife Observa	ations, etc. <u>&amp; 00</u> 5		
		3		
£ -				
eld Notes Authored by K	ž.	OA/OCED by M. Fair		







Station # R 1 T 0 49 - 1		Project Name	iaoa	ra (1	)ind	
Watercourse Name Unknow		Project #_//o				
Photos See Mato low			anter		Fair	Ta .
Date		Time <u> 북한 다 등 </u>	200			
Weather conditions in previous 2	24 hrs Rain	not thun	hid .			
GPS Coordinates (Zone)	T E 0626	974 N 4	1748	779	Datu	m Nade
Descriptive Location	m novities	01 Laleche	~ 2	ood.	. ~3	
of old Railbed	<u> </u>				1	
Water Quality	- howat	CV				
Dissolved Oxygen (mg/L)	pH	Conductivi	tv (uS/cr	n)		
Water Temperature (°C)		Air Temperature (°C				
Time in situ measurements taker	1	· · · · · · · · · · · · · · · · · · ·				
Watercourse Dimensions & Mo	orphology			**Ang		
	(m)	Maximum Pool Dep	th		(cm)	
Mean Bankfull Width	(m).	Mean Water Depth			_(cm)	
% Riffle	~ % Pool				_(((())	% Flat
Evidence of eroding banks, Com			/0 1\u			/0 1 lat
Substrate (% cover)					Han	
Bedrock	Cobble		$\mathcal{O}$	_Silt	40	Muck
Boulder	Gravel	Clay		Mari	10	_Detritus
Cover Types Present (circle): Overhanging Vegetation Wo			Water r ⊊⊖		Aqu (@~-	uatic Veg <u>× ♀)</u>
Riparian Cover (% of watercourse		t vegetation, mature	or early	success	sional)	
Adjacent Land Use	VALE AYEX	S A MANAYA				
Corn field						
Fish Habitat Potential		,				
Critical Habitat (spawning or nurs	ery areas, groundv	rater upwellings)		\a\Q.		
Migratory Obstructions (seasonal,		nursery of	tor ag	<del>~ J-</del>		
Sca					٠	
Note any fish observations						
Waterbody Notes Natural WatercourseTrap Surficial Drainage (i.e. furrows)	pezoidal Channel _ Dugout Pond_	Grassed Sominated b	wale_ y Aquati	B	Juried T	ile
Other Habitat Notes, Incidental V	Wildlife Observati	ons, etc.				
			,			

· warld be great habitat if there was water (ie. inspring); -lots of wordydebris, shaded channel old Rail bed. 1/21/1023 Veldhuizer 2000 Path ake share Road



NON

Stantec		DUG PONT
Station # RILTO5Z   Watercourse Name 5Z-1	Project Name	
Photos 8885 Date June 8. 2017	Field Staff T CHANDLER	M ELLAH
Weather conditions in previous 24 hrsSunny	Time 2:00 PM	
GPS Coordinates (Zone) E 6142  Descriptive Location	259 N 4766482	Datum
Dissolved Oxygen (mg/L) pH	ND Conductivity (μS/cm)	
Water Temperature (°C) Time in situ measurements taken	Air Temperature (°C)	
Watercourse Dimensions & Morphology		
Mean Watercourse Width (m)  Mean Bankfull Width (m)  % Riffle % Po		(cm) (cm) % Fla
Evidence of eroding banks, Comments on banks		
Substrate (% cover)BedrockCobble	SandSilt	
Boulder Gravel	SandSilt_ ClayMar	
Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris		Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, domination	ant vegetation, mature or early succ	essional)
Adjacent Land Use	And the second s	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groun	dwater upwellings)	
Migratory Obstructions (seasonal, permanent)		
Note any fish observations		
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i,e. furrows) Dugout Por		Buried Tile
Other Habitat Notes, Incidental Wildlife Observ	ations, etc.	
Field Notes Authored by TICH ANDLE Field Notes	s QA/QCed by	



NON
REA

Stanted

Station #_BIT057 Watercourse Name_52-2	Project Name NIAGARA WIND Project #
Photos 8886 - 88  Date TUNE 8 2017	Field Staff TCHANDLER M. ELLAH Time 2:05
Weather conditions in previous 24 hrs  GPS Coordinates (Zone) F E 6 14  Descriptive Location	16L N 4766482 Datum
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	M/A Conductivity (μS/cm)//A Air Temperature (°C)25
Watercourse Dimensions & Morphology Mean Watercourse Width	
Substrate (% cover)  Bedrock  Boulder  Gravel  Cover Types Present (circle):  Overhanging Vegetation  Woody Debris	Sand Silt Muck Clay Marl Detritus  Banks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dominated and Use  A GRICULTURAL FIEL	inant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds)	
Migratory Obstructions (seasonal, permanent) Note any fish observations	
	nel Grassed Swale Buried Tile ond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obser	rvations, etc
Field Notes Authored by CHANDLER Field Not	tes QA/QCed by



NON

Station # RUTO 52		Name NIAGARA	WIND
Watercourse Name 52-3		# <u>160950269</u>	
Photos 8889	_ Field S	taff TCHANDLER	M ELLAH
Date JUNE 8 2012	Time _2	2.72	
Weather conditions in previous 24 hrs	6,4977	N /1-7//231	5-1
` / / <del> </del>	6/4366	N 4766321	Datum
Descriptive Location			
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	pHAir Tem	Conductivity (µS/cm)	
7			······································
Watercourse Dimensions & Morphology Mean Watercourse Width(m)	Maximu	ım Dool Dorith	()
Mean Bankfull Width (m)		um Pool Depth Vater Depth	(cm)
/	% Pool	% Run	(cm) % Flat
Evidence of eroding banks, Comments on ba	<b>■</b> P	//o muii	
Substrate (% cover)		and the same of th	
, · · · · · · · · · · · · · · · · · · ·		Sand Silt	Muck
Boulder Gravel		Clay Ma	
, /			- D Ottitudo
In-water Cover	/		
		Deep Pool Watercress	s Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder	Other	
Riparian Zone	-		
Riparian Cover (% of watercourse shaded, d	ominant vegeta	ation, mature or early succ	cessional)
		~	
Adjacent Land Use			
PLOUGHED ARI FIELD			
Fish Habitat Potential			
Critical Habitat (spawning or nursery areas, g	groundwater up	wellings)	
Migratory Obstructions (seasonal, permanen	rt)		
Note any fish observations			
Note any non-observations			
Wotorbody Notes	1	/	
Waterbody Notes		Oversed Overla	D. 20171 8
Natural Watercourse Trapezoidal Ch		Grassed Swale	Buried Tile V
Surficial Drainage (i.e. furrows) Dugou	ut Pond_/	Dominated by Aquatic Ve	eg Dry
Other Habitat Notes, Incidental Wildlife Ol	servations el	tc.	
Field Notes Authored by T. C. HANDLER	14 Notes - 04 (00 - 11	NR	



NON

Stantec

Station #_ R 11 To 52		Project Name	NIAGARA	WIND
Watercourse Name 52-4		Project #1609		<u> </u>
Photos 8890			CHANDLER	M ELLAH
Date SUNF 9, 7017		Time 2.20	M	11 8-6/17
Weather conditions in previous	24 hrs		<u> </u>	
GPS Coordinates (Zone)	E 6(44	72 N	4766319	Datum
Descriptive Location	<del></del>		4100-11	Datum
Water Quality DRY -	THEF	7		
Dissolved Oxygen (mg/L)	pH	Condin	stinited ( Clam)	
Water Temperature (°C)	PII_	Conduc	μο/ciii)	
Time in situ measurements take	an /	Air remperature	P(10)	
Watercourse Dimensions & M	lorphology	4		
Mean Watercourse Width		Maximum Pool I	epth	(cm)
Mean Bankfull Width	(m)		oth	(cm)
% Biffle	% Po	ool	% Run	% Flat
Evidence of eroding banks, Cor	nments on bank s	tability		paren.
Substrate (% cover)	/			
Bedrock	Cobble	Sand	Silt	Muck
Boulder	Gravel		Mar	
				Dountdo
to hair Dong	· · · · · · · · · · · · · ·			
Cover Types Present (circle):	Undercut Ba	inks Deep Poo	the state of the s	Aquatic Veg
Overhanging Vegetation W	oody Debris	Boulder O	ther	
Riparian Zone				
Riparian Cover (% of watercours	se shaded, domin	ant vegetation, mat	ure or early succ	essional)
		<u> </u>		
Adjacent Land Use	~ ~ ~	b and Mr.		
- Poutelt	20 AGR	L. FIELD		
PT -1-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-				
Fish Habitat Potential				
Critical Habitat (spawning or nur	sery areas, groun	dwater upwellings)		
Migratory Obstructions (seasona	l nermanent)			
ALA PLAN	ii, permanent)			
Note any fish-observations	/			-
	<del></del>			
		/		
Waterbody Notes		. / .		
	apezoidal Channe		d Swale	Burjed Tile
Surficial Drainage (i.e. furrows)	Dugout Por	nd_/ Dominate	ed by Aquatic Ve	Dry
Other Habitat Notes Incidente	l Wildlife Observ	ations at O		
Other Habitat Notes, Incidenta	i whalle Observ	auons, etc.		
6 4.10	r.0			
Field Notes Authored by CHONDI	べい Field Notes	s QA/QCed by	4	



1	VR	01	N	1	
<u> </u>	1		-	-	سرد

Station # RITO 52	Project Nam	_	- WIND
Watercourse Name 5 2 - 5 Photos 8891 92		50950269 TCHANDLER	M ELLAH
Date JUNE 8, 2017 Weather conditions in previous 24 hrs Cloudy GPS Coordinates (Zone) TE 6/4 Descriptive Location	Time 2:3 operiods, sun 295	N 476 6060	Datum
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	I Cor Air Tempera	nductivity (μS/cm) ture (°C) _25	
Mean Watercourse Width(m) Mean Bankfull Width(m)	Maximum Po Mean Water Pool stability		(cm) (cm) % Fla
Substrate (% cover)  Bedrock Cobble Boulder Gravel	Sand_ Clay_		
In-water Cover Covering Covernment (circle): Underput to Overhanging Vegetation Woody Debris		Pool Watercress Other	Aquatic-Veg
Riparian Zone Riparian Cover (% of watercourse shaded, dom	inant vegetation,	mature or early succ	essional)
Adjacent Land Use	AL FIE	= 42	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds)	undwater upwellin	gs)	
Migratory Obstructions (seasonal, permanent)			
Note any fish observations			
Waterbody Notes  Natural Watercourse Trapezoidal Chanr Surficial Drainage (i.e. furrows) Dugout Po		ssed Swale nated by Aquatic Veg	Buried Tile
Other Habitat Notes, Incidental Wildlife Obser	rvations, etc		
		/	
Field Notes Authored by TICH ANDLER Field No	tes QA/QCed by/\dagged	R	



Sta	ntec

Station #_RITO 52	Project Name NIAGARA WIND
Watercourse Name 52-6	Project #_160950769
Photos <u>8893 - 94</u> Date <u>JUNE 8, 2012</u>	Field Staff TCHANDLER MELLAH
	Time 2:45
Weather conditions in previous 24 hrs Shape GPS Coordinates (Zone) F 6 14 4 9 2	
Descriptive Location	N 4766082 Datum
Water Quality DRI- TILED	
Dissolved Oxygen (mg/L) pH	Conductivity (µS/cm)
Water Temperature (°C) Time in situ measurements taken	Air Temperature (°C) 25
Watercourse Dimensions & Morphology	
Mean Watercourse Width(m)	Maximum Pool Donth
Mean Bankfull Width (m)	Maximum Pool Depth(cm) Mean Water Depth(cm)
% Riffle % Poo	Mean Water Depth(cm)    Kan% Run % Flat
Evidence of eroding banks, Comments on bank sta	
Substrate (% cover)	
BedrockCobble	SandSiltMuck
BoulderGravel	Clay Marl Detritus
inensitur Cover DRY	
Cover Types Present (circle): Undercut Bank	O Defe Deal Work of the Work
• • • • • • • • • • • • • • • • • • •	
<i>«</i> .	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominan	t vegetation, mature or early successional)
Adjacent Land Use	
CORN FIELD	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, groundy	vater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes DM	
Natural Watercourse Trapezoidal Channel	Grassed Swale Buried Tile
Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatic Veg Dry
	Bonnatod by Addatic Veg Bry
Other Habitat Notes, Incidental Wildlife Observat	ions, etc.
Field Notes Authored by ACHANDUR Field Notes Q	A/QCed by

tile#a9



## WIND FARM WATERBODY RAPID ASSESSMENT FORM

NO

Station #_RUTOS4	Project Name N	igara Wine	<u>d</u>
Watercourse Name Unknown	Project #/_O_9 Field StaffC_a	50269	i a
Photos Date	Field Staff <u>K. Clau</u>	ton Mitaie	\U.
Date	Time		
Weather conditions in previous 24 hrs	thumid	D-4	
GPS Coordinates (700A)	N	Dat	
Descriptive Location	Vaughn Roa		
Water Quality Dissolved Oxygen (mg/L) pH_ Water Temperature (°C) Time in situ measurements taken	Conductivity Air Temperature (°C)	(μS/cm)	
Watercourse Dimensions & Morphology Mean Watercourse Width (m)	Maximum Pool Depth	(cm	n) n)
Evidence of eroding banks, Comments on bank s	tability		
Substrate (% cover)			
Bedrock Cobble Cobble	Sand	Silt	Muck
Boulder Gravel	Clay	Marl	Detritus
In-water Cover Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domin	Boulder Other_		
Adjacent Land Use			
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ndwater upweilings)		
Migratory Obstructions (seasonal, permanent)			
Note any fish observations			
Waterbody Notes  Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Por			od Tile
Other Habitat Notes, Incidental Wildlife Observed hald eagle calling	in butlet acre	coun field	from
Field Notes Authored by K.C.aut. Field Note	es QA/QCed by		





Station # RII TOSS		Project Name	Niagard (	wind	
Watercourse Name unkn	aun	Project #		69	
. Photos		Field Staff	Clayten	M' Fairlld	
Date Apr 5 //2.		Time 12:	20 000		
Weather conditions in previous		SUMMU	<b>}</b>		
GPS Coordinates (Zone)	I E DOD	3 ST X	N 47/243	Fa Datum Na	オダ
Descriptive Location	m nath	Of Elcho	Road	· Vm each	<u> </u>
- ot Region	nal Rdi	<u> </u>			
Water Quality		_			<u></u>
Dissolved Oxygen (mg/L)	<u>.0</u> → pH	8.45 Cond	uctivity (μS/cm) _	345	
Water Temperature (°C)	· C				
Time in situ measurements take	en <u>(2:3)</u>				
Watercourse Dimensions & M	orphology				
Mean Watercourse Width	(o() (m)	Maximum Poo	l Depth	(cm)	
Mean Bankfull Width	(m)	Mean Water D	enth A	<u>S</u> (cm)	
% Riffle	% Po		(//) % Run		Flat
Evidence of eroding banks, Con	ments on bank st		VCare		
	Riparian	Vealta	ha	Hable trav	
Substrate (% cover)		V			
Bedrock	Cobble	Sand_	1100	MA	
Boulder	Gravel	Salid_ Clay	<u>(1)</u>	iltMuck	
*	OidVei	Clay		arl Detrit	us
In-water Cover				·	
Cover Types Present (circle):	Undercut Bar	nks Deep F	ool Watercre	ss Aquatic Ve	
Overhanging Vegetation Wo	oody Debris	Boulder	Other	os Aduatic Ac	9
			<del></del>		-
Riparian Zone					
Riparian Cover (% of watercours	e shaded, domina	int vegetation, m	ature or early su	ccessional)	
<u> </u>	grasses, e	'arly			
Adjacent Land Use	n.				
	mand				
Plat Hattan Barana					
Fish Habitat Potential					
Critical Habitat (spawning or nurs			s) 🦳		
Migratory Obstructions (access	awning, 1	Dursery	, toragin	<u> </u>	
Migratory Obstructions (seasona	i, permanent)	F			
Note any fish observations	and the second s				
Waterbody Notes					
	nozoidal Channel	A			
	pezoidal Channel		sed Swale	Buried Tile	
		d Domine	ited by Aquatic V	eg Dry_	
Cumolai Dialilage (i.e. lullows)	Dugout Pon	u Domina	ioa by Aquatio V	cg Dry	
			od winn	back hide	
			ed wing	black birds	<del>-</del>
			ed wing	black birds	
Surficial Drainage (i.e. furrows) Other Habitat Notes, Incidental			ed wing	black hirds	
Other Habitat Notes, Incidental			ed wing	black hirds	





NOT

WIND FARM WATERBODY RAPID ASSESSMENT FOR	M A RE
Stantec	7 KE
Station #RI/T056H Watercourse Name 56H-1 Project Name NIAGARA Project #160950269 Photos 7847 - 49 Date Tune 7 2012 Weather conditions in previous 24 hrs GPS Coordinates (Zone) 17T E 626273 N 4769267 Descriptive Location	Hah
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C)  Time in situ measurements taken  PH  MA  Conductivity (μS/cm)  Air Temperature (°C)  20	
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) Mean Water Depth Wean	(cm)
Substrate (% cover) BedrockCobbleSandSiltBoulderGravelClayMarl  In-water Cover	MuckDetritus  Aquatic Veg
Riparian Zone Scrub Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early success	sional)
Adjacent Land Use Agricultural Geld- planted in crops:	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)	
Migratory Obstructions (seasonal, permanent)	
Note any fish observations _ ん ਹ	

**Waterbody Notes** Grassed Swale_ Natural Watercourse____ Trapezoidal Charinel Buried Tile_ Surficial Drainage (i.e. furrows) _____ Dugout Pond_ Dominated by Aquatic Veg Other Habitat Notes, Incidental Wildlife Observations, etc. Field Notes Authored by Field Notes QA/QCed by



NOT	RES
-----	-----

4		Not REA
WIND FARM WATERBOD	Y RAPID ASSESSMEN	T FORM RITOS
Stantec		tile 46
Station # R   105 7 Watercourse Name Photos Date 100 2 20 (2)	Project Name Naga Project # 160950 Field Staff X + 3 X Time A LUPON	ra Wind Figure
Weather conditions in previous 24 hrs Fam GPS Coordinates (Zone) E GAS Descriptive Location	140 N 476 - South of Ra	808Datum Hacks
Water Quality Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/c	
Watercourse Dimensions & Morphology  Mean Watercourse Width(m)  Mean Bankfull Width(m) % Riffle% Pool  Evidence of eroding banks, Comments on bank sta		(cm) (cm) un% Flat
Substrate (% cover)  Bedrock Cobble  Boulder Gravel	SandClay	SiltMuck MarlDetritus
In-water Cover Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris	ks Deep Pool Wate Boulder Other	
Riparian Zone Riparian Cover (% of watercourse shaded, domina	nt vegetation, mature or early	y successional)
Adjacent Land Use		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	water upwellings)	
Migratory Obstructions (seasonal, permanent)	. \	•
Note any fish observations		
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale  Dominated by Aqua	<del></del>
Other Habitat Notes, Incidental Wildlife Observa	tions, etc.	haal
- ATT Figure at back of sec	and property re	or twone
Field Notes Authored by Field Notes (	DAYQCed by Joe Marel	
W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\S	Stantec\Form 02 Wind Farm Waterbody	Rapid Assessment Form.doc



parameter.	T058

Station # Plant 1000 Miles	Project Name Nic		d
Watercourse Name	Project #	50269	
Photos See log	Field Staff K	- JK	
Date	Time		
Weather conditions in previous 24 hrs		E control of a control	
GPS Coordinates (Zone) E 028	<u> 432 N (</u>	<u> 17675220</u>	atum
Descriptive Location 600 4 6 6 6	CK)WAT KI	DURLARY	
apprend 800 m south	- A FIRA		
Water Quality Mostly day or	too little	rayer to	sample
Dissolved Oxygen (mg/L) pH		(μS/cm)	
Water Temperature (°C)	Air Temperature (°C)		
Time in situ measurements taken	The day of the state of the sta		
Watercourse Dimensions & Morphology			*
Mean Watercourse Width () (m)	Maximum Pool Depth	(cr	$n$ ) $d \wedge d$
Mean Bankfull Width (m)	Mean Water Depth	· · · · · · · · · · · · · · · · · · ·	• / / ~/ /
% Riffle % Poo	•	% Run	% Flat
Evidence of eroding banks, Comments on bank sta	- Aller Control of the Control of th		
Linds of Ground Parists, Comments of the Comme	•		
Substanta (% sough)			
Substrate (% cover)  Bedrock Cobble	Sand	Silt	Muck
Boulder Gravel	Clay	Mari	Detritus
Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominar Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds)	1 O.T.	r early succession	al)
INDIA () Z	3,		
Migratory Obstructions (seasonal, permanent)			•
Migratory Obstructions (seasonal, permanent)			•
MINU			
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Surficial Drainage (i.e. furrows)  Dugout Pond	Grassed Swa	***************************************	ed Tile
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Surficial Drainage (i.e. furrows)  Dugout Pond	Grassed Swa	***************************************	
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Surficial Drainage (i.e. furrows) Dugout Pond  Other Habitat Notes, Incidental Wildlife Observations	Grassed Swa	***************************************	

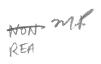
- shallow, narrow defined channel along back edge of Add - 100ses definition definition + ploughed through in adjacent Rield Ploughed - BOBOUNK Observed in my Reld ~ 10-20.



NON outside
REA wood!
REA wood!

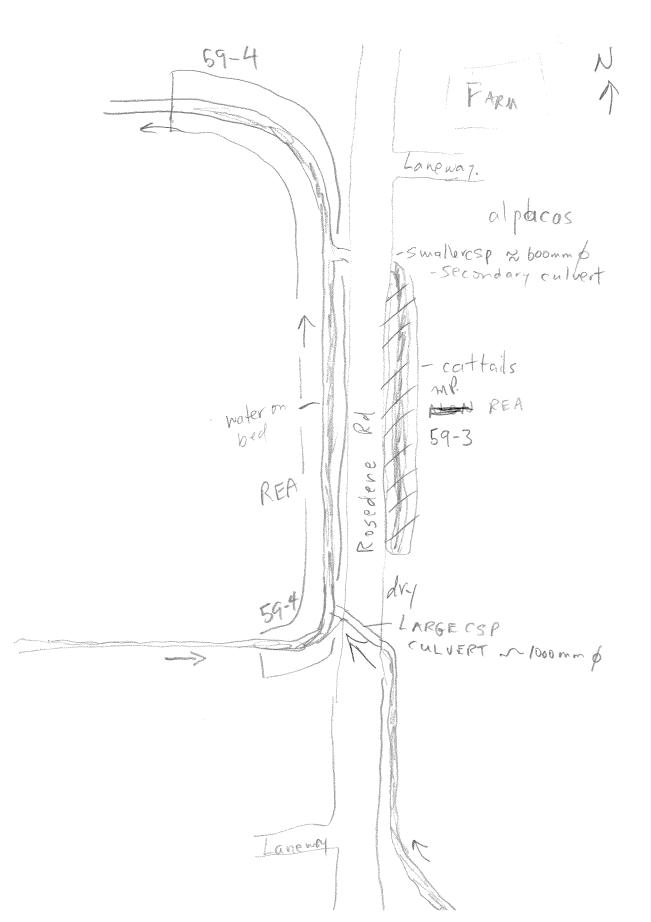
Station #	Project Name NIAGARA WIND
Watercourse Name 59 2	Project # 16 0 9 50 269
Photos 8828-29 Date Jule 7, 2012	Field Staff Tchandler M EllAH
Weather conditions in previous 24 hrs	Time 2125 PM
GPS Coordinates (Zone) 17 E 62.992	0 N 4767524 Datum
Descriptive Location	Datum
Water Quality DRY	
Dissolved Oxygen (mg/L) pH	Conductivity (µS/cm)
Water Temperature (°C)	Air Temperature (°C) 25
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width Nowater (m)	Maximum Pool Depth (cm)
Mean Bankfull Width ~ 2 (m)	Mean Water Depth (cm)
% Riffle% Poo	ol% Run% Flat
Evidence of eroding banks, Comments on bank sta	ibility Roorly defined smale us
of wood lot - defined channel in	woodlot
Substrate (% cover)	
BedrockCobble	SandSiltMuck
BoulderGravel	Clay Marl Detritus
In-water Cover NA MATER  Cover Types Present (circle): Undercut Ban  Overhanging Vegetation Woody Debris	ks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominar	at vegetation, mature or early successional)
No water couse us quoullot; loo;	to vegetation, mature of early successionary
Adjacent Land OSE	
Hayfield up wood st; words	- Control of the Cont
· · · · · · · · · · · · · · · · · · ·	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	water upweilings)
Migratory Obstructions (seasonal, permanent)	
There any non-observations	
Waterhody Notes	
Waterbody Notes Natural Waterpourse Transpoidal Channel	Grand Swale Duried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale Buried Tile  J Dominated by Aquatic Veg Dry
Dagour Fond	
Other Habitat Notes, Incidental Wildlife Observa	tions, etc. Bobolinks in area.
~ ^( /	A
Field Notes Authored by Field Notes (	QA/QCed by





Station #_RITO 59 Watercourse Name 59-3 Photos 5833 8830 Date	Project Name NIAGARA WIND Project #_160950269 Field Staff Tichander M Ellah Time 2:45  N 4767449 Datum
Descriptive Location	
Water Quality   Solated pool at disend   Dissolved Oxygen (mg/L)   1.74   pH 7   Water Temperature (°C)   21.66   Time in situ measurements taken   2.45 PM	8 CSPaulverta Rosedene Rd. 179 Conductivity (µS/cm) 4380 Air Temperature (°C) 27
Watercourse Dimensions & Morphology  Mean Watercourse Width (m)  Mean Bankfull Width 2-3 (m)  ———————————————————————————————————	Maximum Pool Depth (cm)  Mean Water Depth (cm)  White Run Flat
Substrate (% cover) BedrockCobble BoulderGravel	Sand 100 Silt Muck Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris	ks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dominar	
Adjacent Land Use	d (to west)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground)	
Migratory Obstructions (seasonal, permanent)  Asymptotic perched cultures.  Note any fish observations	t at Rosedone Rd. ~10cm
Waterbody Notes — Intermitted Woderbo Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observat	ions, etc
Field Notes Authored by M. Ella W. Field Notes C	DA/OCed by AR

RILTO 59 59-3





#### Stantec

Station #_ RIOT59	Project Name: NIAGARA WIND
Watercourse Name 59 - 4 Photos 283 - 32, 34,35,36	Project #: \\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \
Date June 7, 7012	Field Staff T, Chandlor, M Ellah
Weather conditions in previous 24 hrs. The state of the s	Time 2:55 or showers previous evening, then sunny
GPS Coordinates (Zone) 77 E A2 9	274 N 476 7433 Datum
Descriptive Location	ZIT NT16/135 Datum
Water Quality	
Dissolved Oxygen (mg/L) 5.00 pH	8.17 Conductivity (µS/cm) 4062
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken 3:00 PM	7
Watercourse Dimensions & Morphology	Maximum Pool Depth 20 (cm) Mean Water Depth 5 (cm)
Mean Watercourse Width(m)	Maximum Pool Depth 20 (cm)
Mean Bankfull Width 2,5 (m)	Mean Water Depth (cm)
% RITTIE% F	ool% Run% Flat
Evidence of eroding banks, Comments on bank	stability Evidence y winds louse!
50mr.	V
Substrate (% cover)	
BedrockCobble	Sand Silt Muck Clay Marl Detritus
BoulderGravel	Clay Marl Detritus
In-water Cover	minde
Cover Types Present (circle): Undercut B	anks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, domi	nant vegetation, mature or early successional)
70%- grass, parly	main regulation, mature of early successional
Adjacent Land Dec	
Road to east posture thay field	to west of drainage teature
	0
Fish Habitat Potential Critical Habitat (spawning or purson) areas	make a decrease of the second
Critical Habitat (spawning or nursery areas, grou	nawater upweilings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Waterbody Notes	
Natural Watercourse Transzoidal Chann	el Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Po	ond Dominated by Aquatic Voq. Dr.
	i i
Other Habitat Notes, Incidental Wildlife Obser	vations, etc. In frmittent channel almo
roadside ditchi Latsy Water	, No evidence & flow.
very slight Clark evidant.	, 0
Field Notes Authored by T. Chandler Field Not	res QA/QCed by

Tiles4 REA



		$-v_1/2v_2/v_1$	I F Y Y Y			
Other Habi	tat Notes, incidental	Wildlife Observ				
		pezoidal Channe Dugout Por		rassed Swale_ ninated by Aqu		l Tile Dry
Note any fis	sh observations	· ·				
-	Obstructions (seasona sh observations	I, permanent) ————————————————————————————————————	nent.		•	
Critical Hab		MILLY SEVY	- ₹ ° ·	lings)	M-10-11-11-11-11-11-11-11-11-11-11-11-11-	
Adjacent La	farmlas	<u>.</u>		/	f	***************************************
	over (% of watercours	se shaded, domin	nant vegetation	n, mature or ea	irty successiona	l) 
	es Present (circle):	Undercut Ba body Debris	THE PARTY OF THE P	ep Pool Wa Other	tercress	quatic Veg
	Boulder	Gravel	Cla		Mari	Detritus
Substrate	( <b>% cover</b> ) Bedrock	Cobble	Sar	nd 40	silt (C	Muck
Evidence o	of eroding banks, Con			i. My.cta	ble - 10+	50f
	ercourse Width 2 kfull Width 3.5 % Riffle	(m) (m) ⁻ % P	Mean Wate		<u>○                                    </u>	')
	rse Dimensions & M				1 - Jen Ir	Speld entra
Water Ten	nperature (°C) 22	26	Air Tempe	rature (°C)	27°C	
Water Qua	ality Oxygen (mg/L) <u>3.5</u>	≶ \ DH	7.66 c	onductivity (µS	(/cm) <u>535</u>	
Descriptive	e Location <u>~80</u>	month	OF L	are the	् १८०६त	
Weather c	conditions in previous rdinates (Zone)	24 hrs	100-Feb	numid N 474	12294 Da	tum Nada?
Date Jun	<u> </u>		Time	1:50		
	See Walls lock		Field Staff	12 Claute	n M.Faiell	<u>a ·</u>

1

ag field ag feld REA-061-1 GE Riparian March ) Sanle mature trees, but mostly grasses. ag. Feld/car as feld/ Barrick's Yellanshed Laceshare



Station #	22-14	Project Name			d enre
Watercourse Name		Project #/	0950		
Photos See photo log		Field Staff	- clay-to	M, M, F	arella.
Date June 193		Time 10°	43		
Weather conditions in previous		n hot to	aumid,		
GPS Coordinates (Zone)		1902	N 4751	7 28	<u>itum Nac</u>
Descriptive Location	<u> </u>	+ 0.4 4	<u>uneria</u>	( CORO	
Water Quality					
Dissolved Oxygen (mg/L)	pH_	Condi	uctivity (µS/cr	m)	
Water Temperature (°C)		Air Temperatu	re (°C) "🙈 🔻	,	
Time in situ measurements tak	en	•			
Watercourse Dimensions & Mean Watercourse Width		Maximum Poo	I Denth	60 (cn	a)
	(m) [.]	Mean Water D			•
% Riffle					") % Fla
Evidence of eroding banks, Co			de ine	getat	
Substrate (% cover)					·
Bedrock	Cobble	Sand	4/0	Silt 10	Muck
Boulder	Gravel	Clay_	<u> </u>	Marl	Detritus
Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercounts)	Voody Debris		Otherature or early	successiona	
Adjacent Land Use	and.		<del> </del>		
Fish Habitat Potential					
Critical Habitat (spawning or nu	reery areas aroun	twater unweilings	٠)		
	NO Seal				
Migratory Obstructions (season					
Note any fish observations	_{SSO(BS} HHPOLL				
Waterbody Notes			***************************************		
Natural Watercourse Tr	apezoidal Channel	Grass	ed Swale	Rurie	d Tile
Surficial Drainage (i.e. furrows)			ted by Aquation		Dry
Other Habitat Notes, Incidenta	al Wildlife Observa	ations, etc		,	
f s					
Field Notes Authored by K.Claufo	Field Notes	QA/QCed by			

buchlot REP. 1062-1 Tag. feld 6/92. as fild war in channel toolay, reading. catais. * very hith catails smalls Road 06225134751621



		Droiget Name	· ( ) · ·	
Station # R \ \ TO 65 - Watercourse Name		Project Name	agara wir	<u>\</u>
		Project #/_O	150269	
Photos 52/3 Date June 13 201		Field Staff	<del></del>	
	24 bro	Time	2 pm	
Weather conditions in previous		200	1 mg/ m / 1 cm mg/ m	
GPS Coordinates (Zone)		3340 N	175 4876 D	atum
Descriptive Location along		Dunnille W	a1161664	Just
Water Quality				
Dissolved Oxygen (mg/L)	8U nH	8,30 Conductivity	VIVSION 70	***
Water Temperature (°C)	<del>2</del> . 11	Air Temperature (°C	y (μολοπή <u>/ / 6</u>	
Time in situ measurements tak				
Time in situ measurements tak	AII 1 (2/ ( / ~	- Process		
Watercourse Dimensions & Mean Watercourse Width Mean Bankfull Width  Riffle Evidence of eroding banks, Co	3.5 (m) 5 (m) 100% P			m) m) % Fla
sleep, but sta	ale + ve	wared.		
Substrate (% cover)	4	/		
Bedrock	Cobble	⁴ ∅ Sand	Silt	Muck
Boulder	Gravel	Clay	Sit	Detritus
In-water Cover Cover Types Present (circle): Overhanging Vegetation W			Watercress	Aquatic Veg
Riparian Zone Riparian Cover (% of watercour	rse shaded, domir	nant vegetation, mature	or early succession	nal)
Adjacent Land Use	, 000	*Wiac + Siat	4 - Priva	<del>/                                    </del>
Ag-com 4			ř.	***
	<del>-                                    </del>			
Fish Habitat Potential				
Critical Habitat (spawning or nul	rsery areas, grour	ndwater upwellings)		
VIV.				
Migratory Obstructions (seasona	al. permanent)			
Migratory Obstructions (seasons	al, permanent)			
permanent	al, permanent)			
Note any fish observations	al, permanent)			
Note any fish observations Waterbody Notes				
Note any fish observations  Waterbody Notes Natural Watercourse Tra	apezoidal Channe		raleBurie	ed Tile
Note any fish observations  Waterbody Notes Natural Watercourse Tra	apezoidal Channe		rale Burie	ed Tile
Note any fish observations  Waterbody Notes  Natural Watercourse Tra  Surficial Drainage (i.e. furrows)	apezoidal Channe Dugout Poi	nd Dominated by		
Note any fish observations  Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incidenta	apezoidal Channe Dugout Poi	nd Dominated by ations, etc		
Note any fish observations  Waterbody Notes  Natural Watercourse Tra  Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incidenta	apezoidal Channe Dugout Poi	ations, etc.		***************************************
Note any fish observations  Waterbody Notes  Natural Watercourse Tra  Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incidenta	apezoidal Channe Dugout Poi	ations, etc.		***************************************
Note any fish observations  Waterbody Notes  Natural Watercourse Tra  Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incidenta	apezoidal Channe Dugout Poi	ations, etc.		***************************************
Note any fish observations  Waterbody Notes  Natural Watercourse Tra  Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incidenta	apezoidal Channe Dugout Poi al Wildlife Observ	ations, etc.		

Bush lot (0/0



REA

Station #	Project Name Nia gava Index Project # 100950269 Field Staff Time 3:16  20444 N 4756980 Datum JAP8  of Crare Rd Cong North of
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken	H Conductivity (μS/cm) Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m)	Mean Water Depth S (cm) Pool Run % Flat
Substrate (% cover) BedrockCobbleBoulderGravel  In-water Cover Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris	Sand SO Silt SO Muck Clay Marl Detritus  Banks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dor Adjacent Land Use  Farm land	minant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, growth) Migratory Obstructions (seasonal, permanent) Note any fish observations	oundwater upwellings)
Waterbody Notes Natural Watercourse Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F Other Habitat Notes, Incidental Wildlife Obse	Pond Dominated by Aquatic Veg Dry
Field Notes Authored by Field N	otes QA/QCed by

Bushlot ag. field. Durbine DERKOTA! 0 haftstede farm GORE ROAD



Station # RIV TO 76		Project Name Nic	laara Wir	d		
Watercourse Name UNKNOWN		Project #/_009	50269			
Photos		Field Staff				
Photos Date June 12 201	7 .	Time <u>4 / 50</u>				
Monther conditions in provious 24 t	are 100 L 10					
GPS Coordinates (Zone)	E 6235	Da N 4	16588 D	atum		
GPS Coordinates (Zone)  Descriptive Location	Vaughan fd.					
•	<u> </u>					
Western Consiller						
Water Quality	<b>"</b> Ц	Conductivity	(Slom)			
Dissolved Oxygen (mg/L)		Conductivity (				
Water Temperature (°C)		Air Temperature (°C)				
Time in situ measurements taken_						
Watercourse Dimensions & Morp	hology					
Mean Watercourse Width		Maximum Pool Depth	(c	m)		
Mean Bankfull Width		Mean Water Depth	(c	m)		
% Riffle	% Pool		% Run	% Flat		
Evidence of eroding banks, Comme	nts on bank stab	ility /				
Substanta (9) seven			*			
Substrate (% cover)	Cobble	Sand	Silt	Muck		
Bedrock	Gravel	Clay	Marl	Detritus		
Boulder	_Giavei	Clay	141611			
In-water Cover	X					
Cover Types Present (circle):	Undercut Banks	Deep Pool	Watercress	Aquatic Veg		
Overhanging Vegetation Wood	y Debris 🔷 🔪 f	Boulder Other				
	`/					
Riparian Zone	(			· al\		
Riparian Cover (% of watercourse s	nageg, gominant	vegetation, mature or	early succession	idi)		
Adjacent Land Use						
Aujacent Land Ose						
Fish Habitat Potential						
Critical Habitat (spawning or nursery	vareas, groundw	ater upwellings)	•			
Simon rabinat (spanning or rabination)	,					
Migratory Obstructions (seasonal, po	ermanent)					
/	•			•		
Note any fish observations						
		Ţ.				
Waterbody Notes		0	In Division	ad Tila		
	zoidal Channel	Grassed Swa		ed Tile		
Surficial Drainage (i.e. furrows)	_ Dugout Pond_	Dominated by	Aquatic veg	_ Dry		
	ildiide Observed	ana ata				
Other Habitat Notes, Incidental Wi	idille Observation	ons, etc.				
- low lung woodan		. A land a manual !!	the state of the s	0		
1010 (IV) - CONTRACTOR		u Minimal	<u>Jurnora</u>	<u> </u>		
dra bay 10to		u minimal	Surnoa			
- NO OLDER WELL		y minimal	Junea			
Field Notes Authored by		A Anne	Surnora			



			nasadi "	1	-J-	partie.	
>	1	1	angenes.	***************************************	C	1000	ĺ

Station # KITO 18 M	Project Name Niagara Wind				
Watercourse Name	Project # 160950269 Field Staff				
Photos See log					
Date JIME 12 2017	Time 4 pm.				
Weather conditions in previous 24 hrs	<u> </u>				
GPS Coordinates (Zone) 7 E 436	N 476505 Datum				
Descriptive Location Vanglan Kd., 800m	west of Boyle Rd. or South side.				
Water Quality Dissolved Oxygen (mg/L) pH	Conductivity (µS/cm)				
Water Temperature (°C)	Air Temperature (°C)				
Time in situ measurements taken	All Telliperature (C)				
Watercourse Dimensions & Morphology					
Mean Watercourse Width (m)	Maximum Pool Depth (cm)				
Mean Bankfull Width (m)	Mean Water Depth (cm)	ë.			
	and the second s	6 Fla			
Evidence of eroding banks, Comments on bank					
Substrate (9/ count)					
Substrate (% cover)  Bedrock Cobble	Sand Silt Mu	-l-			
Boulder Gravel		itus			
OutrelGraver	Clay Man Del	ilus			
Overhanging Vegetation Woody Debris  Riparian Zone  Riparian Cover (% of watercourse shaded, domin					
Adjacent Land Use					
Fish Habitat Potentlal					
Critical Habitat (spawning or nursery areas, grou	undwater upwellings)				
Migratory Obstructions (seasonal, permanent)					
Note any fish observations					
nore	,				
Waterbody Notes	`				
Natural Watercourse Trapezoidal Channe	nel Grassed Swale Buried Tile				
Surficial Drainage (i.e. furrows) Dugout Po					
Other Habitat Notes, Incidental Wildlife Obser	nyatione atc				
- oused mannel -dy	vadons, etc.				
	-				
	1				
Field Notes Authored by 🐰	les QA/QCed by				
Milyana yang latamat lata and Teamer Agy atta Pagay yang Slaid Shaet	v .				



# WIND FARM WATERBODY RAPID ASSESSMENT FORM RITO 78 H

Station #	Project Name Niagara Wind Project #_160950269 Field Staff KE + JK Time 3:50 pm
Water Quality Dissolved Oxygen (mg/L)pH Water Temperature (°C) Time in situ measurements taken	Conductivity (µS/cm)  Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m)  % Riffle % Pool Evidence of eroding banks, Comments on bank sta	
Substrate (% cover) BedrockCobble BoulderGravel	Sand Silt Muck Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominar	Boulder Other
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds)	water upwellings)
Migratory Obstructions (seasonal, permanent)  Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond	
Other Habitat Notes, Incidental Wildlife Observat	at one prot for acres)





**Stantec** 

Station #_RII To 79	Project Name Niagava Wind				
Watercourse Name 79-1	Project # 160950269				
Photos <u>8807 - 09</u>	Field Staff T. Chandler M. Ellah				
Date June 7,7012	Time <u>/o:55 A/A</u>				
Weather conditions in previous 24 hrs					
GPS Coordinates (Zone) 171 E 6307	N 4772424 Datum				
Descriptive Location					
Water Quality	~ A/				
	Conductivity (µS/cm) 766				
	Air Temperature (°C) <u>25</u>				
Time in situ measurements taken N 55 AM					
Watercourse Dimensions & Morphology					
Mean Watercourse Width (m)	Maximum Pool Depth(cm)				
Mean Bankfull Width (m)	Mean Water Depth(cm)				
Evidence of eroding banks, Comments on bank sta	bility Minor Skow (basal) along				
toutside of meander - not exces	5, 1/2				
Substrate (% cover)					
	Sand Silt Muck				
Bedrock 20 Cobble / Gravel	Clay Marl Detritus				
In-water Cover					
Cover Types Present (circle): Undercut Bank					
Overhanging Vegetation Woody Debris	Boulder Other				
Riparian Zone					
Riparian Cover (% of watercourse shaded, dominar	t vegetation, mature or early successional)				
Adjacent Land Use, grasses, early surre	ssional				
Scrubland, mostly open/grass w	sith few trees				
Fish Habitat Potential					
Critical Habitat (spawning or nursery areas, grounds	vater upwellings)				
Migratory Obstructions (seasonal, permanent)					
	owater movement observed.				
Note any fish observations Non Observed	J.				
Waterbody Notes					
Natural Watercourse Trapezoidal Channel _	Gracead Swala Buring Tile				
Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatia Vac				
Buggat I ong	Dominated by Aquatic Veg Drý				
Other Habitat Notes, Incidental Wildlife Observat	ions, etc. Walnuts close by, Green				
fos, told poles, red belied word o	ecler, vellow washer.				
· 0/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/					
+ (1 1)	n &				
Field Notes Authored by to Changley Field Notes C	AAOCad by AVA				





Station #_R\\To 79 Watercourse Name_79-2 A	Project Name NIAGARA WIND Project # 1609 50 269
Photos 8810 - 8817, 8818	Field Staff To Chandler M. Ellah
Weather conditions in previous 24 hrs Thund GPS Coordinates (Zone) 17 E (30 Descriptive Location	Time 11:35 levshauers late yesterday 0210 N 477 506 Datum
Time <i>in situ</i> measurements taken	Air Temperature (°C) 25
Evidence of eroding banks, Comments on bank  A Recent bank Scour - banks &  Substrate (% cover)	Maximum Pool Depth (cm)  Mean Water Depth 2 (where ponder m)  Pool 0 % Run 0 % Flat  stability Well defined channel w edvidural  O 5 m high NOT PLOUGHED  channel exposed drain tibe
Bedrock Cobble Gravel	20 Sand 50 Silt Muck Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undereut I Overhanging Vegetation Woody Debris	Banks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dom  5% Shoded - Early Succession  Adjacent Land Use  AGRICULTWALL Cold	ninant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds)	undwater upwellings)
Migratory Obstructions (seasonal, permanent)  Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Chang Surficial Drainage (i.e. furrows) Dugout P	nel Grassed Swale Buried Tile Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obse	broken ties.
Field Notes Authored by 1. Chandle Field No	otes QA/QCed by

RIITO 79
79-2A.

A 2000.

REA

Well-defied
Channel

GPS 630333
4771516



NON

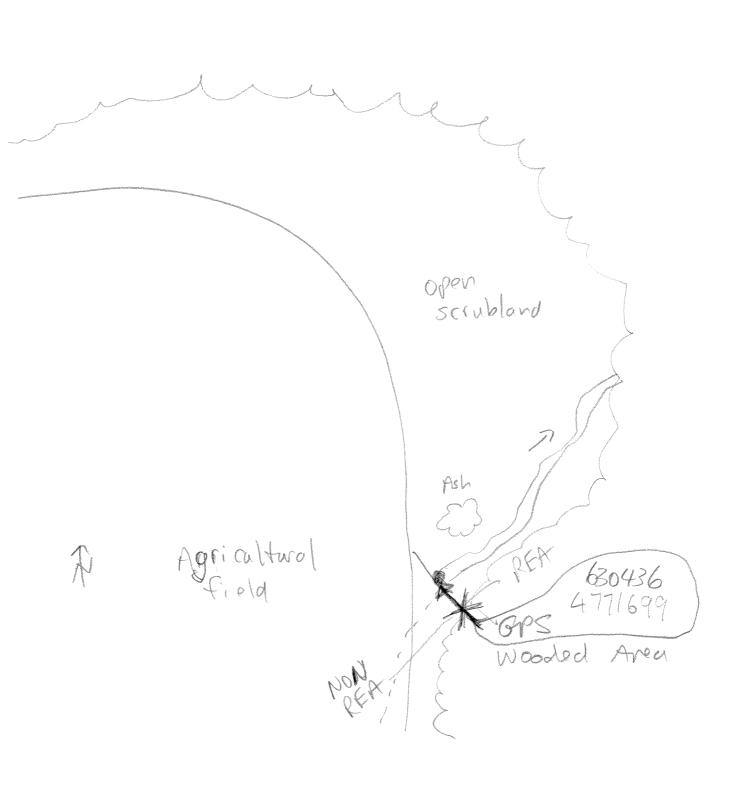
Station #R\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Project Name NJAGARA WIND Project #_/60950269
Date June 7, 2012 Weather conditions in previous 24 hrs GPS Coordinates (Zone) 127 E 6304 Descriptive Location	Field Staff Ti Chandler, M Ellah Time 12:05  Aday Thundershowers in area yesterday evening 81 N 4771591 Datum
Water Quality NowATER DR Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/cm) Air Temperature (°C)
wear bankruit width (m)	Maximum Pool Depth (cm) — Tiled Mean Water Depth (cm) % Run % Flat
Substrate (% cover) BedrockCobble BoulderGravel	Sand Silt Muck Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domin	Boulder Other
Adjacent Land Use	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ndwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
	el Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observ	vations, etc. <u>Flycatchers</u>
Field Notes Authored by Field Note	s QA/QCed by
r leid Note	o which by



REA

#### Stanted

Station # KITO79	Project Name NIAGARA WIND
Watercourse Name 79-2C	Project # 1609 50 269
Photos \$8 70,8822,8823	Field Staff Tchandler M ELLAH
Date	Time 12' ) F 650
Weather conditions in previous 24 hrs Thunder	Stormer Dierious evening
ar 3 Coordinates (Zone)	6 N 477/699 Datum
Descriptive Location	***************************************
Water Quality	
Dissolved Oxygen (mg/L) 6,05 pH%,	Conductivity (μS/cm) 967
Water Temperature (°C) 19,35	Air Temperature (°C) 25
Time in situ measurements taken12:, 25	7 iii Temperature ( C)
Watercourse Dimonoione & Manual ale	
Watercourse Dimensions & Morphology Mean Watercourse Width(m)	<b>M</b> • <b>-</b> • - •
Manage David C 11 March 111	Maximum Pool Depth 70 (cm)
Mean Bankfull Width 7.5 (m) % Riffle 40 % Poo	Mean Water Depth 2 (cm)
Evidence of eroding banks, Comments on bank sta	hills.
minor under cute.	bility hinor base tour
Substrate (% cover)	- with
Bedrock Cobble Gravel	Sand So Silt Muck
BoulderGravel	Clay Marl Detritus
In-water Cover	
Cover Types Present (circle): Undercut Bank	S Deep Pool Watercress Aquatic Veg
/ Norhonging //g = statt	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, demises	A support at the second se
Riparian Cover (% of watercourse shaded, dominan	t vegetation, mature or early successional)
Adjacent Land Use	
Scrubland then placehed agrice	Huxal Gold fartler west - Washelorea
	Itural Geld farther west-woodedorea to east.
Critical Habitat (spawning or nursery areas, groundw	/ater upwellings)
Shandled Warsel Doter Dol	
Migratory Obstructions (seasonal, permanent)	
Note any fish observations No ne	
tote any hish observations No he	
/	
Naterbody Notes	
Natural Watercourse V Trapezoidal Channel	Grassed Swale Buried Tile
Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond_	Dominated by Aquatic Veg Drv
Other Habitat Notes, Incidental Wildlife Observati	ons, etc. green from Stachark hickory
freen From Leaved in wooded area do	sy agricultural Reld.
ield Notes Authored by Chand OK Field Notes QA	VQCed by



+118

WB



#### WIND FARM WATERBODY RAPID ASSESSMENT FORM

Station # RITO81a		Project N	ame <u>Niac</u>	lara Wir	d	
Watercourse Name unkna	un tob.	Project #	Project #_//0950269			
Photos Sugar Photos Field Staff K. Clayten M. Fair						
Date June 1/19 Time 4:04 em						
Weather conditions in previous	s 24 hrs <u>&amp;   </u>	LUNU A	ho4			
GPS Coordinates (Zone)/_	11 E OG/L	3334 ·	N 4 7/2	7/07 Da	atum Nac	
Descriptive Location 644	Of CONC	ersion 4	~~30	Om Par		
- Jallin K	cod a	600 m	use Ct C		olum Bo	
Water Quality	_ /		water			
Dissolved Oxygen (mg/L)	/ pł	-t c	onductivity (μS	/cm)		
Dissolved Oxygen (mg/L) pH Conductivity (µS/cm) Water Temperature (°C) Air Temperature (°C)						
Time in situ measurements take	en					
Watercourse Dimensions & N	Morphology					
Mean Watercourse Width	(m)	Maximum	Pool Depth	(cn	n)	
Mean Bankfull Width 2	(m) [.]	Mean Wat	er Depth	(cn	,	
% Riffle	%	Pool		Run		
Evidence of eroding banks, Cor	mments on banl	k stability				
Substrate (% cover)						
Bedrock	Cobble	Sar		014		
Boulder	Cobble Gravel	Sal Cla	10	Silt\	Muck	
bodidei	Olavel —	Cla	у	Mart	Detritus	
In-water Cover Cover Types Present (circle): Overhanging Vegetation W	Undercut I	Banks Dee Boulder	p Pool Wat	tercress (A	quatic Veg	
	•					
Riparian Zone		•	_	_		
Riparian Cover (% of watercours	se snaded, dom	ınant vegetatior	i, mature or ear	dy successiona	ıl) (	
Adjacent Land Use	ettacis d			<u>uccon                                   </u>		
			,			
Fish Habitat Potential						
Critical Habitat (spawning or nur		undwater upwell	ings)			
	and was					
Migratory Obstructions (seasona	ii, permanent)					
Note any fish observations	a					
Waterbody Notes 1 N		- 0				
	pezoidal Chann	ed / M.F.	assed Swale_	Comin a	4 <b>T</b> !!	
Surficial Drainage (i.e. furrows)_	Dugget Pr			Buried		
	Dagout Ft	JII DOI	ninated by Aqua	tic veg	Dry	
Other Habitat Notes, Incidental	Wildlife Obser	vations etc -	an annual an			
	^		Δ.			
ield Notes Authored by / Clautor	Field Not	es QA/QCed by $\overline{\mathcal{M}}$	ah Ponce			
	_			9		

Han Field.

Petrosia

PEA.

Rannel

Channel



Station #	Project Name Niagasa and Project # 160950269 Field Staff K C MF. Time 11:25 and 12°C Sunny 218492 N 4754806 Datum Nad8
Water Quality Dissolved Oxygen (mg/L)	pH_890_ Conductivity (μS/cm)_320 Air Temperature (°C)_3°C
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m)	Maximum Pool Depth 0.80 (cm) Mean Water Depth 0.00 (cm) % Pool
Substrate (% cover)         Cobble          Bedrock        Cravel	Sand 4/0 Silt /0 Muck
In-water Cover Cover Types Present (circle): Undercover Overhanging Vegetation Woody Debris	ut Banks Deen Pool Watercross Assertion
Riparian Zone Riparian Cover (% of watercourse shaded, do Shrubs / gr	ominant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, g	proundwater upwellings)
Migratory Obstructions (seasonal, permanent Note any fish observations	
Waterbody Notes Natural Watercourse Transpoidal Cha	annel Grassed Swale Buried Tile t Pond Dominated by Aquatic Veg Dry Servations, etc Arab Frog S
Field Notes Authored by K Clayton Field	

RUT0.82

Bushlot Haizinga's farm HWY 3



*	R	EA	7
			199

Watercourse Name	Stantec	•	L) \$110m
Date April 19 in Previous 24 hrs	Watercourse Name unknown	Project Name Niagara Wi Project # 160950269	nd of cu
Water Conditions in previous 24 hrs  GPS Coordinates (Zone)  Water Quality Dissolved Oxygen (mg/L) Water Temperature (2C) Mair Temperature (°C)  Water Temperature (°C)  Water Temperature (°C)  Water Temperature (°C)  Mean Watercourse Width Mean Watercourse Width Mean Water Depth (cm) Mean Water Depth (cm) Water Oxygen (mg/L)  Set of the water oxygen (mg/L)  Watercourse Dimensions & Morphology Mean Watercourse Width Mean Water Depth (cm) Mean Water Depth (cm) Water Oxygen (mg/L)  Set of the water Oxygen (mg/L)  Watercourse Dimensions & Morphology Mean Watercourse Width Mean Water Depth (cm) Mean Water Depth (cm) Water Oxygen (mg/L)  Set of the water Depth (cm) Mean Water Dep		Field Staff KC, MF	· · · · · · · · · · · · · · · · · · ·
GPS Coordinates (Zone)  Descriptive Location  Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width  Mean Bankfull Width  Mean Water Depth  Conductivity (µS/cm)  Air Temperature (°C)  Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width  Mean Water Depth  Com  Ripfle  Pool  Riving  Substrate (% cover)  Bedrock  Cobble  Boulder  Gravel  Clay  Mari  Detritus  In-water Cover  Cover Types Present (circle):  Undercut Banks  Deep Pool  Watercress  Aquatic Veg  Overhanging Vegetation  Woody Debris  Boulder  Other  Riparian Zone  Riparian Zone  Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Adjacent Land Use  Adjacent Land Use  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Temperature  Temperature  Ph  Conductivity (µS/cm)  Maximum Pool Depth  Mean Water Depth  (cm)  Maximum Pool Depth  (cm)  Ma	1A/a a the annual state of the	Time 8:15 aw	
Water Quality Dissolved Gxygen (mg/L) Water Temperature (*C)  Air Temperature (*C)  Air Temperature (*C)  Maximum Pool Depth (cm)  Mean Water Depth (cm)  Riffle  W Pool  Evidence of eroding banks, Comments on bank stability  Substrate (*C cover)  Bedrock  Gravel  Gravel  Clay  Mari  Detritus  In-water Cover  Cover Types Present (circle):  Undercut Banks  Deep Pool  Watercress  Aquatic Veg  Overhanging Vegetation  Woody Debris  Boulder  Other  Riparlan Zone  Riparlan Zone  Riparlan Cover (** of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Adjacent Land Use  Mari  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Temperature (*C)  Air Tem	GPS Coordinates (7200)	crast lacc	
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) Mean Bankfull Width (m) Mean Water Depth (cm) % Riffle Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Cover Types Present (circle): Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Vaterbody Notes  Natural Watercourse  Altural Watercourse  Air Temperature of Conductivity (µS/cm) Air Temperature of Conductivity (µS/c	Descriptive Location 500	January Date	M NADS
Dissolved Oxygen (mg/L) pH Conductivity (µS/cm) Water Temperature (°C) Air Temperature (°C)  Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm)  % Riffle (m) Mean Water Depth (cm)  % Riffle (m) Mean Water Depth (cm)  % Run (m) % Flat  Evidence of eroding banks, Comments on bank stability  Substrate (% cover)  Bedrock Cobble Sand Silt Muck  Boulder Gravel Clay Marl Detritus  In-water Cover  Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg  Overhanging Vegetation Woody Debris, Boulder Other  Riparian Zone  Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations	Descriptive Education Stom N of 3	Hwy, Knwest of thitch	sah Rd.
Watercourse Dimensions & Morphology Mean Watercourse Width		o water	
Air Temperature (°C)  Watercourse Dimensions & Morphology Mean Watercourse Width S (m) Maximum Pool Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm)  Wean Bankfull Width S (m) Mean Water Depth (cm)  Wean Bankfull Width S (m) Mean Water Depth (cm)  Wean Water Depth (cm)  Would Banks Depth (cm)  Water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation (woody Debris Boulder Other  Riparian Zone  Riparian Zone  Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Wigratory Obstructions (seasonal, permanent)  Waterbody Notes  Natural Waterrouse  Transcride Changle Changle (Shangle Changle)  Waterbody Notes	Dissolved Oxygen (mg/L) pH	Conductivity (uS/cm)	
Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm)  % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability  Substrate (% cover)  Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Mari Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Transpirial School of S	rator romporature (C)	Air Temperature (°C)	
Mean Watercourse Width (m) Maximum Pool Depth (cm) Mean Bankfull Width (cm) Mean Water Depth (cm) % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Transcrided Character (Com)  Maximum Pool Depth (cm) Mean Water Depth (cm)  Maximum Pool Depth (cm) Mean Water Depth (cm)  Maximum Pool Depth (cm) Mean Water Depth (cm)  Water Depth (cm)  Water Depth (cm)  Water Cover  Cover Jypes Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone  Riparian Zone  Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat Potential	Time in situ measurements taken		
Mean Bankfull Width	Watercourse Dimensions & Morphology		
## Riffle			
Substrate (% cover)  Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Transported Chapter In Comments on bank stability  Mark Developed Muck  Saluta In Muck  Muck  Deep Pool Watercress Aquatic Veg  Watercress Aquatic Veg  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Note any fish observations  Transported Chapter In Comments  Transported Chapter In Comme	0/		
Substrate (% cover)		ooi% Run	% Flat
Substrate (% cover)  Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Wigratory Obstructions (seasonal, permanent)  Note any fish observations  Vaterbody Notes  Natural Waterrousse	Barnes, Comments of Datik St		
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other			
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other	BedrockCobble	Sand 50 Silt Co	Muck
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other	BoulderGravel	Clav Mart	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Vaterbody Notes  Vaterbody Notes  Vaterbody Notes	Riparian Cover (% of watercourse shaded, domina	ant vegetation, mature or early successionally	\
Critical Habitat (spawning or nursery areas, groundwater upwellings)  Potentially Spawning in early Spring  Migratory Obstructions (seasonal, permanent)  Seasonal Tintermittent  Vaterbody Notes  Vaterbody Notes  Vaterbody Notes	agricultural	field	
Note any fish observations	Critical Habitat (spawning or nursery areas, ground	Iwater upwellings)	and the second s
Note any fish observations/  Naterbody Notes  Vatural Watercourse/  Transpiride Channel/	(Ilgratory Obstructions (seasonal, permanent)		
Natural Watercourse Tropogoidal Channel	ote any fish observations	VII EVIVIHEN I	
Vatural Watercourse Tropogoidal Channel	/aterhody Notes		
Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry	atural Watercourse Trapezoidal Channel	Dailed	
Other Habitat Notes, Incidental Wildlife Observations, etc. red wing black birds	ther Habitat Notes, Incidental Wildlife Observa	tions, etc. red wing black hi	ids,
ield Notes Authored by K. Cayton Field Notes QA/QCed by M. Fair I.a.	old Notes Authored by V. Casilan	N E II	

upstream pation REA Phragmitis e117082.3 Hand pocket 5 of proposed Lurbins no water hamed Rag. Swale in 28x wide culvert ag. Field water body , powater , of fait R1/1082-1 landowner Wants to tile tile swampy hanne into 82-1

France into REA Price 82-1

patier into * land owner drain this patl diannel rowater-= director water in channel 0+ flou waterbody? photos: = phragnite 17→33 Stand cathails ,a)gal , reed rana M ( = proposed Orars turbine R11T082-3 HWY



Photos 8764 - 72 + 73	N 11-7-10 (1) Deture
Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Time in situ measurements taken	Conductivity (μS/cm) Air Temperature (°C)
Evidence of eroding banks. Comments on bank stab	Mean Water Depth(cm)
Substrate (% cover)  Bedrock Cobble 2 Boulder 5 Gravel 2 o	₹ · · · · · · · · · · · · · · · · · · ·
In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris E  Riparian Zone Riparian Cover (% of watercourse shaded, dominant  Adjacent Land Use  Hagricultural field (cropped)	oulder Other
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwa	iter upwellings)
Migratory Obstructions (seasonal, permanent)  [0] /nof(0]  Note any fish observations	f .
Waterbody Notes  Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows)  Dugout Pond	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observation	ns, etc. wet de hined channel
ield Notes Authored by Trevor Chandler Field Notes QA/	QCed by



D.		Δ
15	$\cup$	M

Stantec REA	Van SE A notes
Station # RITO 84-1 + 84-3 Watercourse Name unknown	Project Name Nidgara Wind Project # 160950269
Photos 55-65.	Field Staff KC € M F
Date April 19 10	Time
Weather conditions in previous 24 hrs 12 oc	
GPS Coordinates (Zone) TT E 0622- Descriptive Location Coom Sarth 0-	185 N 475355 Datum NAD
	f Jenny jump Rd,
Water Quality danding Len	
Water Quality Dissolved Oxygen (mg/L) fand water pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	, in Temperature ( Sy
Watercourse Dimensions & Morphology	standing Hz
Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Bankfull Width 5m (m)	Mean Water Depth /5-10 (cm)
% Riffle% Poo	ol of of Pup
Evidence of eroding banks, Comments on bank sta	ability
Substrate (% cover)	
BedrockCobble_	SandS Silt_S Muck
BoulderGravel	Clay Marl Detritus
Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris Riparian Zone	Boulder Other
Riparian Cover (% of watercourse shaded, domina  Adjacent Land Use	ant vegetation, mature or early successional)
famland	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	lwater upwellings)
Migratory Obstructions (seasonal, permanent)	int with at
Note any fish observations	THO MI JUNI
Waterbody Notes Natural Watercourse Trapezoidal Channel_ Surficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale Buried Tile d Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observat	
Field Notes Authored by Kaylon Field Notes C	DAYOCED by M. Faiella.

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

June Rd Jenny TWO DOOD アノカア





Station # R 11 + 1085 -	onderplace.	Project Name N	iagara Wi	nd
Watercourse Name unknow	m swale	Project #/(		
Photos <u>700, 701</u> Date <u>June 1/18</u>	2	Field Staff Y	whon Ma	C faielle
Date June 1/12		Time <u>2:35</u> 6		
Weather conditions in previous	24 hrs _ Sw	my hot		
GPS Coordinates (Zone)	T E 0619	9282 N4	7696710	Datum
Descriptive Location Sarth	of CIVI	00 - 20	n Minor	
	*			
Water Quality			/	
Dissolved Oxygen (mg/L)	pH_	Conductivity	/ (μS/cm)	
Water Temperature (°C)		Air Temperature (°C	<u> </u>	
Time in situ measurements take	)n			
Watercourse Dimensions & M	orphology			
Mean Watercourse Width	(m)	Maximum Pool Dept	h (c	cm)
Mean Bankfull Width	(m) [.]	Mean Water Depth	(0	m)
% Riffle \	% Po	ool	_% Run`	% Fla
Evidence of eroding banks, Con	nments on bank s	tability /		
Substanta (W. source)	\			
Substrate (% cover)	O-bbl-		<b></b>	
Bedrock	Cobble		Silt	
Boulder	Gravel	Clay	<u>Mari</u>	Detritus
Cover Types Present (circle): Overhanging Vegetation Wo Riparian Zone	oody Debris	Boulder Other_		
Riparian Cover (% of watercours	ie shaded, domina	ant vegetation, mature o	or early succession	nal)
Adjacent Land Use	<del>/</del> .			
Fish Habitat Potential				
Critical Habitat (spawning or nurs	sery areas, ground	dwater upwellings)		
Migratory Obstructions (seasonal	l nermanent)			
				•
Note any fish observations		No.		
Waterbody Notes				
	nezoidal Channal	Crossed Sw	ala Duni	
Natural Watercourse Tra	Pezuluai Cilatifiei Dugout Pon	d Daminated by	aleBund	ed ille
Surficial Drainage (i.e. furrows)	Dugout Pon	u Dominated by	Aquatic Veg	_ Dry
Other Habitat Notes, Incidental	Wildlife Observa	itions, etc.		
of the second		~/	•	
Field Notes Authored by	Field Notes	QA/QCed by		

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



REA

	V
Station # RITO88 TO88-IB Watercourse Name TO 8-IB Photos 2774-76 Date Jack 12017 Weather conditions in previous 24 hrs. Suntain GPS Coordinates (Zone) F 6 6 1 5 8 6 6 Descriptive Location A Southern Term Als Mr WB US	0 ' N 477///7 5 Det
Water Quality Now ATER - GR Dissolved Oxygen (mg/L) pH_ Water Temperature (°C) Time in situ measurements taken	ASSED WATERWAY  Conductivity (µS/cm)  Air Temperature (°C)
Watercourse Dimensions & Morphology  Mean Watercourse Width 5 (m)  Mean Bankfull Width (m)  NA 8 Riffle 9 Polymorphology  Evidence of eroding banks, Comments on bank states	Maximum Pool Depth(cm)  Mean Water Depth(cm)
Bedrock Cobble Boulder Gravel  In-water Cover A Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, domina Grass Timed  Adjacent Land Use	Clay Marl Detritus  nks Deep Pool Watercress Aquatic Veg Boulder Other  ant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground Migratory Obstructions (seasonal, permanent)	lwater upwellings)
Note any fish observations None	
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observa	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Field Notes Authored by Trever Chardler Field Notes C	QA/QCed by



MP BEA, F

nonl

#### Stantec

Station #	Project Name: Niagara Wind
Watercourse Name Toss - IA	Project #: 160950 269
Photos <u>8777 - 79</u>	Field Staff Trevor Chandler, Mitch Ellah
Date June 6,2012	Time 12130
Weather conditions in previous 24 hrs. Sunny	
GPS Coordinates (Zone) 171 E 615670	
Descriptive Location 200 M South of Fav	mat Send of Woods Road.
at concrete box rulvert (ruins) - D	8 US, NOC 45 M.D.
Water Quality - takenoutside study are	al project loc'n
Dissolved Oxygen (mg/L) 3.5/ pH 7	Conductivity (µS/cm) 1753
Water Temperature (°C)/6.75	Air Temperature (°C) 20
Time in situ measurements taken /2:40	
Watercourse Dimensions & Morphology	
Mean Watercourse Width (m)	Maximum Pool Depth 5 (cm)  Mean Water Depth 5 (cm)
Mean Bankfull Width (m)	
% Riffle 20 % Poo	
Evidence of eroding banks, Comments on bank sta	bility
Callert and love of all all begon	Devries property, 20% pool-the est is dry.
Substrate (% cover)	revies property. 2090,001-the ket is dry.
Bedrock 5 Cobble 3	O Sand 40 Cill & Mari
Bedrock 5 Cobble 3 Boulder 10 Gravel	Sand 70 Silt 8 Muck Clay 8 Marl 8 Detritus
In-water Cover Cover Types Present (circle): Undercut Bank Overhanging Vegetation Woody Debris	Deep Pool Watercress Aquatic Veg Boulder Other Concrete Slabs
Riparian Zone Riparian Cover (% of watercourse shaded, dominar	nt vegetation, mature or early successional)
Adjacent Land Use	
Agricultural fields.	
The state of the s	
<b>Fish Habitat Potential</b> Critical Habitat (spawning or nursery areas, groundv	vater upwellings)
Migratory Obstructions (seasonal, permanent) ໄວພ /ເວ ປາຄາມ	
Note any fish observations None observed	
Waterbody Notes	
Natural Watercourse Trapezoidal Channel_	Grassed Swale Buried Tile
Sufficial Drainage (i.e. furrows) Dugout Pond	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
	ions, etc. Many frogs observed.
Field Notes Authored by Trevor Chandler Field Notes Q	A/QCed by

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



NON

Stantec

REA

Station # RI(7088 Watercourse Name 88 - 2 Photos \$780 - 8781 Date 4 1012 Weather conditions in previous 24 hrs. GPS Coordinates (Zone) 1777 E 615 967 Descriptive Location 30 m North of St	N 1635 WG C
Water Quality NO WATER Dissolved Oxygen (mg/L) pH	Conductivity (µS/cm)
Watercourse Dimensions & Morphology Mean Watercourse Width	Maximum Pool Depth (cm)  Mean Water Depth (cm)  % Run % Flat
Substrate (% cover) BedrockCobble2 BoulderGravel	Sand 80 Silt Muck Clay Marl Detritus
In-water Cover  Cover Types Present (circle):  Overhanging Vegetation  Woody Debris  Riparian Zone  Riparian Cover (% of watercourse shaded, dominan  Adjacent Land Use	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundw	vater upwellings)
Migratory Obstructions (seasonal, permanent) しいしいのではいい Note any fish observations	
Waterbody Notes / water body 0/5 Natural Watercourse Trapezoidal Channel _ Surficial Drainage (i.e. furrows) Dugout Pond_	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry ons, etc
Field Notes Authored by T. Chardler Field Notes Q	VQCed by



		F	1	, menos
1	3	8		

Station # RITO89-1 Watercourse Name		ject Name ject #//()	liagara Wi 1950269	nd Figl
Photos See log	<del></del>	d Staff	The Contraction of the Contracti	
Date 13 30/3		6 <u>9/90</u>	pm	
Weather conditions in previous 24 hrs		sun.		
GPS Coordinates (Zone) E  Descriptive Location BOO (2007)	<u> </u>		475 3696	
Descriptive Education		en ve	2000	OUNTRE
Water Quality Piggeland Owgen (mg/l )	-u 0 3			
Dissolved Oxygen (mg/L) 1965 Water Temperature (°C) 3965	V PU OV		ity (μο/cm)	
Time in situ measurements taken	a a sym	emperature (*	C)	
	n) Max n) Mea	imum Pool Der n Water Depth	(o	cm) cm)
· · · · · · · · · · · · · · · · · · ·	<u>○</u> % Pool		% Run	% Flat
Evidence of eroding banks, Comments		95		
Substrate (% cover)				
	obble	Sand	20 Silt	Muck
Boulder G	ravel80	Clay	Mart	Detritus
In-water Cover Cover Types Present (circle): Union Coverhanging Vegetation Woody D			ř	Aquatic Veg
RCG	ebris bodi	dei Oule		***************************************
Riparian Zone				
Riparian Cover (% of watercourse shad	led, dominant veg	etation, mature	or early succession	nal)
Adjacent Land Use	$N \ge N \ge 1$	to chas	<u> </u>	
As wheat sh	, (orn			
Fish Habitat Potential				
Critical Habitat (spawning or nursery are	eas, groundwater	upwellings)		
Migratory Obstructions (seasonal, perm	anaat)			
Permanent Seasonal, perm	anem)			•
Note any fish observations				
nore		7		
Waterbody Notes				
Natural Watercourse Trapezoida	al Channel	Grassed Si	wale Burid	ad Tila
Surficial Drainage (i.e. furrows) D		Dominated b	y Aquatic Veg	Dry
Other Habitat Notes, Incidental Wildlin	e Observations,	etc.	· lamba -	MING
	·			
		Λ Λ.	·	
Field Notes Authored by KF	Field Notes QA/QCed	by follow		
W:\resource\internal Info and Teams\Aquatic Resource	s\Field Sheets\Stantec\F	orm 02 Wind Farm W	aterbody Rapid Assessme	ent Form.doc



	I Dr.
Station # R 1170 89 - 2	Project Name Niagara Wind Fo
Watercourse Name	Project # 160950269
Photos see o	Field Staff
Date Inc 13 2012	Time 2:38 pm
Weather conditions in previous 24 hrs	
GPS Coordinates (Zone)	4167 N 4253064 Datum
Of O Oodidition (=+	400 M yest of town he
Descriptive Location Book Rate	
Water Quality	- ANI
Dissolved Oxygen (mg/L) PH	Conductivity (μS/cm)
Diogottog exigen (g.)	Air Temperature (°C)
Water Temperature (°C) Time in situ measurements taken	7 Tomporatare ( o/
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width (m)	Maximum Pool Depth(cm)
Mean Bankfull Width 2 (m)	Mean Water Depth (cm)
	Pool % Run % Fla
Evidence of eroding banks, Comments on bank	
steep stardy + vee	
0.00	
Substrate (% cover)	
Bedrock Cobble	Sand Silt Muck
Boulder Gravel	Clay Marl Detritus
	water planta
In-water Cover	· · · · · · · · · · · · · · · · · · ·
Cover Types Present (circle): Undercut E	Banks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
RCG	
Riparian Zone Riparian Cover (% of watercourse shaded, dom	inant vegetation, mature or early successional)
Ripanan Cover (% of water course shaded, dom	ote alone
Adjacent Land Llan	3
Adjacent Land Use	
Tick Uchitet Detential	
Fish Habitat Potential	induster unwellings)
Critical Habitat (spawning or nursery areas, grou	Manator aphromiss)
1 Ot at a diagram (accessed permanent)	
Migratory Obstructions (seasonal, permanent)	A Company of the Comp
permanent	
Note any fish observations	
ANO	
Waterbacht Motor	
Waterbody Notes Natural Watercourse Trapezoidal Chann	nel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout P	orid Dominated by Addatic vogv bij
	motions sta
	Nations, etc.
Other Habitat Notes, Incidental Wildlife Obse	as John Hod all as India
- Musca Mannel , mast	or dominated of agrave
- Musica Mannel, norst	or dominated if agrave
- Musca Mannel, norst	or dominated if agrave
- marca manner, norst	a dominated of agrave
- marca manner, norst	etes QAQCed by July Rom
Field Notes Authored by KE Field No	a dominated of agrave

REA -1 TOOK AND TOO



Stantec	Fo			
01-15-4 RILTD89-3	Project Name Niagara Wind			
Station # K 1 1 0 8 9 1 - 3	Project # 160950269			
Watercourse Name	Field Staff			
Priores	Time 3 0 pr			
Weather conditions in previous 24 hrs VA				
Weather conditions in previous 24 ins	23 124 N 475 30 82 Datum			
GPS Coordinates (Zone) 7 † E 6 Descriptive Location				
Descriptive Location	1800			
of Bode.	1.//			
Water Quality	The ANY			
	pH Conductivity (μS/cm)			
Dissolved Oxygen (mg/L)	Air Temperature (°C)			
Water Temperature (°C)	- \ / III (6) (1)			
Time in situ measurements taken				
Watercourse Dimensions & Morphology	i			
Mean Watercourse Width (m)	Maximum Pool Depth (cm)			
Mean Bankfull Width(m)	Mean Water Depth(cm)			
Weari Barikidii VVidii	% Pool % Run % Flat			
Evidence of eroding banks, Comments on				
EAIGRICO OF GLOCKING STATES				
Substrate (% cover)  Redrock Cobbl	le Sand Silt Muck			
	Dotritue			
Boulder Grave	The second secon			
Overhanging Vegetation Woody Debri- Riparian Zone Riparian Cover (% of watercourse shaded,	, dominant vegetation, mature or early successional)			
helgenow - elm.	RCG Maple, ASV)			
Adjacent Land Use				
Fish Habitat Potential	aroundwater unwellings)			
Critical Habitat (spawning or nursery areas	, groundwater upweringer			
No the Manager of Portraine	ent)			
Migratory Obstructions (seasonal, permane	ent) — Gary nat y perm — — — — — — — — — — — — — — — — — — —			
- Al				
Note any fish observations				
<u></u>				
Waterbody Notes shallow	)			
Natural Watercourse Trapezoidal C	Channel Grassed Swale Buried Tile			
	gout Pond Dominated by Aquatic Veg Dry			
Sumicial Dialitage (i.e. fattotto)	,			
Other Habitat Notes, Incidental Wildlife	Observations, etc.			
-shallow codonel in	modernow w debred hed t			
<u>-Status Garage</u>				
- POLY CON CON	all drawnant to KBA-1+2			
-WAL MANN ZONDAR	The state of the s			
	Mee			
mile black Authorized by 1	Field Notes CAVCAGE DV 11/45/12"			
	Field Notes QA/QCed by Julian Farm Waterbody Rapid Assessment Form.doc			

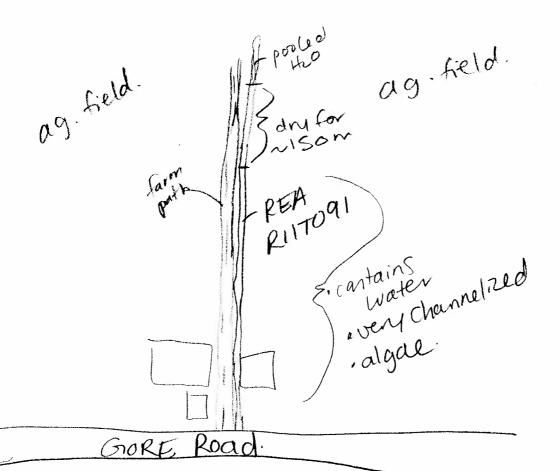




WIND FARM	WATERBODY	RAPID	ASSESSMENT	FUKIN
			•	

DI-TOO!	Project Name Niagara Wind
Station #	Project #
Watercourse Name unknaum	Field Staff <u>FC</u> € MF
Photos 102-106	Time 3 0 2
Weather conditions in previous 24 hrs 12°C	wereast.
GPS Coordinates (Zone) E 062	0509 N 4756692 Datum NAD 03
Descriptive Location Soom east o	f Good Rd 600 NO+ Hutchi
Water Quality - Standing water	
Dissolved Oxygen (mg/L)pH	Conductivity (μS/cm)
Water Temperature (°C)	Air Temperature (°C)
Time in situ measurements taken	
Watercourse Dimensions & Morphology	
Mean Watercourse Width (m)	Maximum Pool Depth (cm)
Mean Bankfull Width (m)	Mean Water Depth (cm) % Flat
% Riffle % P	00l
The same to the sa	stability
fairly stable o	he to regetation.
Substrate (% cover)	Sand 30 Silt 30 Muck
BedrockCobble	SaliuSaliu
BoulderGravel	Clay Marl Detritus
Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated)	inant vegetation, mature or early successional)
	$F \otimes A \otimes A$
Adjacent Land Use	al Cald:
agneumw	at pera
Fish Habitat Potential	
Critical Habitat (snawning or nursery areas, gro	undwater upwellings)
S Dave VIII	THE CONTROL OF THE CO
Migratory Obstructions (seasonal, permanent)	
Note any fish observations	
Note any han observations	
Mataria du Notos	
Waterbody Notes Natural Watercourse Trapezoidal Chan	nnel Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout I	Pond Dominated by Aquatic Veg Dry
Sufficial Dialitage (i.e. raive ve)	
Other Habitat Notes, Incidental Wildlife Obs	ervations, etc.
	VA C
Field I	O/F
	Notes QA/QCed byheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

K





NON

Station # RIT093H Watercourse Name 93-1a Photos 8796-98 Nophoto8795 Date June 10, 2012	Project Name Niagara Wind Project # 160950 269 Field Staff Tichandler, M. Ellah Time 1:40 PM
Weather conditions in previous 24 hrs E E E Descriptive Location	2 N 4767446 Datum
Water Quality // O WATER Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/cm)Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m)% Riffle% Po Evidence of eroding banks, Comments on bank st	ol % Run % Flat
Substrate (% cover) BedrockCobble BoulderGravel	20 Sand & Silt Muck Clay 20 Marl Detritus
In-water Cover NO WATER Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris	nks Deep-Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domin Adjacent Land Use	ant vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ndwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations No NE	
Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Po	el Grassed Swafe Buried Tile ond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obser	vations, etc. Field recenty plaughed
Field Not	res OA/OCed by



REA

Station #RIT093H Watercourse Name93-1b Photos3998801 DateJune62012	Project Name Niagera Wind Project # 160950269 Field Staff T. Chandley M Ellah Time 4:50 PM
Weather conditions in previous 24 hrs  GPS Coordinates (Zone)   F 6   8 500  Descriptive Location	N 4767 151 Datum
Water Quality Dissolved Oxygen (mg/L)	9.29 Conductivity (μS/cm) 494 Air Temperature (°C) 20°C
Watercourse Dimensions & Morphology Mean Watercourse Width 15 (m) Mean Bankfull Width (m) % Riffle (m) Evidence of eroding banks, Comments on bank st	ol% Run% Flat
Substrate (% cover)  Bedrock Cobble Boulder Gravel	Sand So Silt Muck Clay Marl Detritus
In-water Cover Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris	nks Deep Pool Watercress Aquatic Veg Boulder Other Alsa
Riparian Zone Riparian Cover (% of watercourse shaded, dominated to the shaded to the shaded dominated to the shaded to the shad	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Note any fish observations	
Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (î.e. furrows) Dugout Po	el Grassed Swale Buried Tile ond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obser	vations, etc. dragonfly's common yellowthroat Water. Gray tree frogs.
	tes QA/QCed by





District	Project Name Niagara Wind
Station #_KITTO93H Watercourse Name_93-2	Project #_ 160950269
Photos 8802 - 06	Project # 160950269 Field Staff T. Chandler M. Ellah
Date June 6,7012	Time 5:00 PM
weather conditions in previous 24 hrs	+ cloud
GPS Coordinates (Zone) PT E 6 18 2 6 3	N 4767030 Datum
Descriptive Location	
Water Quality 10 0 S HALLOW Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity (μS/cm)Air Temperature (°C)5
Watercourse Dimensions & Morphology	(am)
Mean Watercourse Width 4 (m)	Maximum Pool Depth (cm)
Moon Bankfull Width (M)	Weath Water Depth
% Riffle % P0	The state of the s
Evidence of eroding banks, Comments on bank st	ability
Substrate (% cover) BedrockCobble	Sand Silt O Muck  Clay Marl Detritus
BoulderGravel	Clay Marl Detritus
In-water Cover	
Cover Types Present (circle): Undercut Ba	inks Deep Pool Watercress Aquatic Veg
Overhanging Vegetation Woody Debris	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domin	
Mar Cultural Freis	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	ndwater upwellings)
Migratory Obstructions (seasonal, permanent)	
Dry low flow	
Note any fish observationsN	
Waterbody Notes Natural Watercourse Trapezoidal Chanr Surficial Drainage (i.e. furrows) Dugout Po	nel Grassed Swale Buried Tile ond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Obse	rvations, etc. Ween togs
wooded area dis. Waterer	use not proyen up streams
in wheat feld.	use not playled up stream (west)
Field Notes Authored by 1. Chandley Field No.	



REA

#### Stantec

Station # R   To 94  Watercourse Name 94 - 1  Photos 8790 - 91  Date June 6 702  Weather conditions in previous 24 hrs. 5 m 9  GPS Coordinates (Zone) 171 E 618420  Descriptive Location Along Scott Road	N 9 16 80 15 Datum
Water Quality No WATER Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken	Conductivity (µS/cm)Air Temperature (°C)
Watercourse Dimensions & Morphology Mean Watercourse Width	bility Minor Scaur around
Substrate (% cover)  Bedrock 5 Cobble 2  Boulder 5 Gravel	O Sand 70 Silt Muck Clay Marl Detritus
In-water Cover  Cover Types Present (circle):  Overhanging Vegetation  Woody Debris	ks Deep Pool Watercress Aquatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, domina  90%-960sses trees at Scott Rd.  Adjacent Land Use  Agricultura   Gelds.	nt vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	dwater upwellings)
Migratory Obstructions (seasonal, permanent)  Note any fish observations	
Other Habitat Notes Incidental Wildlife Observ	Grassed Swale Buried Tile Dominated by Aquatic Veg Dry ations, etc Nonded are a 4
Scott Kd: Shoghare hickory.	
Field Note	e OA/OCed by

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



NON

Stantec	
Station #RIT094	Project Name: Nagava Wind
Watercourse Name 94-2	Project #: 1609 50 2 69
Photos <u>\$192 - 94</u>	Field Staff T. Chandler M. Ellah
Date June 6,2017	Time 3:40
Weather conditions in previous 24 hrs.	cloud,
GPS Coordinates (Zone) 177 E 6.1845	- Company of Contraction
GPS Coordinates (2011e)	†
Descriptive Location	
Water Quality No WATER  Dissolved Oxygen (mg/L) pH_  Water Temperature (°C)  Time in situ measurements taken	Conductivity (μS/cm)Air Temperature (°C)
Watercourse Dimensions & Morphology	'/A
Mean Watercourse Width(m)	Maximum Pool Depth(cm)
Mean Bankfull Width(m)	Mean Water Depth(cm)
	ool% Run% Flat
Evidence of eroding banks, Comments on bank s	stability NoNE
Evidence of creamy	
Bedrock Cobble Gravel  In-water Cover Cover Types Present (circle): Undercut Bedrock Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated and Use Against Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, grounds)	Clay Mari Detritus  Banks Deep Pool Watercress Aquatic Veg Boulder Other
Critical Habitat (spawning or nursery areas, ground	undwater dpwominge)
Migratory Obstructions (seasonal, permanent)	
Note any fish observations/	
Note any lish observations	
Waterbody Notes Natural Watercourse Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F Other Habitat Notes, Incidental Wildlife Observed Annual Control of the Control	ervations, etc.  Depression  Dimension  Dime
	. 1
Field Notes Authored by T. Chandlov Field!	Notes ON/OCod by
Field Notes Authored by 1. Unand 10 Y Field !	NOTES CANCIOCU DY



				2-1
			Na	e 13
			7.1	1.13
WIND FARM WAT	ERRONY RAPID	ASSESSME	ENT FORM	a Small
WIND FARM WAT	EKBODI IO 15		Color	g Swale, Hardy Pr
Stantec		,		
tion # R 1 T 0 95 - 1	Project N	Name Name	gara Wind	
Lacource Name (A ( )CV (AA A.L	Project i	# 16099 aff X clave	ter M. Far	ella
10 VN 010	Time	130		
te June 13/17 eather conditions in previous 24 hrs _		nd.	1/ 0050 Date	m Nad & 3
o Operation(OR (/ODB) ) / )		N 4-	1 015 KM	1 1000
scriptive Location (0)	arth of (	V EXCELLEN		
UST THE KULL				
ater Quality - no wate	pH	Conductivity (	μS/cm)	
ssolved Oxygen (mg/L)	Air Tem	Conductivity ( perature (°C) _	17°C	
ater Temperature (°C) me in situ measurements taken				
ratercourse Dimensions & Morphol	logV		(cm	1
ean Watercourse Width (n	n) Maximu	ım Pool Depth		)
ean Bankfull Width(n	••;	Vater Depth	% Run	% Flat
% Riffle	% Pool		•	
% Riffle vidence of eroding banks, Comments	On Dank Sudamey			
Cail	- tilled			Muck
Singarate ( A Cotto)	Cobble	_Sand	Silt Marl	Muck Detritus
BedrockBoulderG	Gravel	Clay	Maii	
Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercourse sha				
Fish Habitat Potential Critical Habitat (spawning or nursery	areas, groundwater ı	upwellings)		
Migratory Obstructions (seasonal, pe	manerit) wate	<u> </u>		
Note any fish observations				
Waterbody Notes Natural Watercourse Trapez Surficial Drainage (i.e. furrows)	oidal Channel	Grassed S	waleBu	ried Tile
Natural Watercourse Hapoz	Dugout Pond	_ Dominated t	y Aquatic veg	
Other Hebitat Notes, Incidental Wi	Idlife Observations	, etc		
Field Notes Authored by	Field Notes OA/OC	ed by MA		
Steld Notes Authored by	LIGHT 14/100 CD 14/10		Conid Acces	ment Form.doc

W:\resource\internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

Bushlo halse Swale agricultural swale. Nan REA hedge rav barr -grasced hedge van Creek Road





Stantec					الم ما ترا	
· · · · · · · · · · · · · · · · · · ·		Project N	lame Nia	gara L	11/4	
ation # K O 900 Anatom Anatom Market		Project i	#_1609	20202		
otos 754-762		Field Sta	iff K. Clayo	71,19174	ITHA	
iotos		Time	<del></del>			
eather conditions in previous 24 hrs	Ray	hot	huny	i AUAL	Datum	Nad 8
	1 / V / / / \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1885	N 4	0 > 0 = 100	<u> </u>	
escriptive Location 2000	YOUN_	Burdle	pad.			
ater Quality no M	) ater		Conductivity	(µS/cm)		
issolved Oxygen (mg/L)	рп	Air Tom	perature (°C)	21		
Inter Temperatura (°C)		All lem	peraturo ( °)			
me in situ measurements taken						
/atercourse Dimensions & Morpho	ology	Mavimi	ım Pool Depth		(cm)	
lean Watercourse Width(	m)	Mean V	Vater Depth		((((((((((((((((((((((((((((((((((((	
lean Bankfull Width(	m) m) % Po		(d.c. = cp=	% Run		% Fla
% Riffle	- 22 hank s	ooi stahilitv	magnification and the second s			
% Riffle  vidence of eroding banks, Comment	s on Dank	stability				
- 101				Silt	107)	Muck
Substrate (% cover)  Bedrock	Cobble		Sand			Detritus
	Gravel		Clay	Mai	!	
Cover Types Present (circle): Overhanging Vegetation Woody		Boulde	it Other			
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone	Debris	Boulde inant vege	r Other			
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone  Riparian Cover (% of watercourse sh	Debris	Boulde inant vege	r Other			
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use	Debris aded, domi	Boulde	er Other			
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use	Debris aded, domi	Boulde	er Other			
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery	Debris  aded, domi	Boulde inant veget undwater u	tation, mature	or early succ	essional	
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery	Debris  aded, domi	Boulde inant veget undwater u	tation, mature	or early succ	essional	
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, personal)  Note any fish observations	aded, domi	Boulde inant vege undwater u	tation, mature	or early succ	essional	
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, personal)  Note any fish observations	aded, domi	Boulde inant vege undwater u	tation, mature	or early succ	essional	
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, personal)  Note any fish observations	aded, domi	Boulde inant vege undwater u	tation, mature	or early succ	essional	
Riparian Zone Riparian Zone Riparian Cover (% of watercourse she Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, per Note any fish observations  Waterbody Notes Natural Watercourse Trapez	aded, domi	Boulde	tation, mature  upwellings)  Grassed S  Dominated	or early succ	essional	d Tile
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, per  Note any fish observations  Waterbody Notes  Natural Watercourse Trape:	aded, domi	Boulde	tation, mature  upwellings)  Grassed S  Dominated	or early succ	essional	d Tile
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, personal)  Note any fish observations	aded, domi	Boulde	tation, mature  upwellings)  Grassed S  Dominated	or early succ	essional	d Tile
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, per  Note any fish observations  Waterbody Notes  Natural Watercourse Trape:	aded, domi	Boulde	tation, mature  upwellings)  Grassed S  Dominated	or early succ	essional	d Tile
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, per  Note any fish observations  Waterbody Notes  Natural Watercourse Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incidental W	areas, grown areas	Boulde inant veget undwater u	grassed S Dominated	or early succ	essional	d Tile
Cover Types Present (circle): Overhanging Vegetation Woody  Riparian Zone Riparian Cover (% of watercourse sh  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery  Migratory Obstructions (seasonal, per  Note any fish observations  Waterbody Notes  Natural Watercourse Trape:	areas, ground areas, ground areas, ground areas	Boulde inant veget undwater un	grassed S Dominated etc.	Swale_by Aquatic V	Burie	d Tile Dry

Offine · farmard. P11096-1 d Ange Bird Road  $\leftarrow N$ 



NON

Station # RIT097 Watercourse Name 97- Photos 8787 Date 5 10 2012 Weather conditions in previous 24 hrs 5 17 22 4 Descriptive Location 600  South of S	N 4/65 66 Datum
Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Time in situ measurements taken	Conductivity (μS/cm)
Watercourse Dimensions & Morphology Mean Watercourse Width	Mean Water Depth(cm) ol
Substrate (% cover)  Bedrock  Boulder  Gravel	Sand 20 Silt 80 Muck Clay Marl Detritus
In-water Cover  Cover Types Present (circle): Undercut Bar  Overhanging Vegetation Woody Debris	nks Deep Pool Watercress Aquatic Veg Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domina  Open Geld  Adjacent Land Use	
Fish Habitat Potential N/A Critical Habitat (spawning or nursery areas, ground	
Migratory Obstructions (seasonal, permanent)  Note any fish observations	
Surficial Drainage (i.e. furrows) Dugout Pol	I Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry
Field Notes Authored by T. Chandler Field Note	es QA/QCed by



MINIS PHEN WATERDOOP	REA
Stantec	N / Samuel March
Station #RITT097  Watercourse Name97 - 2  Photos 8733 - 85  Date	Project Name: Niagra Wind Project #: 160950269 Field Staff T. Chandler M. Fllah Time 2:00PM
Weather conditions in previous 24 hrs. Sunday  Weather conditions in previous 24 hrs. E 617231  GPS Coordinates (Zone) 177 E 617231  Descriptive Location FH Silver Structure	500m west of Port Dovidson Ra
Water Temperature (°C) /4,27 Time in situ measurements taken 2:10 PM	全38 Conductivity (µS/cm) <u>2630</u> Air Temperature (°C) <u></u> 2。
Watercourse Dimensions & Morphology Mean Watercourse Width / 0 (m) Mean Bankfull Width / 0 (m)  — % Riffle / 0 % Po  Evidence of eroding banks, Comments on bank s	tability Marabalany Vegetaton
Substrate (% cover)  Bedrock 10 Cobble  Boulder 10 Gravel	Sand 30 Silt Muck Clay Marl Detritus
In-water Cover  Cover Types Present (circle): Undercut B  Overhanging Vegetation Woody Debris	Boulden Other Cipyopa Shows + Xing.
Riparian Zone Riparian Cover (% of watercourse shaded, domination of the shaded of the	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, gro	
Migratory Obstructions (seasonal, permanent)	
Migratory Obstructions (seasonal, permanenty	
Waterbody Notes Natural Watercourse Trapezoidal Char Surficial Drainage (i.e. furrows) Dugout  Other Habitat Notes, Incidental Wildlife Obs	Grassed Swale Buried Tile Pond Dominated by Aquatic Veg Dry  Servations, etc Large grassed buffer  Societ area to north of Silver Street
TCHAND EV Field	

Field Notes Authored by CHANDLEL Field Notes QA/QCed by Wild Farm Waterbody Rapid Assessment Form.doc
W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

Non REA

Stantec	Project Name: Nagara Wind
01/12/07	
ation # RILTD 97 atercourse Name 97-3	Project #: 160950269 Field Staff T. Chandler M. Ellal
atercourse Name_1789 notos <u>\$786-88</u> , +89	Field Staff
notos 8 (86 88 ) 01 ate 1, va 6, 2012	Time 7:20 PM
eather conditions in previous 24 hrs.	7166 N 4765985 Datum
PS Coordinates (Zone) 177 E 61	7166 N 47051A3
PS Coordinates (2016) The Pond ~ 20 × 40 K	7166  NATIONAL TO A SURVEY  RU 100-300m South 5 Silver Street.
escriptive Location Total Davidson	RJ. 100-300m South 5 31111.
800 m 40681 d 1010	Ru. 100-300 m Souths Silver Street.
Vator Quality	a is Conductivity (uS/cm) 1073
See alved Ovygen (mg/L) 3.20	pH X.  δ Conductivity (μο/οπ/ Air Temperature (°C) 20°C
Veter Tomperature (°C) & v. V	
Time in situ measurements taken2	35 pm
IIIIe III Sita modes	()
Watercourse Dimensions & Morpholog	Maximum Pool Depth(cm)
Mean Watercourse Width(m)	Mean Water Depth(CIII)
a postfull Width / Y''	/ % BIII
% Riffle	a bank stability pand feature w sweet
Evidence of eroding banks, Comments of	m bank stability pond feature w swale
Evidence of eroding banks, Comments of	- Character A
a Latinta (9/ cover)	Silt / OD_Muck
Substrate (% cover)  BedrockCob	bble Sanu Detritus
BoulderGra	ivelClaySource
Boulder	Poer Rool Watercress Aquatic Veg
Cover Types Present (circle): Und Overhanging Vegetation Woody Del Riparian Zone	ed, dominant vegetation, mature or early successional)
1090 shaded	
Adjacent Land Use	
pasture	
Pasto	
Fish Habitat Potential Critical Habitat (spawning or nursery are	anont)
Migratory Obstructions (seasonal, perm	manery Motor turbid.
Migratory Obstructions (seasonal, permonent of the seasonal of	mer. Water turbing natural
Note any fish observations None	246Ni
Waterbody Notes Natural Watercourse Trapezoi Surficial Drainage (i.e. furrows)	dal Channel Grassed Swale Buried Tile Dugout Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wild	llife Observations, etc. Mallord ducks in pend eess to pond. No evidence & excavation
Cattle & horses have ace	eess to ponor
(P.G. Soil piles)	
(P.g. soil piles)	<i>Y</i>
	Field Notes QA/QCed by
Field Notes Authored by I 1 Chandler	Field Notes UA/QUEU by
Field Notes Authored by	20 Wind Farm Waterbody Rapid Assessment Form.do



	REA
	ACCESSMENT FORM
WIND FARM WATER	BODY RAPID ASSESSMENT FORM
Stantec	The state of the s
Station # R11 TO 98-1	Project Name Niagara Wing Fy 2 Project #_160950269
Watercourse Name	Field Staff
Photos 2013	Time
Date	N 4753587 Datum
CDS Coominates (2010)	The crown + Marshagan
Descriptive Location	
·	$\mathcal{A}\mathcal{A}\mathcal{A}$
Water Quality	pHConductivity (μS/cm)
Dissolved Oxygen (mg/L)	Air Temperature (°C)
	In
Time in situ measurements taken	(cm)
Watercourse Dimensions & Morphology (m)	Maximum Pool Depth (cm)
Maan Watercourse Widui	Mean Water Deput
Mean Bankfull Widui	% Pool
% Riffle Evidence of eroding banks, Comments on	bank stability
Evidence of dream of	
- 1 to (W cover)	Sand Silt Muck
Substrate (% cover)  Bedrock	bleBanBanBan
BedrockGrav	VBI
Cover Types Present (Charles). Woody Det	dercut Banks Deep Pool Watercress Aquatic Veg oris Boulder Other  de, dominant vegetation, mature or early successional)
Riparian Cover (% of watercourse shade	programme.
79 10	The top heldo
Adjacent Land Use	Maria
Fish Habitat Potential Critical Habitat (spawning or nursery are	eas, groundwater upwellings)
Migratory Obstructions (seasonal, perm	anent)
Note any fish observations	
none	1710
Surficial Drainage (i.e. furrows)	dal Channel Grassed Swale Buried Tile Dugout Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildl	life Observations, etc.
Other Habitat Notes, Mannel	of of access and it loses definite
- behind house to	Field Notes QA/QCed by Welsthook Rank Assessment Form.doc
Fleid Notes Authors by Translaguate Resour	Field Notes QA/QCed by

5 viticial brainage 160/8/00/ REA-7 surticual drainage COLO grassed smale BEA-1 noalless 2000sed



Startec  Attion # Project Name   Project Name   Project Name   Project   Pro	WIND FARM WATERBOL	)   KAI ID I I I	, , , ,	
recourse Name of the			ı	Fo
Air Temperature (°C)  Note and the conditions in previous 24 hrs  alter Cuality  PS Coordinates (Zone)  PS Run  PS	Stantec	- 1 11000	a wind	
Air Temperature (°C)  Nater Quality	011-190-2	Project Name	269	
Air Temperature (°C)  Nater Quality	ation # /< 111 0 10	Project #	1 K	
reather Colorinates (Zone) PS Coordinates (Zone) Pollor (Conductivity (µS/cm) Pair Temperature (°C) Pollor (Conductivity (µS/cm)	atercourse Name	Field Stan P		
reather Colorinates (Zone) PS Coordinates (Zone) Pollor (Conductivity (µS/cm) Pair Temperature (°C) Pollor (Conductivity (µS/cm)	notos Sactos	Time 10 ATM		
reather Colorinates (Zone) PS Coordinates (Zone) Pollor (Conductivity (µS/cm) Pair Temperature (°C) Pollor (Conductivity (µS/cm)	ate June 13 2010		112 C Datum	
Vater Quality Vissolved Oxygen (mg/L) Vissolved Oxygen		346 N 475	3 9 3 6 Dailin	
Vater Quality  Vision of Dayson (mg/L)  Vater Temperature (°C)  Vine in situ measurements taken  Vine in situ measurements  Vine in situ measurement  Vine in measurement	PS Coordinates (Zone)	COUNT & Mars	nagari	
Vater Cuality Dissolved Oxygen (mg/L) Vater Temperature (°C) Vater Depth Vater Depth Vater Composition Value Vater Cover (% cover) Vater Cover (% cover) Vater Cover (% of water Cover) Volume Vater Cover (% of water Cove	PS Cooldinates ( July 3 plans	UO.	9	
Vater Quality Vissolved Oxygen (mg/L) Vater Temperature (°C) Vater T	escriptive Location 300 m 3000			
Nater Temperature (°C)	approx	$d\Omega$	,	
Nater Temperature (°C)	Veter Onality	Conductivity (μS/c	m)	
Nater Temperature (**)  Imme in situ measurements taken  Matercourse Dimensions & Morphology  Mean Watercourse Width  Mean Bankfull Width  Mean Water Depth  Riffle  Riffle  Evidence of eroding banks, Comments on bank stability  Substrate (** cover)  Bedrock  Gravel  Cobble  Gravel  Clay  Mari  Detritus  In-water Cover  Cover Types Present (circle):  Overhanging Vegetation  Woody Debris  Boulder  Cover Types Present (circle):  Overhanging Vegetation  Woody Debris  Boulder  Riparlan Zone  Riparlan Zone  Riparlan Cover (** of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Trapezoldal Channel  Dominated by Aquatic Veg  Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	valer duality	Air Temperature (°C)	/	
Natercourse Dimensions & Morphology Wean Watercourse Width (m) Mean Water Depth (cm) Wean Bankfull Width (m) Wean Water Depth (cm) Water Color Water Color Water Color Water Color Water Color Cover Types Present (circle): Underput Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Depths Boulder Other Overhanging Vegetation Woody Depths Boulder Other Riparian Zone Riparian Zone Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent) Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dny Other Habitat Notes, Incidental Wildlife Observations, etc.		All Temporators ( )		
Watercourse Width (m) Maximum Pool Depth (cm) Mean Watercourse Width (m) Mean Water Depth (cm) Mean Bankfull Width (m) % Pool % Run (cm) % Riffle Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Sedrock Cobble Sand Silt Mark Boulder Gravel Clay Marl Detritus Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Underput Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upweilings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dry Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Vater Temperature ( )		a second	
Mean Watercourse with Mean Water Detrill Mean Bankfull Width W Riffle Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Gravel Clay Manl Detritus Boulder Cover Types Present (circle): Underput Banks Deep Pool Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dry  Other Habitat Notes, incidental Wildlife Observations, etc.	Time in situ measulemente		(	
Mean Watercourse with Mean Water Detrill Mean Bankfull Width W Riffle Evidence of eroding banks, Comments on bank stability  Substrate (% cover) Bedrock Gravel Clay Manl Detritus Boulder Cover Types Present (circle): Underput Banks Deep Pool Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dry  Other Habitat Notes, incidental Wildlife Observations, etc.	Morphology & Morphology	Maximum Pool Depth	***************************************	
Mean Bankfull With	. Main mounted WIGIN	Mater Deput		o/ Flat
Substrate (% cover) Bedrock Bedrock Gravel Clay Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris Boulder Clay Watercress Aquatic Veg  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spayning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg  Other Habitat Notes, Incidental Wildlife Observations, etc.	Mean Watercourse		un	
Substrate (% cover)  Bedrock Bedrock Gravel Boulder Gravel  In-water Cover Cover Types Present (circle): Overhanging Vegetation  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg  Other Habitat Notes, Iscidental Wildlife Observations, etc.	Mean Bankiuli VV.dui%	Pool		
Substrate (% cover)  Bedrock  Gravel  Clay  Marl  Detritus  In-water Cover Cover Types Present (circle): Overhanging Vegetation  Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upweilings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows)  Dugout Pond  Other Habitat Notes, incidental Wildlife Observations, etc.	forming hanks. Comments on bank	k stability		
Substrate (% cover) Bedrock Gravel Gravel Clay Marl Detritus  Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Evidence of eroding burney			
Substrate (% cover) Bedrock Gravel Gravel Clay Marl Detritus  Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.			0.11	Muck
Boulder	Cubetrate (% COVET)	Sand		
In-water Cover  In-water Cover Cover Types Present (circle):  Overhanging Vegetation  Woody Debris  Boulder  Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Trapezoidal Channel  Dugout Pond  Dominated by Aquatic Veg  Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.		Clay	Man	— Conver
In-water Cover Cover Types Present (circle): Undepcut Banks Deep Pool Watercess Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upweilings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, incidental Wildlife Observations, etc.		· ·		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Overhanging Vegetation  Riparian Zone  Riparian Coupt (% of watercourse shaded, do	minant vegetation, mature or ea	arly successiona	1)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc				
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Adjacent Land Use			
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile  Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dry  Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.				
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile  Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dry  Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.				
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile  Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dry  Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Fish Habitat Potential	iroundwater upwellings)		
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile  Natural Watercourse Trapezoidal Channel Dominated by Aquatic Veg Dry  Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Critical Habitat (spawning or Hurser) areas, s		<del>\</del>	
Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile  Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	/	<del>()</del>		•
Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile  Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Migratory Obstructions (seasonal, permanent			
Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile  Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc  And	45			
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc  And	Note any fish observations	/		
Natural Watercourse Trapezoidal Channel Brassed over Aquatic Veg Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc				
Natural Watercourse Trapezoidal Channel Brassed over Aquatic Veg Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc		C-secod Swa	e Buri	ed Tile
Sufficial Drainage (i.e. furrows) Dugout Portugues  Other Habitat Notes, Incidental Wildlife Observations, etc.  - e A to Check of Dugoed & Did of Check of Control o	Waterbody Notes Transzoidal Ch			_ Dry
Other Habitat Notes, Incidental Wildlife Observations, etc.	Natural Watercourse	ut Pond Dominated by P	Magao 103	-
Other Habitat Notes, Incidental Wildlife Observations, etc.  -entropy of the Correct of the Corr	Curficial Drainage (I.e. Iuliums)			
- entre held plupsed a prantity beller		bservations, etc		
- entre held plupsed a prantity beller	Other Habitat Notes, Incidental Whiting C	V	1 2010	
-entre held programme beller	5 Mual Aller	od diploted	MULL	
Field Notes QA/QCed by	- about higher Alough	W. The state of th	-	
Field Notes QA/QCed by				
Field Notes CAVICOU DY			•	
A 15-read PM 3 % W				

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



stantec  tion # R 1 1 7 9 8 - 3  tercourse Name  tercourse Name  te	Project Name Niagara Wind
tercourse Name	Project Name Nadara College
tercourse Name	
otos	Project #_/(a) 9 50 a w
1005	Field Staff K. C. T. J. J. J. C. T. J.
	Time 11:30 Am
I'A! I- PROMOTIC /A III'A	3
ather conditions in previous 24 1115	17 6 6 3 N 475 3360 Datum
S Coordinates (Zone)	
scriptive Location	RA = Musharan 12a
Huy 3 VIW GOWIT.	dy
ater Quality	DH Conductivity (μS/cm)
ssolved Oxygen (mg/L)	Air Temperature (°C)
eter Temperature (°C)	- All Temporators ( 1)
me in situ measurements takeri	S day
atercourse Dimensions & Morphology	Maximum Pool Depth(cm)
Wotercourse WIGU	The Donib
n = -1-6 ill \A/idth	95 RIIN
% Riffle	% P.961
idence of eroding banks. Comments on b	ank stability
vidence of eroding	- Nyesus
	Silt Muck
ubstrate (% cover)  Rodrock Cobble	Sand Single
Bedrock Cobbie  Boulder Gravel	
Overhanging Vegetation Woody Debris  Riparian Zone  Riparian Cover (% of watercourse shaded,	dominant vegetation, mature or early successional)
Adjacent Land Use	
Fish Habitat Potential Critical Habitat (spawning or nursery areas	aroundwater upwellings)
Critical Habitat (spawning or nursery areas	i, grounding
nore	ent)
Ol Assistant (cogeonal Defilially	on)
Migratory Obstructions (seasonal, permane	
Migratory Obstructions (Seasonal, Porman	
Migratory Obstructions (seasonal, permana	
Note any fish observations	
Note any fish observations  Waterbody Notes	Channel Grassed Swale Buried Tile
Note any fish observations  Waterbody Notes Transzoidal	Channel Grassed Swale Buried Tile
Note any fish observations  Waterbody Notes Transzoidal	Channel Grassed Swale Buried Tile
Waterbody Notes Natural Watercourse Trapezoidal Surficial Drainage (i.e. furrows) Dug	Channel Grassed Swale Buried Tile gout Pond Dominated by Aquatic Veg Dry
Note any fish observations  Waterbody Notes Transzoidal	Channel Grassed Swale Buried Tile gout Pond Dominated by Aquatic Veg Dry
Waterbody Notes Natural Watercourse Trapezoidal Surficial Drainage (i.e. furrows) Dug Other Habitat Notes, Incidental Wildlife	Channel Grassed Swale Buried Tile gout Pond Dominated by Aquatic Veg Dry



	1
Stantec	Project Name Niagara Wind
tion # RIT099-1	Design # 1/2/08/08/09
tercourse Name unichair	Field Staff K. Clayton M. Farella
otos Se photo los	Field Stati
	Time 50
te June in provious 24 hrs	N 4749101 Datum Nad
eather conditions in previous 24 hrs	1900+
os Coordinates (2016)	Inman Road ( IKM)
scriptive Location west of	
	pH 7.72 Conductivity (µS/cm) 589
ater Quality 370 c	oH 7.7Δ Conductivity (μS/cm)
ssolved Oxygen (mg/L) 3.70	Air Temperature (°C)
alor Temperalliel C)	75
me in situ measurements taken	
atercourse Dimensions & Morphology	Maximum Pool Depth (cm)
ean Watercourse Width	an Make Dooth ( )
	% Run
% Riffle	% Pool Gables regerated
vidence of eroding banks, Comments on ba	ank stability
substrate (% cover)	Sand 40 Silt 0 Muck
Hearnest	Mari Deutic
Overhanging Vegetation Woody Debris	cut Banks Deep Pool Watercress Aquatic Ve
n-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded,	cut Banks Deep Pool Watercress Aquatic Ve
n-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris	cut Banks Deep Pool Watercress Aquatic Version Boulder Other a gard dominant vegetation, mature or early successional)
n-water Cover Cover Types Present (circle): Diverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, Adjacent Land Use	cut Banks Deep Pool Watercress Aquatic Version Boulder Other a gard dominant vegetation, mature or early successional)
n-water Cover Cover Types Present (circle): Diverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, Adjacent Land Use	cut Banks Deep Pool Watercress Aquatic Version Boulder Other a gard dominant vegetation, mature or early successional)
n-water Cover Cover Types Present (circle): Diverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, Adjacent Land Use	cut Banks Deep Pool Watercress Aquatic Version Boulder Other a gard dominant vegetation, mature or early successional)
n-water Cover Cover Types Present (circle): Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, a support of the country of the coun	dominant vegetation, mature or early successional)  grasses economic successional  grasses economic successional  grasses economic successional  grasses economic successional
n-water Cover Cover Types Present (circle): Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, a support of the country of the coun	dominant vegetation, mature or early successional)  grasses economic successional  grasses economic successional  grasses economic successional  grasses economic successional
n-water Cover Cover Types Present (circle): Dverhanging Vegetation  Riparian Zone Riparian Cover (% of watercourse shaded, and a continuous an	cut Banks Deep Pool Watercress Aquatic Version and Boulder Other and a grant and a grant successional) are seen and successional and seed are seen and successional and seed are seen and seed and seed are seen and seed are seed and seed are seen and seed are seed as a seed are seed are seed as a seed ar
n-water Cover Cover Types Present (circle): Dverhanging Vegetation  Riparian Zone Riparian Cover (% of watercourse shaded, and a continuous an	cut Banks Deep Pool Watercress Aquatic Version and Boulder Other and a grant and a grant successional) are seen and successional and seed are seen and successional and seed are seen and seed and seed are seen and seed are seed and seed are seen and seed are seed as a seed are seed are seed as a seed ar
n-water Cover Cover Types Present (circle): Dverhanging Vegetation  Riparian Zone Riparian Cover (% of watercourse shaded, and a continuous an	cut Banks Deep Pool Watercress Aquatic Version and Boulder Other and a grant and a grant successional) are seen and successional and seed are seen and successional and seed are seen and seed and seed are seen and seed are seed and seed are seen and seed are seed as a seed are seed are seed as a seed ar
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas Migratory Obstructions (seasonal, permane)  Note any fish observations  Waterbody Notes  Natural Watercourse  Industry Obstructions  Natural Watercourse  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)	cut Banks Deep Pool Watercress Aquatic Version Boulder Other algae dominant vegetation, mature or early successional)  grasses Pool Watercress Aquatic Version Boulder Other algae dominant vegetation, mature or early successional)  groundwater upwellings)  channel Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas Migratory Obstructions (seasonal, permane)  Note any fish observations  Waterbody Notes  Natural Watercourse  Industry Obstructions  Natural Watercourse  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)	cut Banks Deep Pool Watercress Aquatic Version Boulder Other algae dominant vegetation, mature or early successional)  grasses Pool Watercress Aquatic Version Boulder Other algae dominant vegetation, mature or early successional)  groundwater upwellings)  channel Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas Migratory Obstructions (seasonal, permane)  Note any fish observations  Waterbody Notes  Natural Watercourse  Industry Obstructions  Natural Watercourse  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)	cut Banks Deep Pool Watercress Aquatic Version Boulder Other algae dominant vegetation, mature or early successional)  grasses Pool Watercress Aquatic Version Boulder Other algae dominant vegetation, mature or early successional)  groundwater upwellings)  channel Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas Migratory Obstructions (seasonal, permane)  Note any fish observations  Waterbody Notes  Natural Watercourse  Industry Obstructions  Natural Watercourse  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)	cut Banks Deep Pool Watercress Aquatic Version Boulder Other algae dominant vegetation, mature or early successional)  grasses Pool Watercress Aquatic Version Boulder Other algae dominant vegetation, mature or early successional)  groundwater upwellings)  channel Grassed Swale Buried Tile Dominated by Aquatic Veg Dry
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas Migratory Obstructions (seasonal, permane)  Note any fish observations  Waterbody Notes  Natural Watercourse  Industry Obstructions  Natural Watercourse  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Trapezoidal (Seasonal)  Dugger  Trapezoidal (Seasonal)	cut Banks Deep Pool Watercress Aquatic Version and Boulder Other and a grant and a grant successional) are seen and successional and seed are seen and successional and seed are seen and seed and seed are seen and seed are seed and seed are seen and seed are seed as a seed are seed are seed as a seed ar
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas Migratory Obstructions (seasonal, permane)  Note any fish observations  Waterbody Notes  Natural Watercourse  Natural Watercourse  Other Habitat Notes, Incidental Wildlife	cut Banks Deep Pool Watercress Aquatic Veg Boulder Other a gard Aquatic Veg Boulder Other a gard Aquatic Veg Dry Dominated by Aquatic Veg Dry Dry Observations, etc.
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas Migratory Obstructions (seasonal, permane)  Note any fish observations  Waterbody Notes  Natural Watercourse  Natural Watercourse  Other Habitat Notes, Incidental Wildlife	cut Banks Deep Pool Watercress Aquatic Veg Boulder Other a gard Aquatic Veg Boulder Other a gard Aquatic Veg Dry Dominated by Aquatic Veg Dry Dry Observations, etc.
Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas Migratory Obstructions (seasonal, permane) Note any fish observations  Waterbody Notes Natural Watercourse Natural Watercourse  Note Habitat Notes, Incidental Wildlife	cut Banks Deep Pool Watercress Aquatic Veg Boulder Other a gard Aquatic Veg Boulder Other a gard Aquatic Veg Dry Dominated by Aquatic Veg Dry Dry Observations, etc.

ag field Riparian veg dominated by array head of REA duckweed R11T099-1 ag field. ag field InmanRoad



tation # Project Name Project Name Project Name Project Name Project #   C 950   C   Nater Course Name   Project Name Project   C 950   C   Nater Country   Project Name   Project Name   C 950   C   Nater Country   Project Name   Project Name   C 950   C   Nater Country   Project Name   Project Name   C 950   C   Nater Country   Project Name   Project   Name   C 950   C   Nater Country   Project Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project   Name   Project	Statilet	()(2)
Avater conditions in previous 24 hrs hotos of the visit of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure of the conditions in previous 24 hrs hate eventure o	Mation # PILTO99-2	Project Name Nagara College
Adjacent Land Use    Cover Types Present (circle):   Undercut Banks   Deep Pool   Watercess   Aquatic Veg	Material III Marie Valoria	
Nater Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Circlal Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Fish Habitat Potential Critical Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Other Habitat Notes, Incidental Wildlife Observations, etc.	Valer Course Hamo A 14 The State of Table 19 The Asset 19	Field Staff 16 Clay Hen Florida Control
Veather conditions in previous 24 hrs SPS Coordinates (Zone) SPS Coo		Time
Poscriptive Location  Water Quality Dissolved Oxygen (mg/L) Dissolved Oxygen (	Jate	in, hot ahung
Postcriptive Location  Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Water Course Width  (m)  Waximum Pool Depth  (cm)  Wean Water Depth  (cm)  Wean Water Depth  (cm)  Water Temperature (°C)  Water Depth  (cm)  Water Court  Water Cover  Clay  Water Silt  Muck  Boulder  Gravel  Clay  Water Other  Cover Types Present (circle):  Undercut Banks  Deep Pool  Watercress  Qualitic Veg  Overhanging Vegetation  Woody Debris  Boulder  Other  Watercress  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse  Trapezoidal Channel  Grassed Swale  Buried Tile  Dominated by Aquatic Veg  Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	veather conditions in previous 17	20096 N 4749360 Datum Nago
Dissolved Oxygen (mg/L)	PS Cooldinates (2010)	man Road
Dissolved Oxygen (mg/L)	Descriptive Location	
Dissolved Oxygen (mg/L)	Water Quality	Conductivity (uS/cm) 870
Water Temperature (*C)  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm) Mean Water De	Dissolved Oxygen (mg/L) 2 · 70	H_+++1 Conductivity (µ5/cm) _5/
Watercourse Dimensions & Morphology Mean Watercourse Width	Mater Temperature (°C) 18.08	Air Température (°C)
Mean Watercourse Width (m) Mean Water Depth (cm) % Pool % Run (cm) % Flat Evidence of eroding banks, Comments on bank stability  Substrate (% cover)	Time in situ measurements taken	
Mean Watercourse Width (m) Mean Water Depth (cm) % Pool % Run (cm) % Flat Evidence of eroding banks, Comments on bank stability  Substrate (% cover)	Watercourse Dimensions & Morphology	Maximum Rool Depth O SO (cm)
Mean Bankfull Wildth	Mean Watercourse Width 📿 · 🔑 (III)	Maximum our Dopu.
Substrate (% cover) Bedrock Boulder Gravel Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Overhanging Vegetation Woody Debris Boulder Ciparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Other Habitat Notes, Incidental Wildlife Observations, etc.	Mean Bankfull Width	Mean Water Doput
Substrate (% cover) Bedrock Gravel Gr	0/ Diff(a	/0 F 001
Bedrock Cobbie Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other	Evidence of eroding banks, Comments on ba	ink stability
Bedrock Boulder Gravel Cover Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	2 1 - 4 - 4 - (9/ 20/07)	( f an ann le ) Much
Boulder Gravel Clay Man Deutitus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Substrate (% Cover)  Redrock Cobble	Sand
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Bediock	
Cover Types Present (circle): Undercut Ballis Deep Townshanging Vegetation Woody Debris Boulder Other	Boulder	and the state of t
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg  Other Habitat Notes, Incidental Wildlife Observations, etc.	Cover Types Present (circle): Undercu	ut Barks
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg  Other Habitat Notes, Incidental Wildlife Observations, etc.	Pinarian 7008	(mail)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Riparian Cover (% of watercourse shaded, d	ominant vegetation, mature or early successionary
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc		Company of the second of the s
Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc	Adjacent Land Use	
Note any fish observations	Critical Habitat (spawning or nursery areas, (	
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Migratory Obstructions (seasonal, permanent	n)
Other Habitat Notes, Incidental Wildlife Observations, etc.	Note any fish observations	
Field Notes QA/QCed by WF	Waterbody Notes Natural Watercourse Trapezoidal Ch Surficial Drainage (i.e. furrows) Dugo	hannel Grassed Swale Buried Tile ut Pond Dominated by Aquatic Veg Dry
Field Notes QA/QCed by WF	Other Habitat Notes, Incidental Wildlife O	
Field Notes Authored by C. Claufton Field Notes QA/QCed by WTF  Field Notes Authored by Advistic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc		
Field Notes Authored by C. C. Field Notes CAVICOS by	to also the	TANISH CANCED by WY
W. 4 and Lafe and Teams Aquatic Resources/Field Sheets/Stantec/Form 02 Wind Farm Waterbody Rapid Assessment Form.000	Field Notes Authored by K. Claum C. Fie	SIQ NOISS CARGOO OF
AAAA AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Teams\Artistic Resources\Fle	ld Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.000

Riparian Jeoj The same of the sa REA CPEA RITTO 99-2. Poad



#### RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

#### Stanted

Project Nagara Wind Station # 18-6 Photos Taken GPS Coordinates 177 0625878 4750847 Descriptive Location Sauth of C	Project # 16,950269 Field Staff K. Maran M. Faiella. Date Oct 22/12. Time 11:35 anal bank Rd. Fart of
Dissolved Oxygen (mg/L) pH Water Temperature (°C)	G N fer (C)  Conductivity (μS/cm)  Air Temperature (°C)  ONU IS °C
Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width	Maximum Pool Depth(cm) Mean Water Depth(cm)% Run% Flat bility
Substrate – Upstream (% cover) BedrockSiltMuckGravel	Boulder 50 Clay Cobble Marl Sand 5 Detritus
MuekGravel	BoulderClayCobble MarlSandDetritus
In-water Cover Cover Types Present (circle):  Overhanging Vegetation  Undercut Bank Woody Debris	s Deep Pool Vascular Plants Boulder Other
DownstreamAdjacent Land Use	t vegetation, mature or early successional)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundw Upstream	
Other Habitat Notes, Incidental Wildlife Observation Channel dominated to Intermittent Flav	
Field Notes Authored by K. Maran Field Notes Qu	A/QCed by Pageof



Station # 3-4	O. D	Project Name	11:01:01	# # # # # # # # # # # # # # # # # # #
Watercourse Name Unr	ranged trakut	Project #	Niagara 16098026	<u> </u>
Photos 331-336		Field Staff	Major M	24
Date Octaalia	<u> </u>	Time	3/2	Facella
Weather conditions in pre	vious 24 hrsS	LANGUZIS	00	
GPS Coordinates (Zone)_	JITE QGIS		4764195	Datum Nacl 8
Descriptive Location	040	oistor Grainsb	brough Taur	
<i>U</i> + \( \tau \)	ughan Road	*	· ·	
Water Quality		art arts.		
Dissolved Oxygen (mg/L)	11.24 pH	7.99 Conduc	ctivity (µS/cm)	04
Water Temparature (°C)	8.38	Air Temperature	1,000	0 2
Time in situ measurements	s taken <u>/ O</u>	:40	10	
Watercourse Dimensions Mean Watercourse Width Mean Bankfull Width % Riffle	(m) (m) 24 P/	Maximum Pool I Mean Water Dep ool	Depth 60 oth 40 Run	_(cm) Standard _(cm) % Flat
Evidence of eroding banks,	, Comments on bank s	stability all o	rassed - sta	
		<u> </u>		
Substrate (% cover)	Specially			:
Bedrock	Cobble	Sand	80 Silt	<u>Muck</u>
Boulder	Gravel	Clay	Marl	Dotritus
n-water Cover				Deullus du glaves
Overhanging Vegetation	ر: المصودة على   Woody Debris		D Vvatercress her <u>algae</u>	Aquanti veg
Riparian Zone Riparian Cover (% of watero		int vegetation, matu	re or early success	ional)
(2)	idential in	oad aa	A FIN	
Fish Habitat Potential Critical Habitat (spawning or Potential Migratory Obstructions (seas	onal, permanent)			
ete any fish observations	hickurgetation			•
and the second section is	some obser	<u>vra</u> .		
unicial Drainage (i.e. furrows		Dominated	by Aquatic Veg	ried Tile
ther Habitat Notes, Incider	grasses will a	lons, etc. Ripas		Comprised
5m from Cul	パンナー よう ら	in Lide	le) haveve	- narrail
Id Notes Authored by 4 Mas 0	<b>\</b>	100		
	Fleid Notes Q/			



Watercourse Name unna	1000 0 -	Project Name	Nidera	ra Wind
Photos 337-340	mea whitery	Project #	09502	S 91
Date Oct as //a	•	Field Staff 1	Masan	1 Fair 11,
Weather conditions in previous	204 bas	Time 100	Ч	
GPS Coordinates (Zone)	s 24 hrs Sanny	15%		
Descriptive Location	E 06189	N	W7/11/256	Datum N
Descriptive Location	tot Kric		NSTA	Icho Rogo
	e) author	Vauahan	20	·
Water Quality		J	·	
Dissolved Oxygen (mg/L) 6	.93 pH 8.	38 Conducti		
Water Temperature (°C)			vity (µS/cm)	199
Time in situ measurements take	00	Air Temperature (	°C)S^C	
	311	:0 (o		
Watercourse Dimensions & M	forphology	•		
Mean Watercourse Width		lavimum Bool Da		
Mean Bankfull Width	/ /	<i>l</i> aximum Pool De lean Water Deptt	pun	(cm)
% Riffle	·	•		(cm)
Evidence of eroding banks, Con	nments on bank stabil	ithe	% Run	%
			<u> </u>	Star 2
Substrate (% cover)				
Bedrock	Cobble			
Boulder	Cobble	Sand	Sitt	Muck
		Clay_	Marl	Detrit
Cover Types Present (circle): Overhanging Vegetation Wo	Undercut Banks body Debris Bo	Deep Pool Pulder Othe	Watercress	Aquatic Ve
Overhanging Vegetation Wo	oody Debris Bo	ulder Othe	r	
Overhanging Vegetation Work  Riparian Zone  Riparian Cover (% of watercourse	oody Debris Bo	oulder Othe	r	
Overhanging Vegetation Work Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use	e shaded, dominant v	egetation, mature	r	
Overhanging Vegetation Work  Riparian Zone  Riparian Cover (% of watercourse	e shaded, dominant v	oulder Othe	r	
Overhanging Vegetation Work Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use	e shaded, dominant v	egetation, mature	r	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use	e shaded, dominant vo	egetation, mature	r	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse	e shaded, dominant verbushlot,	egetation, mature	r	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse	e shaded, dominant verbushlot,	egetation, mature	r	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Rigratory Obstructions (seasonal,	e shaded, dominant very areas, groundwater permanent)	egetation, mature	r	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse	e shaded, dominant verbushlot,	egetation, mature	r	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse Rigratory Obstructions (seasonal,	e shaded, dominant verbushlot, bushlot, bushlot, bushlot, permanent)	egetation, mature	r	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse Aligratory Obstructions (seasonal,	e shaded, dominant verbushlot, bushlot, bushlot, bushlot, permanent)	egetation, mature	r	
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse digratory Obstructions (seasonal, acte any fish observations	e shaded, dominant very areas, groundwater permanent)	egetation, mature	or early succes	
Riparian Zone Riparian Cover (% of watercourse Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse Rigratory Obstructions (seasonal, Cete any fish observations  Vaterbody Notes Ratural Watercourse  Trace	e shaded, dominant very areas, groundwater permanent)	egetation, mature	or early succes	ssional)
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nurse digratory Obstructions (seasonal, acte any fish observations	e shaded, dominant very areas, groundwater permanent)	egetation, mature	or early succes	ssional)
Riparian Zone Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse digratory Obstructions (seasonal, lete any fish observations  Atterbody Notes atural Watercourse  Trape urficial Drainage (i.e. furrows)	e shaded, dominant very areas, groundwate permanent)  ezoidal Channel  Dugout Pond	egetation, mature	or early succes	ssional)
Riparian Zone Riparian Cover (% of watercourse Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse Rigratory Obstructions (seasonal, Cete any fish observations  Fish Habitat Potential Critical Habitat Potential Critical Habitat Potential Critical Habitat (spawning or nurse Rigratory Obstructions (seasonal, Cete any fish observations  Fish Habitat Potential Critical Drainage (i.e. furrows)  Caterbody Notes Caterbody	e shaded, dominant very areas, groundwater permanent)  ezoidal Channel Dugout Pond	egetation, mature  regetation, mature  regetation, mature  Grassed Sw  Dominated by	or early succes	ssional)
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse Rigratory Obstructions (seasonal, Lete any fish observations  Atterbody Notes Laterbody Notes Lat	e shaded, dominant very areas, groundwate permanent)  ezoidal Channel  Dugout Pond  Vildlife Observations	egetation, mature  regetation, mature  regetation, mature  Grassed Sw  Dominated by	or early succes	ssional)
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse digratory Obstructions (seasonal, Lete any fish observations  Atterbody Notes Caterbody Notes Cat	e shaded, dominant very areas, groundwate permanent)  ezoidal Channel Dugout Pond Viidiife Observations	egetation, mature  regetation, mature  regetation, mature  Grassed Sw  Dominated by	or early succes	Buried Tile
Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse Rigratory Obstructions (seasonal, Lete any fish observations  Atterbody Notes Laterbody Notes Lat	e shaded, dominant very areas, groundwate permanent)  ezoidal Channel  Dugout Pond  Viidlife Observations	Grassed Sw. Dominated by	rale E Aquatic Veg	Buried Tile
Riparlan Zone Riparlan Zone Riparlan Cover (% of watercourse Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nurse Rigratory Obstructions (seasonal, Cete any fish observations  Vaterbody Notes Patural Watercourse  Authoritical Drainage (i.e. furrows)  Cher Habitat Notes, Incidental Waterbody Notes  Authoritical Drainage (i.e. furrows)	e shaded, dominant very areas, groundwate permanent)  ezoidal Channel Dugout Pond Viidiife Observations	Grassed Sw. Dominated by	rale E Aquatic Veg	Buried Tile
Riparian Zone Riparian Zone Riparian Cover (% of watercourse Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse ligratory Obstructions (seasonal, Cete any fish observations  Adjacent Land Use  Tish Habitat Potential Critical Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use  Tish Habitat Potential Critical Habitat (spawning or nurse  Adjacent Land Use	e shaded, dominant very areas, groundwate permanent)  ezoidal Channel Dugout Pond Viidiife Observations	Grassed Sw. Dominated by	rale E Aquatic Veg	Buried Tile



Station #		# Liroinal #		
Watercourse Name White Photos 343 - 34		Project #	144720 01	29
Date Oct 22/12	<del>}</del>	Field Staff K	Mason, M.	Fairlia -
Weather conditions in previou	is 24 hrs Cun	111118 11114 15°C	<u>X</u>	
GPS Coordinates (Zone)		Tags N	4-1/110/24	Datum 6
Descriptive Location			Least of	Datum Va
west	DA 437	02017	A FOUT OF	Erick Po
Water Quality	1.60		mcanishi.	%
Dissolved Oxygen (mg/L)8		Conduc	tivity (µS/cm)	184
Water Temperature (°C) 9		Air Temperature	(°C) <u>15°C</u>	
Time in situ measurements tal	Ken	スプ		*
Watercourse Dimensions &	Morphology			
Mean Watercourse Width 🔍	<u>· 5 (</u> m)	Maximum Pool D	epth 50	(cm) < tarl
Mean Bankfull Width 🔼 📙	(m)	Mean Water Dep		(cm)
% Riffle	% Po		% Run	% F
Evidence of eroding banks, Co	omments on bank st	ability <u>Ctabl</u>	L - all a	-055-69
			J	
Substrate (% cover)				* · · · · · · · · · · · · · · · · · · ·
Bedrock	Cobble		_80 Sin	/O Muck
Boulder	Gravel	O Clay	Marl	
water Cover		50	a locat.	) II k
	:: 1 boots a cons	000	alout.	
Cover Types Present (circle): Overhanging Vegetation Villparlan Zone	Voody Debris	Boulder Ott	er algaes	Aquatic Veg
Ilparian Zone Ilparian Cover (% of watercould	rse shaded, domina	Boulder Oth	re or early succes	*
Cover Types Present (circle): Overhanging Vegetation Veliparian Zone Iliparian Cover (% of watercould a continue of the county o	rse shaded, domina	Boulder Oth	re or early succes	Aquaic veg
Cover Types Present (circle): Diverhanging Vegetation Villparlan Zone liparlan Cover (% of watercound diacent Land Use  Ish Habitat Potential ritical Habitat (spawning or number)	rse shaded, dominar	nt vegetation, matu	re or early succes	Aquaic veg
Cover Types Present (circle): Everhanging Vegetation Ve	rse shaded, dominar	Boulder Other Natural And Andrew Coad ( ) Andr	re or early succes	Aquaic veg
Divertiges Present (circle): Diverhanging Vegetation Ve	rse shaded, dominar granes, en rsery areas, groundy al, permanent)	Boulder Other Notice of the Poulder Other Notice of the Po	re or early succes	Aquatic Veg
Cover Types Present (circle): Diverhanging Vegetation Villparlan Zone liparlan Cover (% of watercound diacent Land Use  Ish Habitat Potential ritical Habitat (spawning or number)	rse shaded, dominar	Boulder Other Notice of the Poulder Other Notice of the Po	re or early succes	Aquatic Veg
Ilparian Zone Ilparian Zone Ilparian Cover (% of watercound Idjacent Land Use Ish Habitat Potential Initical Habitat (spawning or number any fish observations	rse shaded, dominar granes, en rsery areas, groundy al, permanent)	Boulder Oth  nt vegetation, maturates  voad, vii  water upwellings)  on e	re or early succes	Aquaic Veg
Ilparian Zone Ilparian Zone Ilparian Cover (% of watercound diacent Land Use Ish Habitat Potential ritical Habitat (spawning or number any fish observations	rse shaded, dominar  granes felds  rsery areas, grounder  al, permanent)	Boulder Oth  nt vegetation, maturated water upwellings)  Son e  Grassed	ter algaes  re or early succes  ral resid	Aquaic Veg
Ilparian Zone Ilparian Zone Ilparian Cover (% of watercound Idjacent Land Use Ish Habitat Potential Initical Habitat (spawning or number any fish observations	rse shaded, dominar  granes felds  rsery areas, grounder  al, permanent)	Boulder Oth  nt vegetation, maturated water upwellings)  Son e  Grassed	ter algaes  re or early succes  ral resid	Aquaic Veg
Ilparian Zone Iliparian Zone Iliparian Cover (% of watercounce Iliparian Zone Iliparian	rse shaded, dominar  Granes  G	Boulder Ott  nt vegetation, maturated water upwellings)  Grassed S  Dominated	re or early succes  ral resid	Aquaic Veg
Ilparian Zone Iliparian Zone Iliparian Cover (% of watercounding Vegetation) Iliparian Cover (% of watercounding Cover (%	rse shaded, dominar  granes felds  rsery areas, groundy al, permanent)  apezoidal Channel  Dugout Pond  Wildlife Observati	Boulder Ott  nt vegetation, maturated water upwellings)  Grassed Grassed Gominated	re or early succes  ral resid	Aquaic Veg
Ilparian Zone Iliparian Zone Iliparian Cover (% of watercounce Iliparian Zone Iliparian	rse shaded, dominar  grane 5  grane 6  grane 6  grane 7  grane 7  grane 7  grane 7  grane 8	Boulder Ott  nt vegetation, maturated water upwellings)  Grassed Grassed Gominated	re or early succes  ral resid	Aquaic Veg
Ilparian Zone Iliparian Zone Iliparian Cover (% of watercounding Vegetation) Iliparian Cover (% of watercounding Cover (%	rse shaded, dominar  grange Selection  grange Selection  grange Selection  rsery areas, groundy  al, permanent)  apezoidal Channel _  Dugout Pond  Wildlife Observation  To a control of the control of t	Boulder Ott  nt vegetation, maturated water upwellings)  Grassed Grassed Gominated	re or early succes  ral resid	Aquaic Veg
Ilparian Zone Iliparian Cover (% of watercount Iliparian Zone I	rse shaded, dominar  grane 5  grane 6  grane 6  grane 7  grane 7  grane 7  grane 7  grane 8	Boulder Ott  nt vegetation, maturated water upwellings)  Grassed Grassed Gominated	re or early succes  ral resid	Aquaic Veg
Ilparian Zone Iliparian Zone Iliparian Cover (% of watercounce Iliparian Zone Iliparian	rse shaded, dominar  grane 5  grane 6  grane 6  grane 7  grane 7  grane 7  grane 7  grane 8	Boulder Ott  nt vegetation, maturated voad virus  vater upwellings)  Grassed:  Dominated  lons, etc.	re or early succes  ral resid	Aquaic Jeg



Station # 4-4 10 3		Project Name	Niagaro	( Wind
Watercourse Name \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	med Tributan	Project #(\(\bar{I}_0\)	095026	4
Photos 349-35	52	Field Staff 12.	Masan, M. Fa	rella
Date <u>೧೭+ みみパる</u>		Time	30	
Weather conditions in previous	24 hrs <u>Sunn</u>	1150c		
GPS Coordinates (Zone)	TE 0619	735 N	4764957	<u>Datum Nad</u> ठ:
Descriptive Location	tt of Now	ghan ed.	fact of	4-2 102013
	enot ch f	er VISI		
Water Quality	/ not ugh f			
Dissolved Oxygen (mg/L)	pH	Conduct	ivity (µS/cm)	
Water Temperature (°C)		Air Temperature	(°C) <u>15°C</u>	
Time in situ measurements tak	en			
Watercourse Dimensions & M	~ -	•		1
Mean Watercourse Width		Maximum Pool D		_(cm) _taxo()
Mean Bankfull Width	(m)	Mean Water Dept		_(cm) > 1 water
% Riffle	% Pool		% Run	% Flat
Evidence of eroding banks, Co	mments on bank stal	bility <u>Sta</u>	ble -utg	eta tion
Substrate (% cover)				:
Bedrock	Cobble	Sand	80 Silt	/O Muck
Boulder	Gravel		Siit Mari	CONTRACTOR OF THE PROPERTY OF THE PARTY OF T
Overhanging Vegetation W Riparian Zone Riparian Cover (% of watercour	rse shaded, dominan	t vegetation, matu	re or early succes	sional)
Adjacent Land Use	70 grass			
voan,	runa resio	untial, Co.	rn, bushio	and the second s
Fish Habitat Potential	. १९८ - च			
Critical Habitat (spawning or nu	rserv areas, groundy	ater unwellings)		
none		ato. aptronings,		
Migratory Obstructions (seasons				
		N CNATED		
Note any fish observations	UNL UBLEY UTD			
Waterbody Notes Natural Watercourse Transcription Surficial Drainage (i.e. furrows)_			Swale I by Aquatic Veg_	
Other Habitat Notes, Incidenta	Nidlife Observati	ons, etc. Vs s le a Typ workedn		rainage feat
Field Notes Authored by K. M. A.S.	Field Notes QA	VQCed by Mf		



Water Course Name
Field Staff
Weather conditions in previous 24 hrs
GPS Coordinates (Zone)  Descriptive Location  Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Time in situ measurements taken  Watercourse Dimensions & Morphology  Mean Watercourse Width  (m)  Mean Water Depth  % Riffle  % Pool  Evidence of eroding banks, Comments on bank stability  Substrate (% cover)  Bedrock  Boulder  Gravel  In-water Cover
Descriptive Location  Water Quality Dissolved Oxygen (mg/L) 9 9 9 Air Temperature (°C) Air Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm)  % Riffle % Pool % Run % Full Pool (cm) % Riffle % Pool % Run % Full Pool (cm) % Riffle % Pool % Run % Full Pool (cm) % Bedrock Cobble Sand Silt Muck Boulder Gravel Ociay Mari Detritution of the state of the
Water Quality Dissolved Oxygen (mg/L) 919 pH 8.04 Conductivity (µS/cm) 13.89 Water Temperature (°C) 10.33 Air Temperature (°C) 50  Watercourse Dimensions & Morphology Mean Watercourse Width 5 (m) Maximum Pool Depth 6 (cm) Mean Bankfull Width 5 (m) Mean Water Depth 30 (cm)  Watercourse Ording banks, Comments on bank stability  Substrate (% cover)  Bedrock Cobble Sand 8 Silt 5 Muck Boulder Gravel 0 Clay Marl 5 Detrituellers of the cover of the c
Dissolved Oxygen (mg/L) 9 9 9 PH 8 0 Conductivity (µS/cm) 389  Water Temperature (°C) 10 3 Air Temperature (°C) 5 C  Time in situ measurements taken
Water Temperature (°C)
Watercourse Dimensions & Morphology  Mean Watercourse Width (m) Maximum Pool Depth (cm)  Mean Bankfull Width (m) Mean Water Depth (cm)  % Riffle % Pool % Run % Fundaments on bank stability  Substrate (% cover)  Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl 5 Detritutions of the same o
Watercourse Dimensions & Morphology Mean Watercourse Width
Mean Watercourse Width (m) Maximum Pool Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm) Mean Water Depth (cm) Mean Water Depth (m) Mean Water Depth
Mean Watercourse Width (m) Maximum Pool Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm) Mean Water Depth (cm) Mean Water Depth (m) Mean Water Depth
Mean Bankfull Width
Evidence of eroding banks, Comments on bank stability  Stable Well regulated Stable  Substrate (% cover)  Bedrock Cobble Sand Silt S Muck Boulder Gravel Clay Marl 5 Detritu
Substrate (% cover)  Bedrock Cobble Sand Silt S Muck Boulder Gravel Clay Marl 5 Detritu
Bedrock Cobble Sand Silt 5 Muck Boulder Gravel O Clay Marl 5 Detritu
Bedrock Cobble Sand Silt 5 Muck Boulder Gravel O Clay Marl 5 Detritu
In-water Cover
In-water Cover
The first Devices and the second seco
Overhanging Vegetation Woody Debris Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Adjacent Land Use
road ag. Field pasture
Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Migratory Obstructions (seasonal, permanent)
Note any fish observations
Waterbody Notes
Natural Watercourse / Trapezoidal Channel Grassed Swale Buried Tile Gurficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observations, etc. Channel is winder a culti-
regetation water in channel is whenky a covered in du
eld Notes Authored by K. M. a. S. W. State Name Canal State Name Canad State Name Canal State Name Canal State Name Canal State Name Canad Sta



Station # (0-1 ***		Project Name	n Linnan -	1.11.4
Watercourse Name Whno	IWYPO TVID.	Project Name Project # (0.00	NIAGOVA	
Photos 358-361		Field Staff KM		
Date Octabla		IIMA 1 / O !	wow, M. Haif	11 a ·
Weather conditions in previous	us 24 hrs Swy	Valle S'C		
GPS Coordinates (Zone)	IT F DIST	9 0 1/2	1/0000	N-4
Descriptive Location	. off Krick			Datum Nod
		stein Roa	1.04 810	MORE COLD
Water Quality	dry		<del></del>	
Dissolved Oxygen (mg/L)	Ha	0		
Water Temperature (°C)	γ pn_	SOFICIOLISM	y (μS/cm)	
Time in situ measurements ta	ken	Air Temperature (°C	)	
Watercourse Dimensions &	Vernhelem	1 200		
Mean Watercourse Width	inothiology	/dm		
Mean Bankfull Width	(m) 5(m)	Maximum Pool Dept	h(	cm)
% Riffle	/% Pc	wean water Depth_	((	cm)
Evidence of eroding banks, Co	Omments on bank s	tobility	_% Run	% Fla
		Lability		
Substrate (% cover)				
Bedrock	Cobble		· · · · · ·	
Boulder	Gravel	Sand	Silt	Muck
	craver	Clay		Detritus
In-water Cover		lo	0% soil 5	botrate
Overhanging Vegetation	Undercut Bar	nks Deep Pool	Watercress	Aquauc /eg
Adjacent Land Use			r early succession	ai)
	fields , v	od d		
Fish Habitat Potential	-a. ≰			
Critical Habitat (spawning or nur	rserv areas, ground	water unwellinge)		
	V M V	rater apwellings)		
Aigratory Obstructions (seasona				
loto any fish shappy time	dol -		•	
lote any fish observations	None			
Vaterbody Notes				
latural Watercourse Tra	Dezoidal Channel	Granned Com		
urficial Drainage (i.e. furrows)	Dugout Pond	Dominated by A	e Burier	d Tile
- · · · · · · · · · · · · · · · · · · ·		Dominated by A	quatic veg	Dry
ther Habitat Notes, Incidental	Wildlife Observati	ons etc. VPIAT MA	MAR ALA	
detinition - p	ossibly ma	Le DIC	THUY CYUN	101
Us side is pibe	20			
*			And the second s	
d Notes Authored by K. MICON	Field Notes QA	OCed by Pro P.		
01809tracoursellatemailate and Town 14				



Station #			ect Name _				
	aned tr	b Proje	ect #1/o	09508	169	Wit	
Photos 362-361		Field	Staff Z	Masw.	$\Lambda$ , $\Lambda$	Fair	ella.
Date Oct 23/	and the same of th	Time		2			
Weather conditions in previous		Sanny					
GPS Coordinates (Zone)		19064		4761	625	Datu	m Nad
Descriptive Location	0++ 0+	YVICK	<u> </u>	O. Sa	44	04	ZUMSt
	<u> </u>						
Water Quality							
Dissolved Oxygen (mg/L)		18.10	_ Conduct	ivity (uS/c	m) (o	10	
Nater Temperature (°C)	3 . 00	Air Te	emperature	(°C)	700		
Time in situ measurements tal	ken <u>l</u> 2	<u>L:15</u>	_	. ,			
Watercourse Dimensions &	Morphology	•					
Mean Watercourse Width	,5 (m)	Mayin	num Pool D	noth 3	$\wedge$	()	
Mean Bankfull Width	(m)	Mean	Water Dept	Papai		(cm)	dand in
% Riffle	%	Pool	Trator Dept	% Ru	<u></u>	(cm)	% Flat
vidence of eroding banks, Co	omments on bank	stability	Stable			n_e \ a!	
		-					depresent (S)
ubstrate (% cover)						:	
Bedrock	Cobble		Sand	QΛ	<b>5</b>	10	
Boulder	Gravel	1	_Sano _Clay	00	_Silt	10	_Muck
			Clav		Marl		_Detritus
-water Cover			··· · · · · · · · · · · · · · · · · ·				000
over Types Present (circle): verhanging Vegetation William Vegetation		Boulde	Deep Pool r Oth	er	creșs	Aqu	auc veg
ver Types Present (circle): verhanging Vegetation W  Iparlan Zone iparlan Cover (% of watercour	rse shaded, domi	Boulde	Deep Pool r Oth	ere or early	creșs ————————————————————————————————————	Aqu	auc veg
lparlan Cover (% of watercour	voody Debris	Boulde	Deep Pooler Other	ere or early	creșs ————————————————————————————————————	Aqu	
iparian Cover (% of watercourding Use  Iparian Cover (% of watercourding Of Nurse)	rse shaded, domi	Boulde inant veget	Deep Pool or Oth ation, matur	ere or early	creșs ————————————————————————————————————	Aqu	auc veg
Iparlan Zone Iparlan Zone Iparlan Cover (% of watercour Idjacent Land Use  sh Habitat Potential Initical Habitat (spawning or nur	rse shaded, domi ralses, ea feld, vi rsery areas, ground none al, permanent)	Boulde inant veget	Deep Pool or Oth ation, matur	ere or early	creșs ————————————————————————————————————	Aqu	auc veg
djacent Land Use	rse shaded, domi	Boulde inant veget	Deep Pool or Oth ation, matur	ere or early	creșs ————————————————————————————————————	Aqu	auc veg
iparian Zone iparian Cover (% of watercour iparian Cover (% of watercour djacent Land Use  sh Habitat Potential ritical Habitat (spawning or nur igratory Obstructions (seasona ete any fish observations  aterbody Notes tural Watercourse Tra rficial Drainage (i.e. furrows)	rse shaded, domi ralses, ea feld, vi rsery areas, ground al, permanent) al, permanent) apezoidal Channe Dugout Por	Boulde inant veget and	Deep Pool of Other ation, mature wellings) Grassed S Dominated b	ere or early wale by Aquatic	success	Aqu sional)	auc veg
Iparlan Zone Iparlan Zone Iparlan Zone Iparlan Cover (% of watercour Iparlan Cover (% of waterco	rse shaded, domi ralses, ea feld, vi rsery areas, ground al, permanent) al, permanent) apezoidal Channe Dugout Por	ndwater up	Deep Pool or Other ation, mature wellings) Grassed S Dominated b	ere or early	success	Aqu sional)	auc v'eg
Iparlan Zone Iparlan Zone Iparlan Zone Iparlan Cover (% of watercour Iparlan Cover (% of waterco	rse shaded, domi ralses ed realses ed realse	ndwater up	Deep Pool of Other	ere or early	success	Aqu sional)	auc v'eg



Watercourse Name Unname Photos 368-372		F: _ /		<u> </u>
Date 0c+ 22/12		Field Staff	Muson, 1	1 Faiella
Weather conditions in previous	24 hrs	Time <u>/ 3 : 4</u>	-{3	
GPS Coordinates (Zone)	7 F 00 0			
Descriptive Location	f of Col		V4760425	
		zvoza ja	- natho o-	f Concessi
Water Quality	no w	ater		
Dissolved Oxygen (mg/L)	Нα	Conduc	tivity (u.C.lom)	
Water Temperature (°C)	*	Air Temperature	Mary (morally	
Time in situ measurements take	∍n	· ··· · · · · · · · · · · · · · · · ·		
Watercourse Dimensions & M	lorphology	moist		
Mean Watercourse Width	(m)	Maximum Pool (	)enth	/om)
Mean Bankfull Width	(m)	Mean Water De	oth	(cm) (cm)
% Riffle	% Po	m!	% Run	(CIII) %
Evidence of eroding banks, Con	nments on bank s	tability Stabl		assed tha
	to doar	L.S.	U	
Substrate (% cover)				· LOVAD
Bedrock	Cobble	Sand	Silt	100 Muck
77	Gravel	Clay	Tild tild tild tild tild tild tild tild t	
over Types Present (circle): verhanging Vegetation Wo Iparlan Zone	Undercut Ba	nks Deep Poo Boulder Ot	her	Aquaiic Ve
N-water Cover Sover Types Present (circle): Everhanging Vegetation Wo  Iparlan Zone  Iparlan Cover (% of watercours	Undercut Bar pody Debris e shaded, domina	nks Deep Poo Boulder Ot	Watercress	Aquanc Ve
n-water Cover Sover Types Present (circle): Overhanging Vegetation Wo Ilparlan Zone Iparlan Cover (% of watercours	Undercut Bal pody Debris e shaded, domina	nks Deep Poo Boulder Ot	Watercress	Aquaiic Ve
n-water Cover Cover Types Present (circle): Dverhanging Vegetation Wo Ilparian Zone Ilparian Cover (% of watercours diacent Land Use Your (Coy) Ish Habitat Potential ritical Habitat (spawning or nurs	Undercut Bal pody Debris e shaded, domina week al gr ery areas, ground	nks Deep Poo Boulder Ot unt vegetation, matu	Watercress	Aquaiic Ve
iparian Cover (% of watercours) djacent Land Use sh Habitat Potential ritical Habitat (spawning or nurs) gratory Obstructions (seasonal,	Undercut Bar pody Debris e shaded, domina week a gr ery areas, ground permanent)	nks Deep Poo Boulder Ot unt vegetation, matu	Watercress	Aquaus Ve
cover Types Present (circle): Ever Types Present (circle): Everhanging Vegetation Wolfparlan Zone Eliparlan Cover (% of watercourse of the continuous of the	Undercut Bar pody Debris e shaded, domina wreshval gr ery areas, ground permanent)	nks Deep Poo Boulder Ot unt vegetation, matu	Watercress	Aquaiic Ve
In-water Cover Ever Types Present (circle): Everhanging Vegetation Wo Ilparlan Zone Iparlan Cover (% of watercourse Idjacent Land Use Indicat Potential Initical Habitat (spawning or nurse Igratory Obstructions (seasonal,	Undercut Bar pody Debris e shaded, domina wreshird gr ery areas, ground permanent)	nks Deep Poo Boulder Ot unt vegetation, matu	Watercress	Aquanc Ve
iparian Zone liparian Zone liparian Cover (% of watercours diacent Land Use  sh Habitat Potential ritical Habitat (spawning or nurs igratory Obstructions (seasonal, ete any fish observations	Undercut Bar pody Debris e shaded, domina wreshird gr ery areas, ground permanent)	nks Deep Poo Boulder Ot unt vegetation, matu	Watercress	Aquaus Ve
In-water Cover Cover Types Present (circle): Dverhanging Vegetation Wo Ilparlan Zone Iliparlan Cover (% of watercours Iliparlan Zone Ilipa	Undercut Bar pody Debris e shaded, domina preshold gr ery areas, ground permanent)	nks Deep Poor Boulder Ott	her	Aquauc ve
In-water Cover Cover Types Present (circle): Dverhanging Vegetation Wo Ilparlan Zone Iliparlan Cover (% of watercours Iliparlan Zone Ilipa	Undercut Bar pody Debris e shaded, domina preshold gr ery areas, ground permanent)	nks Deep Poor Boulder Ott unt vegetation, matural services and provided the control of the contr	Watercress her ire or early success	Aquauc Ve
In-water Cover Cover Types Present (circle): Overhanging Vegetation Wolliparian Zone Iliparian Cover (% of watercourse diacent Land Use Ish Habitat Potential ritical Habitat (spawning or nurse igratory Obstructions (seasonal, overhange) Ish any fish observations India ritical Watercourse Traperficial Drainage (i.e. furrows)	Undercut Bar pody Debris e shaded, domina ery areas, ground permanent) ud-fev hu	nks Deep Poor Boulder Other Int vegetation, matural section of the	her	Aquauc Ve
In-water Cover Cover Types Present (circle): Diverhanging Vegetation  Iliparian Zone Iliparian Cover (% of watercourse diagration of the country of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat Notes, incidental versions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat Notes, incidental versions (seasonal, of the circle)	e shaded, domina grand g	mks Deep Poor Boulder Ott  Int vegetation, maturaises, early  water upwellings)  CK regetation  Grassed  Dominated  ions, etc. Shall	Watercress her ire or early success	Aquauc ve
In-water Cover Cover Types Present (circle): Diverhanging Vegetation Wolliparian Zone Iliparian Cover (% of watercourse diacent Land Use Ish Habitat Potential ritical Habitat (spawning or nurse igratory Obstructions (seasonal, or any fish observations in the circle Drainage (i.e. furrows)  her Habitat Notes, incidental Veget Market State (spawning or nurse igratory Obstructions (seasonal, or any fish observations in the circle of th	ery areas, ground permanent) permanent) permanent Dugout Pond  Wildlife Observat	mks Deep Poor Boulder Ott  Int vegetation, maturaises, early  water upwellings)  CK regetation  Grassed  Dominated  ions, etc. Shall	Watercress her ire or early success	Aquauc ve
In-water Cover Cover Types Present (circle): Diverhanging Vegetation  Iliparian Zone Iliparian Cover (% of watercourse diagration of the country of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat (spawning or nurse digratory Obstructions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat Notes, incidental versions (seasonal, of the circle)  Ish Habitat Potential ritical Habitat Notes, incidental versions (seasonal, of the circle)	e shaded, domina grand g	mks Deep Poor Boulder Ott  Int vegetation, maturaises, early  water upwellings)  CK regetation  Grassed  Dominated  ions, etc. Shall	Watercress her ire or early success	Aquauc ve
In-water Cover Cover Types Present (circle): Diverhanging Vegetation Wolliparian Zone Iliparian Cover (% of watercourse diacent Land Use Ish Habitat Potential ritical Habitat (spawning or nurse igratory Obstructions (seasonal, or any fish observations in the circle Drainage (i.e. furrows)  her Habitat Notes, incidental Veget Market State (spawning or nurse igratory Obstructions (seasonal, or any fish observations in the circle of th	ery areas, ground permanent) permanent) permanent Dugout Pond  Wildlife Observat	mks Deep Poor Boulder Oth  Int vegetation, maturasses, early  water upwellings)  CK regetation  Grassed  Dominated  ions, etc. Slight  free minimal	Swale	Aquauc ve



Photos 313-3 Date Oct 3313	MILLO Tributar	Project Name		. 2 / 1	
	and the second s	Project #	160950	1 7 of VI	V)
Date		Field Staff		M. Fait	
14/		Time 3:3	6	T CARCALLE	
Weather conditions in previous	ous 24 hrs	unnu.15°C			
GPS Coordinates (Zone)			V 4759	602 Da	tum Nad
Descriptive Location o	ff of Conce	stion (a. v		-f-side	
	<u>salroan</u>	44		·	
Water Quality		/ 4~1			
Dissolved Oxygen (mg/L)	рН	Condin	atin site ( ) . O (	1	
Water Temperature (°C)	· -/	Air Temperature	cuvity (µ5/Ci	m)	
Time in situ measurements t	taken	Air Temperature	, ( U		
Watercourse Dimensions	& Mornholom	. /	101		
Mean Watercourse Width	(m)	Mariania			
Mean Bankfull Width	(m)	Maximum Pool [	Jepth		
% Riffle	% Pa	Mean Water Dep			
Evidence of eroding banks, (	Comments on bank st	/	% Ru		% FI
			elline	<u> </u>	<u>a\</u>
Substrate (% cover)					
Bedrock	Cobble				
Boulder	COUNIE Gravel		_50	_Sin <i>S</i>	Muck
	CIQYGI	Clay		Marl	Detritus
n-water Cover					Typ!
Cover Types Present (circle): Overhanging Vegetation	Undercut Ban Woody Debris		l Waterd her	reșs (Aq	uauc Veg
djacent Land Use	1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	nt vegetation, matu	re or early s	successional)	
	41/200 CCV/L	dand anti	ire		
		3/4		•	
ish Habitat Potential ritical Habitat (spawning or no	ursery areas, groundy nal, permanent)	,			
ish Habitat Potential ritical Habitat (spawning or ne	nal, permanent)	1	regota		



Water Quality Dissolved Oxygen (mg/L) pH Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m)  ———————————————————————————————————	Conductivity (µS/cm)  Air Temperature (°C)  Maximum Pool Depth  Mean Water Depth  Mean Water Depth  Mean Water Depth  Mean Water Depth  Maximum Pool Depth  Mean Water Depth  Mean Water Depth  Mean Water Depth  Maximum Pool Depth  Mean Water Depth  Mean Water Depth  Maximum Pool Depth  Mean Water Depth  Mean Water Depth  Maximum Pool Depth  Mean Water D
Weather conditions in previous 24 hrs  GPS Coordinates (Zone)  Descriptive Location  Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Time in situ measurements taken  Watercourse Dimensions & Morphology  Mean Watercourse Width  (m)  Mean Bankfull Width  (m)  % Riffle  Evidence of eroding banks, Comments on bank s  Substrate (% cover)  Bedrock  Boulder  Gravel  In-water Cover  Cover Types Present (circle):  Undercut Bancover (% of watercourse shaded, dominal cover (% of watercourse))	Field Staff Time    Conductivity (µS/cm)     Air Temperature (°C)   R°C     Maximum Pool Depth (cm) (cm) (cm)     Mean Water Depth (cm)     Mean Water Depth (cm)     Mean Water Depth (cm)     Sand (clay (clay (con) (
Weather conditions in previous 24 hrs  GPS Coordinates (Zone)  Descriptive Location  Water Quality  Dissolved Oxygen (mg/L)  Water Temperature (°C)  Time in situ measurements taken  Watercourse Dimensions & Morphology  Mean Watercourse Width  (m)  % Riffle  Evidence of aroding banks, Comments on banks  Substrate (% cover)  Bedrock  Boulder  Gravel  In-water Cover  Cover Types Present (circle):  Undercut Banking Vegetation  Woody Debris  Riparian Zone  Riparian Zone  Riparian Cover (% of watercourse shaded, dominal adjacent Land Use  Ish Habitat Potential  Critical Habitat (spawning or nursery areas, ground ligratory Obstructions (seasonal, permanent)	Time N 47586/7 Datum N d  Conductivity (µS/cm)  Air Temperature (°C)
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) % Riffle % Po Evidence of eroding banks, Comments on bank s  Substrate (% cover) Bedrock Cobble Boulder Gravel  In-water Cover Cover Types Present (circle): Undercut Bankfull Woody Debris  Riparlan Zone Riparlan Zone Riparlan Cover (% of watercourse shaded, dominated and and and and and and and and and an	Conductivity (µS/cm)  Air Temperature (°C)  Maximum Pool Depth (cm) Mean Water Depth (cm)  % Run % Fl tability  Sand Clay Sand Silt Muck Clay Marl Detritus  nks Deep Pool Watercress Boulder Other
Water Quality Dissolved Oxygen (mg/L)	Conductivity (µS/cm)  Air Temperature (°C)  Maximum Pool Depth  Mean Water Depth  Mean Water Depth  Mean Water Depth  Mean Water Depth  Maximum Pool Depth  Mean Water Depth  Mean Water Depth  Mean Water Depth  Maximum Pool Depth  Mean Water Depth  Mean Water Depth  Maximum Pool Depth  Mean Water Depth  Mean Water Depth  Maximum Pool Depth  Mean Water D
Water Quality Dissolved Oxygen (mg/L)	Conductivity (µS/cm)  Air Temperature (°C)  Maximum Pool Depth (cm) Mean Water Depth (cm)  % Run % Fl tability  Sand Silt Muck Clay Marl Detritus  Note that the second of
Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width	Maximum Pool Depth (cm) Mean Water Depth (cm)  Mean Water Depth (cm)  Mean Water Depth (cm)  Mean Water Depth (cm)  Sall Silt Muck  Clay Marl Detritus  Description  Note The Company of t
Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width	Maximum Pool Depth (cm) Mean Water Depth (cm)  Mean Water Depth (cm)  Mean Water Depth (cm)  Mean Water Depth (cm)  Sall Silt Muck  Clay Marl Detritus  Description  Note The Company of t
Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width	Maximum Pool Depth (cm) Mean Water Depth (cm)  Mean Water Depth (cm)  Mean Water Depth (cm)  Mean Water Depth (cm)  Sall Silt Muck  Clay Marl Detritus  Description  Note The Company of t
Watercourse Dimensions & Morphology Mean Watercourse Width	Maximum Pool Depth (cm)  Mean Water Depth (cm)  Sol % Run % Fl  tability stable hanks well  regulated wayrakes typhase  Sand Silt Muck  Clay Marl Detritus  nks Deep Pool Watercress Aquatic veg  Boulder Other
Mean Watercourse Width (m)  Mean Bankfull Width (m)  We Riffle (m)	Sand Silt Muck Clay Marl Detritus  Deep Pool Watercress Aquatic veg  Boulder Other
Mean Bankfull Width	Sand Silt Muck Clay Marl Detritus  Deep Pool Watercress Aquatic veg  Boulder Other
Weitence of eroding banks, Comments on banks  Substrate (% cover)  Bedrock Boulder Gravel  In-water Cover Cover Types Present (circle): Undercut Bance Cover Woody Debris  Riparlan Zone Riparlan Zone Riparlan Cover (% of watercourse shaded, dominated Cover (% of watercourse shaded, dominated Cover (% of watercourse shaded)  Right Habitat Potential Critical Habitat (spawning or nursery areas, ground Right Graver)  Right Habitat Potential Critical Habitat (spawning or nursery areas, ground Right Graver)  Right Habitat Potential Critical Habitat (spawning or nursery areas, ground Right Graver)  Right Habitat Potential Critical Habitat (spawning or nursery areas, ground Right Graver)	Sand Silt Muck Clay Marl Detritus  Deep Pool Watercress Aquatic veg  Boulder Other
Substrate (% cover)	Sand Silt Muck Clay Marl Detritus  Deep Pool Watercress Aquatic veg  Boulder Other
Substrate (% cover)  Bedrock Cobble Boulder Gravel  In-water Cover Cover Types Present (circle): Undercut Bai Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated and Use  Tish Habitat Potential Critical Habitat (spawning or nursery areas, ground digratory Obstructions (seasonal, permanent)	Sand Silt Muck Clay Marl Detritus  nks Deep Pool Watercress Aquatic veg  Boulder Other
Bedrock Cobble Boulder Gravel  In-water Cover Cover Types Present (circle): Undercut Bai Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated by the company of the circle of the	Sand Silt Muck Clay Marl Detritus  nks Deep Pool Watercress Aquaic veg Boulder Other
Bedrock Cobble Boulder Gravel  In-water Cover Cover Types Present (circle): Undercut Bai Overhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominated by the company of the circle of the	Sand Silt Muck Clay Marl Detritus  nks Deep Pool Watercress Aquatic veg Boulder Other
Boulder Gravel  In-water Cover  Cover Types Present (circle): Undercut Bai  Overhanging Vegetation Woody Debris  Riparian Zone  Riparian Cover (% of watercourse shaded, dominal  Idjacent Land Use  Tish Habitat Potential  Iritical Habitat (spawning or nursery areas, ground  Rigratory Obstructions (seasonal, permanent)	Clay Marl Detritus  nks Deep Pool Watercress Aquatic veg  Boulder Other
n-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dominal adjacent Land Use Rish Habitat Potential critical Habitat (spawning or nursery areas, ground digratory Obstructions (seasonal, permanent)	Clay Marl Detritus  nks Deep Pool Watercress Aquatic veg  Boulder Other
Cover Types Present (circle): Undercut Bar Dverhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominal adjacent Land Use  Rish Habitat Potential ritical Habitat (spawning or nursery areas, ground digratory Obstructions (seasonal, permanent)	nks Deep Pool Watercress Aquaic veg Boulder Other
Cover Types Present (circle): Undercut Bar Dverhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, dominal adjacent Land Use  Rish Habitat Potential critical Habitat (spawning or nursery areas, ground digratory Obstructions (seasonal, permanent)	Boulder Other
Riparian Zone Riparian Cover (% of watercourse shaded, domina Riparian Zone Riparian Cover (% of watercourse shaded, domina Riparian Cover (% of watercourse shaded, down) Riparian Cover (%	Boulder Other
Riparian Cover (% of watercourse shaded, domina Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground digratory Obstructions (seasonal, permanent)	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground	
Tish Habitat Potential Critical Habitat (spawning or nursery areas, ground digratory Obstructions (seasonal, permanent)	int vegetation, mature or early successional)
Tish Habitat Potential Critical Habitat (spawning or nursery areas, ground digratory Obstructions (seasonal, permanent)	
Tish Habitat Potential Critical Habitat (spawning or nursery areas, ground Iligratory Obstructions (seasonal, permanent)	Cen Cold
Critical Habitat (spawning or nursery areas, ground	
Aigratory Obstructions (seasonal, permanent)	
digratory Obstructions (seasonal, permanent)  channel  cte any fish observations	water upwellings)
cte any fish observations	
ate any fish observations na_e	
	male legitation
aterbody Notes	
atural Watercourse Trapezoidal Channel	0
urficial Drainage (i.e. furrows) Dugout Bond	Grassed Swale Buried Tile
urficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatic Veg Dry
ther Habitat Notes, Incidental Wildlife Observat	ions, etc. do ply in ciscol channel.
dryat the time of	
	CINATA MOTO CHANNOT.
	antell the transfer channel.
1/14:0-	antell.
d Notes Authored by K. Masw. Fleld Notes Q	Cunter. Ha was channel.



Watercourse Name unna Photos 385-390 Date 0ct addid Weather conditions in previous	- A C Brown	rolect#		wind.
Weather conditions in previous			609502	69
Weather conditions in previous		Time 4	Mason, H. F	Taleila .
		MNJ J	30 20	
GPS Coordinates (Zone)	TT E 0600		4757136	Dat 6 i
Descriptive Location		e voca	14 501+	Datum Na
				N 8 + 4 - 1
Water Quality	- N	ater qual	ity is from	a posta
Dissolved Oxygen (mg/L)	<u>50</u> pH 1.	66 Conduct	tivity (uS/cm)	3470 · Cal
Water Temperature (°C) 11 35 Time in situ measurements take		Air Temperature	(°C) 18°C	
Watercourse Dimensions & M			lad. No	
Mean Watercourse Width			fanding c	Mert in di
Mean Bankfull Width		Maximum Pool D	epth	(cm)
% Riffle	(''') %.Pool	Mean Water Dep		(cm)
Evidence of eroding banks, Com	ments on bank stab		- % Run	% F
			de coell	Vegetalea
Substrate (% cover)			-	
Bedrock	Cobble	Sand	80 sin	form 1 B. C.
Boulder	Gravel	Gand Clay	Silt Marl	O MuckO Detritu
1-water Cover				RC
liparian Cover (% of watercourse	mall trees	vegetation, matur	rediate	ssional)
	two Aid			
agricul				
agricul				
Ish Habitat Potential	ery areas, groundwa			
ish Habitat Potential ritical Habitat (spawning or nurse	ery areas, groundwa	ter upwellings)		
Ish Habitat Potential ritical Habitat (spawning or nurse igratory Obstructions (seasonal,	ery areas, groundwa	ter upwellings)	curget	ition
Ish Habitat Potential ritical Habitat (spawning or nurse igratory Obstructions (seasonal,	ery areas, groundwa	ter upwellings)	cutgete	ition
Ish Habitat Potential ritical Habitat (spawning or nurse ligratory Obstructions (seasonal, cite any fish observations	permanent)	ter upwellings)		
ish Habitat Potential critical Habitat (spawning or nurse ligratory Obstructions (seasonal, cte any fish observations atterbody Notes attural Watereourse  Trape	permanent)  And Channel	der upwellings)		
ish Habitat Potential critical Habitat (spawning or nurse ligratory Obstructions (seasonal, cte any fish observations atterbody Notes attural Watereourse  Trape	permanent)  And Channel	der upwellings)		
Ish Habitat Potential critical Habitat (spawning or nurse ligratory Obstructions (seasonal, cte any fish observations atterbody Notes attural Watercourse Trape urficial Drainage (i.e. furrows)	permanent)  permanent)  permanent  permanent	der upwellings)  ———————————————————————————————————	swale E by Aquatic Veg_	Buried Tile
Ish Habitat Potential Initical Habitat (spawning or nurse Iligratory Obstructions (seasonal, Initical Habitat (spawning or nurse Iligratory Obstructions (seasonal, Initial Habitat Notes Inclidental Waterbody Notes Inclidental Water Habitat Notes, Inclidental Waterball	permanent)  permanent)  permanent  permanent	Grassed S Dominated to	iwaleE by Aquatic Veg	Buried Tile
ish Habitat Potential critical Habitat (spawning or nurse ligratory Obstructions (seasonal, cte any fish observations atterbody Notes attural Watereourse  Trape	permanent)  permanent)  permanent  permanent	Grassed S Dominated to	iwaleE by Aquatic Veg	Buried Tile
Ish Habitat Potential critical Habitat (spawning or nurse ligratory Obstructions (seasonal, cete any fish observations atterbody Notes attural Watereourse Trape urficial Drainage (i.e. furrows)	permanent)  permanent)  permanent  permanent	Grassed S Dominated to	iwaleE by Aquatic Veg	Buried Tile
Ish Habitat Potential critical Habitat (spawning or nurse ligratory Obstructions (seasonal, cte any fish observations atterbody Notes attural Watercourse urficial Drainage (i.e. furrows) ther Habitat Notes, incidental W	permanent)  ezoidal Channel  Dugout Pond  VIIdlife Observation	Grassed S Dominated to	iwaleE by Aquatic Veg	Buried Tile
Ish Habitat Potential critical Habitat (spawning or nurse ligratory Obstructions (seasonal, cte any fish observations atterbody Notes attural Watercourse urficial Drainage (i.e. furrows) ther Habitat Notes, incidental W	permanent)  ezoidal Channel  Dugout Pond  VIIdlife Observation	Grassed S Dominated to	iwaleE by Aquatic Veg	Buried Tile
Ish Habitat Potential critical Habitat (spawning or nurse ligratory Obstructions (seasonal, cete any fish observations atterbody Notes attural Watereourse Trape urficial Drainage (i.e. furrows)	permanent)  ezoidal Channel  Dugout Pond  VIIdlife Observation	Grassed S Dominated to	SwaleE by Aquatic Veg ng Watev	Buried Tile



Station # 11-3	menger destrict	Project Name N	iagara	
Watercourse Name worn		Project #		
Photos 394-398				2
Date <u>0 c+ 2 2 / 12</u>		TimeHSO		Fare a.
Weather conditions in previous	us 24 hrs	4-r. r. v. 15°C		
GPS Coordinates (Zone)/_	JI E 062	RAAL NH	7-00/10	<b>1</b>
Descriptive Location	ff of wi		20/	Datum Nads
CON	cession 5	. North of		author
Water Quality	· ·	1 d. r.y		
Dissolved Oxygen (mg/L)	Ha	Conductivity		
Water Temperature (°C)		Air Tompornture (90)	(μS/cm)	
Time in situ measurements ta	ken	Air Temperature (°C)		
Watercourse Dimensions & Mean Watercourse Width	Morphology (m)	dry		
Mean Bankfull Width	(m)	Maximum Pool Depth	(0	em)
% Riffle	% Poo	Mean Water Depth	(0	m)
Evidence of eroding banks, Co	Omments on bank eta	hiliha .	% Run	% Flat
	UP Set of	col	L banks -	- well
Substrate (% cover)	<u> </u>			
Bedrock	Cobble	<b>.</b> .	* *	
Boulder	Coolie Gravel	Sand	Silt	Muck
	GIAVOI	Clay	Marl	Detritus
In-water Cover		701	Love	RCG
Cover Types Present (circle): Overhanging Vegetation	Undercut Bank	s Deep Pool y Boulder Other	Vatercreșs	Aquauc veg
Riparian Zone Riparian Cover (% of watercou	rse shaded, dominant	Vegetation mature or	early succession	ai)
Adjacent Land Use	4. fields in	m surabs, ear	<u></u>	
Fish Habitat Potential Critical Habitat (spawning or nu	rsery areas, groundwa	ater upwellings)		
ligratory Obstructions (seasons	al, permanent)			
lete any fish observations	nome obs	'wed		
/aterbody Notes atural Watercourse Tra urficial Drainage (i.e. furrows)_	pezoidal Channel Dugout Pond	Grassed Swale Dominated by Aq	Buried	i Tile
ther Habitat Notes, Incidental	Wildlife Observation	na etc Waterb		st sideo
· Masha		1		TO THE TOTAL TO THE PERSON OF
ld Notes Authored by K. Ma San	Field Notes QA/Q	Ced by M		

G:\01609\resource\internal info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rankt Assessment So.



Station # 12-4	and the second s	Project Name			8 1.6 %
Oldion i			7 7 7 7 7	<u> </u>	
Watercourse Name un name	MUD TYCE.	Project #	<u> </u>	A M. Fa	
Photos 408-413		Field Staff		170,70	
Date Oct 33/12			25		
Weather conditions in previous	24 hrs \( \frac{\lambda \lambda \lambda}{\lambda} \)	nny, 18°C	11-15-11.	-1-	um Nod8
GPS Coordinates (Zone)	E ()O	3220	N 47/543		
Descriptive Location	HOT UCIN		Road alo	ngade	CONTIN
West	of Tour W	ve Coar			
Water Quality				. 153	
Dissolved Oxygen (mg/L) 8.2	<u>  pH_                                   </u>	<u>₹.88</u> Cond	uctivity (µS/cm	) 000	
Water Temperature (°C)	48	Air Temperatu	re (°C) <u>0 °</u>		
Time in situ measurements take	en a	565			
	· ·	olated			
Watercourse Dimensions & M		Olec	10	5 (cm	
Mean Watercourse Width	<u>k (</u> m)	Maximum Poo	v Depui	(cm	
MEMI Dankien trian	<u>(m)</u>	Mean Water D	epun <u>~</u>		, % Flat
% Riffle	100 % Po		% Rur		wina
Evidence of eroding banks, Co	mments on bank s	tability <u>Sow</u>	10 ENOSTON	~ a 3(c	
C					
Substrate (% cover)			6 S		
Bedrock	Cobble	Sand_	40		Muck
Boulder	Gravel	90_Clay_		Mari 10	Detritus
Overhanging Vegetation V  Riparian Zone  Riparian Cover (% of watercou	Voody Debris	ant vegetation in	nature or early	successiona	I)
Riparian Cover (% or watercou	rasses & wo	adauchecia	early		•
Adjacent Land Use					
Corn	& unmainta	ained voc			
	*. - 8.				
Fish Habitat Potential Critical Habitat (spawning or nu	ream arone arous	iduator unwelling	19)		
	ilsery areas, groun	mater upmoning	, <b>5</b> ,		
Critical Habitat (spawning of the	NON	Annual Control of the			
	NON	Sanarae.			
Migratory Obstructions (season	nal, permanent)	la constant de la con			
Migratory Obstructions (season	nal, permanent)	la constant de la con			
Migratory Obstructions (season	nal, permanent)	la constant de la con			
Migratory Obstructions (season	nal, permanent)	la constant de la con			
Migratory Obstructions (season Note any fish observations  Waterbody Notes	nal, permanent) an water none obser	nred			
Migratory Obstructions (season Note any fish observations  Waterbody Notes Natural Watercourse  T	rapezoidal Channe	nied Gras	sed Swale	Burie	
Migratory Obstructions (season Note any fish observations  Waterbody Notes Natural Watercourse T Surficial Drainage (i.e. furrows)	rapezoidal Channe	of Gras	sed Swaleated by Aquati	Burie	d Tile
Migratory Obstructions (season Note any fish observations   Waterbody Notes  Natural Watercourse T  Surficial Drainage (i.e. furrows)	rapezoidal Channe	of Gras	sed Swaleated by Aquati	Burie	d Tile
Migratory Obstructions (season Note any fish observations  Waterbody Notes Natural Watercourse T Surficial Drainage (i.e. furrows) Other Habitat Notes, Incident	rapezoidal Channe  Dugout Po	Gras	sed Swaleated by Aquati	Burie	d Tile
Migratory Obstructions (seasor Note any fish observations   Waterbody Notes Natural Watereourse T Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incident	rapezoidal Channe	Gras	sed Swaleated by Aquati	Burie	d Tile
Migratory Obstructions (season Note any fish observations  Waterbody Notes Natural Watercourse T Surficial Drainage (i.e. furrows)  Other Habitat Notes, Incident	rapezoidal Channe  Dugout Po	Gras	sed Swaleated by Aquati	Burie	d Tile
Migratory Obstructions (season Note any fish observations Waterbody Notes Natural Watercourse T Surficial Drainage (i.e. furrows) Other Habitat Notes, Incident	rapezoidal Channe Dugout Po	Gras	sed Swaleated by Aquati	Burie	d Tile

G:\01609\resource\internal info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc



tation # 13-4 Vatercourse Name annual hotos 414-419 vate 0c+3/4	Project # (50	950269	
hotos 414-419			*
•	Field Staff	usa. M. Faiell	^
ate 000 000	Time 4:45		
a distance in provious 24 hrs	11 NYU . 18°C		
Veather conditions in previous 24 hrs E O E O E			m Wad83
escriptive Location	"RODEL COAD	1, west of	Dunnvill
Jain Gest Turning			
JOHN 41823 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	water in char	love	
valer duancy	and and the	(I.Clom)	
issolved Oxygen (mg/L)	HConductivity	(μο/αιτή	
Vater Temperature (°C)	Air Temperature (°C)		
ime in situ measurements taken		r in channe	and the state of t
Disconsione & Mornhology	/no water		· 18
Vatercourse Dimensions & Morphology	Maximum Pool Depti	h(cm)	
Mean Watercourse Width (m)	Mean Water Depth_		
ACCUS DOMESTICAL	Prod	% Run	% Flat
% Hime Evidence of eroding banks, Comments on ba	ink stability Some	odervog	
:Vidence of eroding barmo, comments	•		
<u> </u>		. ,	
Substrate (% cover)	Sand	80 sit 10	Muck
	Sand Clay	Marl 10	Detritus
BoulderGravel	Clay	Wall C	RCG
n-water Cover Cover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone	Soulder Suler		juaus veg
Over Types Present (circle): Underconverhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, de	Soulder Suler	or early successional	juane veg
Over Types Present (circle): Undercover Types Present (circle): Undercover handing Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, decored lead Use	ominant vegetation, mature	or early successional	juane veg
Cover Types Present (circle): Undercoverhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, de Course	ominant vegetation, mature	or early successional	juane veg
Cover Types Present (circle): Undercoverhanging Vegetation Woody Debris  Riparian Zone Riparian Cover (% of watercourse shaded, de Course	ominant vegetation, mature  RCG CANA  eld, voad  groundwater upwellings)  t)	or early successional	juane veg



Station # 3-5	William Control	Project Name N	agara	Lund	
Watercourse Nameunna	<u> </u>	Project # 1609	50269		
Photos 420 - 423		Field Staff C Ma	JM, M. Fa	ciella	
Date 00+ 23/1a	<u> </u>	Time 9:57			
Weather conditions in previous		and the second second			pri.
GPS Coordinates (Zone)		733 N L	4752888	Datum	Nad8?
Descriptive Location <u>occ</u>	of Booker	Poad use	st of 13		20/2°
& Dunnville/	Waintlest	auntine	•		
Water Quality	_Dr	4			
Dissolved Oxygen (mg/L)	pH_	Conductivit	y (μS/cm)		
Water Temperature (°C)		Air Temperature (°C	y (µo/ciii)		
Time in situ measurements tak	en	- All Temperature ("C	1-19-		
Watercourse Dimensions & Mean Watercourse Width  Mean Bankfull Width  Riffle  Evidence of eroding banks, Con	(m) 5 (m) % Poo	Market Committee	h	(cm) (cm)	_% Flat
					<u> </u>
Substrate (% cover)	<b>.</b>			:	
Bedrock	Cobble	Sand	Silt	100	Muck
Boulder	Gravel	Clay	Marl		Detritus Phyoghin
Overhanging Vegetation W  Riparian Zone  Riparian Cover (% of watercours	se shaded, dominan	Boulder Other_	Watercress  or early success	(lenois	www.yeg/
Adjacent Land Use	neadaw sp & Reld, road, b	throginales, e	andy		
Fish Habitat Potential Critical Habitat (spawning or nurs	*. &				
Migratory Obstructions (seasona	I, permanent)	( resetation		-	
Note any fish observations	your	J. J. C. Carrey			
Vaterbody Notes  Vatural Watereourse Trais  Surficial Drainage (i.e. furrows)	Dugout Pond_	Dominated by	Aquatic Veg	uried Tile	
Other Habitat Notes, Incidental  Ly Phy agmiter  Medding Species	Riparian a etc.	ns, etc. Octob	d Channe of Phro	l dan gunte	instead in
eld Notes Authored by $\mathcal{L}: Masa$	Sold No.	m.l.			



Station # 13-6	Project Name Niagava was
Watercourse Name unnamed Trib	Project # 160950269
Photos 424-427	Field Staff K. Mason, M. Faiella
Date Oct 23/12	Time 0.07
Weather conditions in previous 24 hrs	my 18°C
GPS Coordinates (Zone) TT E 06	23258 N 47 52708 Datum Nad 83
Descriptive Location	pice Read wester 12-3
8 13 - I running a	and bushlot to the N
Water Quality Dissolved Owers (molt) / not end	ugh for YSI
Dissolved Oxygen (mg/L)pH_	
Water Temperature (°C)	Conductivity (μS/cm)
Time in situ measurements taken	Air Temperature (°C)
Watercourse Dimensions & Morphology	
Mean Watercourse Width	Maximum Pool Depth (cm)
Mean Bankfull Width 2 (m)	Moon Water Day
% Riffle % Po	O
Evidence of eroding banks, Comments on bank st	tability well vegetated. "Flat
Substrate (% cover)	
BedrockCobble_	Sand 80 Sitt 10 Must
Boulder Gravel	SandSilt/OMuck ClayMarl/O_Detritus
In-water Cover  Cover Types Present (circle): Undercut Bar  Overhanging Vegetation Woody Debris	nks Deep Pool Watercress Aquaic Veo 1404
Woody Debns	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, domina	nt vegetation, mature or early avecagionally
	cies & poplars, intermediate
Adjacent Land Use	,
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, grounds	water upwellings)
Migratory Obstructions (seasonal, permanent)	
· law water	
Note any fish observations	100
Waterbody Notes	
Natural Watercourse Trapezoidal Channel_	
Surficial Drainage (i.e. furrows) Dugout Pond_	
Dugout Pond_	DIA
Other Habitat Notes, incidental Wildlife Observati	
Ribarian area Consists of	North ade.
Coeries etc	- Hopian - Logwoods, avasses meadan
eld Notes Authored by K-Mason Field Notes QA	VOICed by



Watercourse Name VIII		Project Name	Niagaro	トミシア
Photos 428-430	e y v v v v v v v v v v v v v v v v v v	Project #( C	,09502(	59
Date 0c+33/13		Field Staff /	· Mason	M. Fait
Weather conditions in previo	us 24 hrs		3 9	
GPS Coordinates (Zone)	2 September 1	34 CQ 3 N	47528/2	
Descriptive Location 04	1	anville/was	52 SM 9 5501	<u>Datum</u>
Jach	of Books	Road	· Contraction	\ a.mli
Water Quality				
Dissolved Oxygen (mg/L) 8	50 ,,,	8.27		
Water Temperature (°C)	1.69	8.32 Conduc	tivity (µS/cm) <u>(</u>	258
Time in situ measurements ta	ken	1 Sil 1 emperature	(°C) 0°C	
Watercourse Dimensions &	Vombolom			
	(m)	Mantana		
Mean Bankfull Width	(m)	Maximum Pool D	epth 🚓	(cm)
% Riffle	**************************************	Mean Water Dep		(cm)
Evidence of eroding banks, Co	omments on bank	stability well	% Run	
			orgination of	<u> </u>
Substrate (% cover)	<i>≱</i>			
Bedrock	Cobble	Sand	C ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	:
Boulder	Gravel	40 Clay	Silt	M
In-water Cover		- Jointy	Mari	De
Cover Types Present (circle):	" Undores O-			
	Undercut Ba Voody Debris	nks Deep Pool Boulder Oth	Watercress	Aquauo
Riparian Zone		•		
Riparian Cover (% of watercour	rse shaded, domini day rpecine	ant vegetation, mature	e or early success	sional)
Riparian Cover (% of watercour	rse shaded, domina	ant vegetation, mature	e or early success	sional)
Adjacent Land Use	day pecce	ant vegetation, mature	e or early success	
Riparian Cover (% of watercour	land, v	sad rura	tarky	
Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nur	sery areas, ground	water upwellings)	tarky	
Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nur	sery areas, ground	sad rura	tary veriden	tia
Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nur	sery areas, ground	water upwellings)	tarky	tia .
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur.	rsery areas, ground	water upwellings)	tary veriden	tia
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur.	rsery areas, ground	water upwellings)	tary veriden	tia .
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur.  Alignatory Obstructions (seasonal Lete any fish observations	rsery areas, ground	water upwellings)	tary veriden	tia .
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur  Migratory Obstructions (seasona  Lete any fish observations	sery areas, ground tential of al, permanent)	water upwellings)	- Cypnni	tia .
Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur.  Migratory Obstructions (seasonal lete any fish observations  Vaterbody Notes latural Watercourse  Train	rsery areas, ground the talk of the service of the	water upwellings)  Secured  Grassed Sy	residen Cypnni	tial
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur  Migratory Obstructions (seasona  Lete any fish observations  Vaterbody Notes	rsery areas, ground the talk of the service of the	water upwellings)  Secured  Grassed Sy	residen Cypnni	d Sp
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur- Migratory Obstructions (seasonal Lete any fish observations  Vaterbody Notes Latural Watercourse Trail urficial Drainage (i.e. furrows)	rsery areas, ground the permanent) pezoidal Channel Dugout Pond	water upwellings)  Grassed Sy  Dominated by	vale Bu	tial
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur. Migratory Obstructions (seasona Lete any fish observations Jaterbody Notes Jatural Watereourse  Trapurficial Drainage (i.e. furrows)  ther Habitat Notes, Incidental	rsery areas, ground al, permanent) pezoidal Channel Dugout Pond Wildlife Observet	water upwellings)  Secured  Grassed Sy  Dominated by	vale Bu	d Sp.
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur- Migratory Obstructions (seasonal Lete any fish observations  /aterbody Notes atural Watercourse Trajurficial Drainage (i.e. furrows)	rsery areas, ground al, permanent) pezoidal Channel Dugout Pond Wildlife Observet	water upwellings)  Secured  Grassed Sy  Dominated by	vale Bu	d Sp.
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur.  Migratory Obstructions (seasona Lete any fish observations  Atterbody Notes Latural Watercourse  Trapurficial Drainage (i.e. furrows)  Ther Habitat Notes, incidental	rsery areas, ground al, permanent) pezoidal Channel Dugout Pond Wildlife Observet	water upwellings)  Secured  Grassed Sy  Dominated by	vale Bu	d Sp.
Adjacent Land Use  Adjacent Land Use  Fish Habitat Potential  Critical Habitat (spawning or nur.  Alignatory Obstructions (seasonal  Lete any fish observations  Atterbody Notes  atural Watercourse  Trapurficial Drainage (i.e. furrows)  ther Habitat Notes, incidental	rsery areas, ground al, permanent) pezoidal Channel Dugout Pond Wildlife Observet	water upwellings)  Secured  Grassed Sy  Dominated by	vale Bu	d Sp
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nur.  Migratory Obstructions (seasona Lete any fish observations  Atterbody Notes atural Watercourse  Trapurficial Drainage (i.e. furrows)  ther Habitat Notes, incidental	rsery areas, ground al, permanent)  pezoidal Channel  Dugout Pond  Wildlife Observat	water upwellings)  Grassed Sy  Dominated by  Janan Ulga	valeBu / Aquatic Veg	ried Tile Dry Channets of



Station # 3-8	Orginal Many Artists /
Watercourse Name Unnamed	Project Name Niagara wind
Photos 431-435	Project # 60950269
Date 0c+ 33/12	Field Staff K. Masan M. Farella
Weather conditions in previous 24 hrs	Time 10:50
	MAN Sec
Descriptive Location	4946 N 4751930 Datum No
500011pure Location 5++ of	Poth Road West of Dina
Maintlett	and the
Water Quality	
Dissolved Oxygen (mg/L) 9.13 pH	8.74
Water Temperature (°C) 11.92	8.74 Conductivity (µS/cm) 273-
Time in situ measurements taken	Air Temperature (°C) /2°C
w sha measurements taken	10:55
Watercourse Dimensions & Morphology	
Mean Watercourse Width (m)	A CHA
Mean Bankfull Width (m)	Maximum Pool Depth 30 (cm)
A D	Mean Water Depth 20 (cm)
Evidence of eroding banks, Comments on banks	
	stable banks-well be
0.4.4.	
Substrate (% cover)	
BedrockCobble	Sand 70 Sit 10 March
Boulder Gravel	Of Clay
In-water Cover	OlayDetritu
Cover Types Present (circle): Undercut Ba	
Overhanging Vegetation Woody Debris	- Valerciess / Administration
The second secon	Boulder Other
Riparian Zone	•
Riparian Cover (% of watercourse shaded, domina	ant vegetation, mature or each asset
60% meadan	of t pine, intermediate
Adjacent Land Use	THE PART PROPERTY OF THE PARTY
road, aa field	
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	twater unwellings)
	The state of the s
Migratory Obstructions (seasonal, permanent)	
as mater	thick grasser
Note any fish observations none obs	ien real
Naterbody Notes	
Notice Motore and a second	
Vatural Watercourse Trapezoidal Channel	Grassed Swale Buried Tile
Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by A
	Diy
Other Habitat Notes, Incidental Wildlife Observati	tions, etc. Ripaviana and considerate
mendauin pine, Poplars	doning a william covins
	THE VOLUME OF THE PROPERTY OF
	<u> </u>
eld Notes Authored by 1/2 MacW Field Notes Qu	Arcon ml



Station # 19-16 (max		Project Name	Niagara	
Watercourse Name	Sirre Sir	Project #		
Photos 440-444		Field Staff	KMason H	2950269
Date och 33/13	<b>&amp;</b>	Time 1	(A	, ra, ala
Weather conditions in previous	us 24 hrs	NNA 800	***	
GPS Coordinates (Zone) Descriptive Location	LI EOG	15305	N but my com I may for I	Datum Nad
Descriptive Location	et of Du	noville	Jamfleet	tauning Sa
	72 10 90	10 4 PO+1	Leood.	reconve sa
Water Quality		WHO PRIO	At- of -W	Q.J
Dissolved Oxygen (mg/L)	Hq	Condu	indiada. A mar	
Water Temperature (°C)		Air Temperatur	ictivity (µS/cm)	
Time in situ measurements tal	ken	, m remperatur	e (°C) <u>lo °</u> C	
Watercourse Dimensions & Mean Watercourse Width Mean Bankfull Width	<u>∠</u> (m) <u>≤</u> (m)	Maximum Pool Mean Water De	Depth 30	_(cm) stand
% Riffle	%P	1	% Run	(cm)
Evidence of eroding banks, Co	mments on bank	tability 5+a	ble holds	% Flat
Substrate (% cover)		tated		
Bedrock Boulder	Cobble	Sand		20 Muck
boulder	Gravel	<u> </u>	Mari	Detritus
Riparian Zone Riparian Cover (% of watercours	se shaded, domina	int vegetation, mati	re or early succes	sional)
Adjacent Land Use	1 ag. G	eld togra	sier, early	
Fish Habitat Potential Critical Habitat (spawning or nurs	sery areas, ground	water upwellings)		
Migratory Obstructions (seasonal		1	. 5	
Note any fish observations	- UTGUTAT	$190 \cdot 100 \cdot 0$	Jater	•
	<u> </u>	Virgi -		
<b>Vaterbody Notes</b> Vatural Watereourse Trap Surficial Drainage (i.e. furrows)	pezoidal Channel Dugout Pond	Grassed S	Swale Bu	uried Tile
ther Habitat Notes, Incidental V	Wildlife Observati	one de la la la	v body on	east side
				- Art Spirit
eld Notes Authored by K. Mason	Flak Notes Co	man 21 0	,	
(01609\resource\internal info and Tanana)	- Field Notes QA	/QCed by	к	



Station # 15-3	A Second	Project Name	Jiaa -	
Watercourse Name un namu	RO	Project #	160950	
Photos <u>445 - 449</u>		Field Staff 📈 📈	0.00 N	
Date		Time 11%3		utlia
Weather conditions in previous 24	hrs Junny	1896		
GPS Coordinates (Zone) 171		273 N	476,040	Dobum Almala
Descriptive Location	ship of Di		nfleet -	Datum Nad 8
Notintersection	n to Car	a bank		
Water Quality				
Dissolved Oxygen (mg/L) 9.73	, au @			
Water Temperature (°C)		SS Conductiv	rity (μS/cm) <u>(</u>	08
Time in situ measurements taken		ir Temperature (°	C) _ <i> Q°C</i>	
Watercourse Dimensions & Morp	hology			
Mean Watercourse Width 15	(m) M	laximum Pool Del	oth $a$ 5	(cm) _\ _ nd
Mean Bankfull Width	(m) .W	lean Water Depth		_(cm) / 444
% Riffle	**************************************	**************************************	% Run	% Flat
Evidence of eroding banks, Comme	ints on bank stabili	ity stable	bunks -	
		UCA-C-	Laborate St.	
Substrate (% cover)	•	***	v	
Bedrock	_Cobble	Sand	30 sin	
Boulder	Gravel 4	O Clay	~~~	Muck
In-water Cover		Oiay	Mari	<u>/O</u> Detritus
Cover Types Present (circle):	Undercut Banks	Deep Pool	Watercress	Aquaus /eg
Overhanging Vegetation Woody	Debris Bo	ulder Other		(riquatio 769)
Riparian Zone	,			
Riparian Cover (% of watercourse sh	laded dominant w	agololian	_	
	1 pha early	yetation, mattire	or early success	sional)
Adjacent Land Use	1			
- canal r	oad corn			
Fish Habitat Potential	<u>.</u>			
Critical Habitat (spawning or nursery	areas, groundwate	f upwellings)		
Migratory Obstructions (seasonal, per	manent)	8		
Note any fish sharp	ev thick	- u-caetat	100	
Note any fish observations	<i>t</i> .			
Waterbody Notes				
Natural Watercourse Transzoi	idal Channol			
Surficial Drainage (i.e. furrows)	Dugget Bond	Grassed Sw	ale Bu	uried Tile
Surficial Drainage (i.e. furrows)		_ Dominated by	Aquatic Veg	Dry
Other Habitat Notes, Incidental Wild	IIIa Ohaamaala	ADMINISTRAÇÃO CO.		· ·
*	111 <b>46</b>   /D-2-2-1-2-1-2-1-2-1-2-1-2-1-2-1-2-1-2-1-			
Channel danson	ina Observations	etc. <u>Ivarez</u>	Levaal do-	<u>hid</u>
channel damina	Le Observations	attents	Zelaal do-	Arud
channel damina	trel by c	attalis.	Zoldal do-	And
	Heal by c	attally.	Loidal do	And
leld Notes Authored by K. Masan	THE SU	attacks.		And



Station # 15-34	and Mariana and American	Project Name	A Diff for any I	- NA
Watercourse Name Lun n	CANAGE	Project Name	Niagaral	NAG
Photos 452 -454		Project # G	245034609 NT	000000 E 5
Date /2c+33/13	Walleton.	Field Staff /		-arella
Weather conditions in previous	24 hrs Sur	Time/_:5_3	÷	
GPS Coordinates (Zone)	E 06ac			
Descriptive Location			4750584	Datum Nada
Wains	Special Control Control	Sant rd	- west of	e Dunnville
Water Quality	/m	ff of ei	ant-au	*
Dissolved Oxygen (mg/L)	/ "		400	1 ~ 110
Water Temperature (°C)	/pH	Conduct	ivity (µS/cm)	acce
Time in situ measurements take	en /	Air Temperature	(°C) 10°C	
	<i>7</i> ·			
Watercourse Dimensions & M Mean Watercourse Width	1			
Mean Bankfull Width	4000	Maximum Pool D	epth	(cm)
% Riffle	<u>S(m)</u>	Mean Water Dept	h15	(cm)
	% Pool		% Run	<u> </u>
Evidence of eroding banks, Con	nments on bank stat	oility <u>Stal</u>	ole bank	<u> </u>
		all_	grassed	
Substrate (% cover)				:
Bedrock	Cobble	Sand	80 silt	1,000
Boulder	Gravel	10 Clay	Siit	Muck
In-water Cover	-		Wall	Detritus
Cover Types Present (circle):	Undercut Banks	Deep Pool	14/-4	- CALI
Overhanging Vegetation Wo		Boulder Oth		Aquanc veg
			H	
Riparian Zone				
Riparian Cover (% of watercourse	e shaded, dominant	vegetation, matur	e or early succes:	sional)
Adjacent Land Use	gracies	Typha, Ea	dy	Jionaly
Volacett Fatia 026				
100,3	+ resident	a.		-
Fish Habitat Potential	-9 , -45			
Critical Habitat (spawning or nurse	OD/ Oroga around			
1/1 //1	V \	ter upwellings)		
Migratory Obstructions (seasonal,	nermanent)			
lav	Pointaile III		* - *	
Note any fish observations	non a sheet	- we d		
	the second of the second of		· ·	
Naterbody Notes				
Natural Watercourse Trape Surficial Drainage (i.e. furrows)	ezoidal Channel	Grassed S	wala D.	unioni Tilo
Surficial Drainage (i.e. furrows)	Dugout Pond	Dominated b	W Aquatia Voc	ned lile
Other Habitat Notes, Incidental V	Viidlife Observation	s. etc. Mane	of arms (1)	N 4
Channel ed	of venic	10-Avad	2003	
			MANIA N	
		19		
eld Notes Authored by <u>IC. Mason</u>	Field Notes CAIO	Card In M. C.		
	· · · · · · · · · · · · · · · · · · ·			



Watercourse Name un na	<u> </u>	Project #		a Wind	
Photos 455-456		Field Staff			10
Date Oct 23/12			03	- Full	LO
Weather conditions in previous 2	24 hrs 🗸 և	nny 1800	1000		
GPS Coordinates (Zone) 17	I E 0604	<b>ロ</b> 3 句 ,	N 4750255	Datum	A I.
Descriptive Location	and Rank	utchin.cov	Road We	rt Of	///
Water Quality		rightau	jay (no a	2105-	-
Dissolved Oxygen (mg/L)	На				
Water Temperature (°C)	pn	Condi	uctivity (μS/cm)		
Time in situ measurements taker	1	Air Temperatu	re (°C) <u>lo°C</u>		
Watercourse Dimensions & Mo	rphology				
Mean Watercourse Width		Maximum Pool	Depth	(cm)	
Mean Bankfull Width	(m)	mean water Do	epth	(cm)	
Evidence of eroding banks, Com	% Poo		% Run		%
	nents on bank sta	ibility <u>urel</u>	ure gretated		-
Substrate (% cover)		cont in	ut stigate	:	
Bedrock	Cobble	Sand	Sint_	3.6	
Boulder	Gravel	Clay	Siit_ Marl	Mt	
over Types Present (circle): verhanging Vegetation Woo	dy Debris shaded, dominan	Boulder C	ther	•	¥1
ver Types Present (circle): iverhanging Vegetation Woo iparlan Zone iparlan Cover (% of watercourse	dy Debris shaded, dominan	Boulder C	ther	•	· ·
Iver Types Present (circle): Iverhanging Vegetation Woo Iparlan Zone Iparlan Cover (% of watercourse	dy Debris shaded, dominan	t vegetation, ma	ther	•	¥(
iparian Zone iparian Cover (% of watercourse djacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse)	shaded, dominan facet Id, (ana) ry areas, groundw	Boulder Control of the second	ture or early succes	•	· · · · · · · · · · · · · · · · · · ·
Iver Types Present (circle): Iverhanging Vegetation Wood Iparlan Zone Iparlan Cover (% of watercourse Idjacent Land Use Ish Habitat Potential Iditical Habitat (spawning or nurse) Idjacent Cover (seasonal, paratory Obstructions (seasonal, paratory or nurse)	shaded, dominand for factory areas, groundwood for an analysis of the state of the	Boulder Control of the second	ture or early succes	ssional)	
Iparian Zone Iparian Cover (% of watercourse Iparian Cover (% of watercourse)  Iparian Zone Iparian Cover (% of watercourse Iparian Cover (% of watercourse) Iparian Cover (% of watercours	shaded, dominand for factory areas, groundword for an analytic coldal Channel	Boulder Control of the second	ture or early succes	ssional)	
iparian Zone iparian Cover (% of watercourse iparian Cover (% of watercourse diacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse gratory Obstructions (seasonal, parian year) ite any fish observations  terbody Notes tural Watercourse Trape: ficial Drainage (i.e. furrows)	shaded, dominand and and and and and and and and and	Boulder Control of the second	ture or early success    SwaleE	Suried Tile	
Iparian Zone Iparian Cover (% of watercourse Iparian Cover (% of watercourse)  Iparian Zone Iparian Cover (% of watercourse Iparian Cover (% of watercourse) Iparian Cover (% of watercours	shaded, dominand and and and and and and and and and	Boulder Control of the second	ture or early success    SwaleE	Suried Tile	
iparian Zone iparian Cover (% of watercourse iparian Cover (% of watercourse djacent Land Use  sh Habitat Potential itical Habitat (spawning or nurse gratory Obstructions (seasonal, parian waterbody Notes tural Watercourse Traper ificial Drainage (i.e. furrows)  ner Habitat Notes, Incidental With Additional Course (i.e. furrows)  ner Habitat Notes, Incidental With Additional Course (i.e. furrows)  ner Habitat Notes, Incidental With Additional Course (i.e. furrows)	shaded, dominand and a control	Boulder Control of the vegetation, many attention of the vegetation, many attention of the vegetation	ture or early success    SwaleE	Suried Tile	





~	<b>d</b>	1	4	_
•	T "	111	гΟ	e
_	L C			٠.

Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Weather conditions in previous 24 hrs Descriptive Location Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Mair Temperature (°C) Mean Bankfull Width Mean Bankfull Width Mean Bankfull Width Mean Water Depth Substrate (% cover) Bedrock Boulder Gravel Clay Mari Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Overhanging Vegetation Woody Debris Water Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Waterbody Notes Natural Watercourse Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc.	Station #		Project Name Nia	area Win	<b>)</b>
Photos Date	Watercourse Name 14 MV M (La			JA21-01	
Date	Photos		-	uten J.V.	QVQ.
Weather conditions in previous 24 hrs GPS Coordinates (Zone) TE GPS Coordinates (Zone) The first transportation of transportation of the first transport	Date 1440 4 3 3 1/3				
Water Quality   Dissolved Oxygen (mg/L)	Weather conditions in previous 24	hrs bot &		oring	£
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Water Course Width Wean Water Depth Weater Depth Wea	GPS Coordinates (Zone)	F 6608		7044 Dat	um Nack
Water Quality Dissolved Oxygen (mg/L) Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width Mean Bankfull Width Mean Bankfull Width Mean Water Depth Riffle Webool Water Cover Bedrock Boulder Bedrock Bedrock Bedrock Bedrock Bedrock Boulder Bo	Descriptive Location		terception 1		
Dissolved Oxygen (mg/L) Water Temperature (°C) Water Temperature (°C) Air Temperature (°C) Air Temperature (°C) Air Temperature (°C) Air Temperature (°C)  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm) Water Depth (cm) Mean Water Depth (cm) Water Depth (cm) Mean Water Depth (cm) W		The second second	000		
Dissolved Oxygen (mg/L) Water Temperature (°C) Water Temperature (°C) Air Temperature (°C) Air Temperature (°C) Air Temperature (°C) Air Temperature (°C)  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Water Depth (cm) Water Depth (cm) Mean Water Depth (cm) Water Depth (cm) Mean Water Depth (cm) W	Water Quality	/			
Water Temperature (°C) Time in situ measurements taken  Watercourse Dimensions & Morphology Mean Watercourse Width (m) Mean Bankfull Width (m) Mean Water Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm) Much Bedrock Cobble Sand Silt Much Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone, Riparian Zone, Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	•	мн	Conductivity (	uS/cm)	
Watercourse Dimensions & Morphology Mean Watercourse Width	Water Temperature (°C)		Air Temperature (°C)	2000	
Watercourse Dimensions & Morphology  Mean Watercourse Width			/ / Omporator o ( 'O) _		
Mean Watercourse Width		/	p [*]		
Mean Bankfull Width			Marriagona Dagi Dagib	/am	. \
Substrate (% cover) Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Mari Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone, Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Mean Watercourse Width	(m)	Maximum Pool Deptn_	(CII	1)
Substrate (% cover)  Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Mean Bankfull Width	(m)/	Mean water Deptn		
Substrate (% cover)  Bedrock Boulder Gravel Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.					
Bedrock Cobble Sand Silt Muck Boulder Graver Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Evidence of eroding banks, Comm	ients on bank sta	ability		
Bedrock Cobble Sand Silt Muck Boulder Graver Clay Marl Detritus  In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	2 1 - 1 - 1 - (2/				
Boulder		Cobble	Sand	Silt	Muck
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone, Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.		Copple	Sanu	Siit Marl	<del></del>
Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other	Boulder	Graver	Clay	IVIAII	Detritus
Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other	In-water Cover	e ^d			
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows)  Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.		Undercut Bar	ks Deep Pool	Watercress A	Aguatic Veg
Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.					3
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)  Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Cromanging regermen	,			
Adjacent Land Use  Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc.	Riparian Zone,	r			
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Riparian Cover (% of watercourse	shaded, domina	int vegetation, mature o	r early succession	ai)
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations		SCLUPW	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Adjacent Land Use		· · · · · · · · · · · · · · · · · · ·		
Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	<u> </u>	TNUG 1 40	<del>Yhlond, Y</del>	<u>oa o</u>	
Critical Habitat (spawning or nursery areas, groundwater upwellings)  Migratory Obstructions (seasonal, permanent)  Note any fish observations  Waterbody Notes  Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc			Y		
Migratory Obstructions (seasonal, permanent)  Note any fish observations			المحمد المحمد المحمد		
Note any fish observations	Critical Habitat (spawning or nurse	ery areas, ground	water upweilings)		
Note any fish observations	Migratory Obstructions (seasonal	nermanent)			
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep_ Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	, , , , , , , , , , , , , , , , , , ,	• .			
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Note any fich observations				
Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Note any lish observations	/\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	The second secon		
Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Seep Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc					
Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry  Other Habitat Notes, Incidental Wildlife Observations, etc	Waterbody Notes	امسمار المادة	Crossed Cwals	Durind Tile C	loon.
Other Habitat Notes, Incidental Wildlife Observations, etc.	Natural Watercourse Trapezo	oldai Channei	Grassed Swale	Buried Tile S	seeb
	Surficial Drainage (i.e. furrows)	Dugout Pon	d Dominated by	Aquatic veg	_ Dry
	Other Habitat Notes Incidental	Wildlife Ohserv	ations etc		
Field Notes Authored by King author Field Notes QA/QCed by Field Notes DA/QCed DA/QCed by Field Notes DA/QCed DA/QC	Other Habitat Notes, mordentar	Wildlife Objective	utiono, oto:	7	
Field Notes Authored by K. Clautten Field Notes QA/QCed by					
Field Notes Authored by King author Field Notes QA/QCed by J.C.					
	Field Notes Authored by L. C. authored	Field Notes	a QA/QCed by		



## REA

#### Stantec

Station # 1-3	Project Name, Niagard Wind
Watercourse Name Wy Waw	Project # (00950269
Photos	Field Staff J Veene, V. Clryton
Date une dd/13	Time
Weather conditions in previous 24 hrs	hymid ~32°C
GPS Coordinates (Zone) TE 0622	16 N 478193 Datum Naux
Descriptive Location Non Manual Con	of Gireenlane &
Water Quality	
Dissolved Oxygen (mg/L) 8 10 pH 2	8.70 Conductivity (uS/cm) 835
Water Temperature (°C) 2010	8-70 Conductivity (μS/cm) 835 Air Temperature (°C) 320
Time in situ measurements taken	(o)
Watercourse Dimensions & Morphology	
	Maximum Pool Depth (cm)
Mean Bankfull Width $2.5 - 3$ (m)	
% Riffle% Poo	
Evidence of eroding banks, Comments on bank sta	ability <u>Stable</u>
Substrate (9/ cover)	
Substrate (% cover)  Bedrock SO Cobble	Sand $\rightarrow$ $\bigcirc$ Silt Muck
Boulder Gravel	
In-water Cover	Les Dans Bart Water and All W
Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris	ks Deep Pool Watercress Aquatic Veg
Vernanging Vegetation VVOody Debits	Boulder Other
Riparian Zone	
Riparian Cover (% of watercourse shaded, dominal	
Adjacent and the	es intermediate
Adjacent Land Use	r -
- Road ag la	<u>ra</u>
Fish Habitat Potential	
Critical Habitat (spawning or nursery areas, ground	water upwellings)
potential fact	
Migratory Obstructions (seasonal, permanent)	rel
Alaka anang Cala alaman di kacamatan di kaca	
Waterbody Notes	
Natural Watercourse Trapezoidal Channel	Grassed Swale Buried Tile Seep
Surficial Drainage (i.e. furrows) Dugout Pond	Dominated by Aquatic Veg Dry
Other Habitat Notes, Incidental Wildlife Observa	tions, etc
Field Notes Authored by K. Clauttan Field Notes	QA/QCed by
Field Notes	QA/QCed by



Field Notes Authored by __

WIND FARM WATERBOOT RAPID ASSESSMENT FORM	ヒト
Stantec 13-6 ml	The state of the s
Station # Project Name Niagara Wind  Watercourse Name unknown Project # 160950269  Photos See photo 107 Field Staff ME, MF  Date June 20/12 Time 10:05  Weather conditions in previous 24 hrs Not a humid  GPS Coordinates (Zone) 17T E 0623260 N 4752701 Datum N  Descriptive Location On Booker Rd Mest of Townline Ounny Waio	  ad 8
Water Quality Dissolved Oxygen (mg/L) 5.56 pH 7.90 Conductivity (μS/cm) 498 Water Temperature (°C) λ1.57 Air Temperature (°C) 29°C Time in situ measurements taken 10:10	
Watercourse Dimensions & Morphology   Mean Watercourse Width 1.75 (m) Maximum Pool Depth 20 (cm)   Mean Bankfull Width 30 (m) Mean Water Depth 15 (cm)  % Riffle 50 % Pool % Run 50    Evidence of eroding banks, Comments on bank stability NOTE: Well well	% Flat
Substrate (% cover)	
Bedrock Cobble Sand 40 Silt 40 Mu Boulder Gravel 20 Clay Marl De	ıck tritus
In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Overhanging Vegetation Woody Debris Boulder Other  Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)	Veg
Adjacent Land Use	
Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings)	
Migratory Obstructions (seasonal, permanent)	
Note any fish observations school of you of possible brook Stickle back.	
Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile_ Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc bid_ sp	

Field Notes QA/QCed by ______



Weather conditions in previous GPS Coordinates (Zone)  Descriptive Location	ous 24 hrs Su	Field Staff K Time One	N 47 5270	B Datum Nads
Water Quality Dissolved Oxygen (mg/L) Water Temperature (°C) Time in situ measurements ta	/ not eno	ough for Ys		
Watercourse Dimensions & Mean Watercourse Width Mean Bankfull Width  % Riffle Evidence of eroding banks, C	(m) (m)	Maximum Pool D Mean Water Dep Pool Stability	Depthi ≤	(cm)
Substrate (% cover)BedrockBoulder	Cobble		80 sin	10 Muck
In-water Cover Cover Types Present (circle): Overhanging Vegetation	I Indome Co.	ClayClay		Aquaic /eg 4ph
Riparian Zone Riparian Cover (% of watercou		es tob	e or early succes	ssional) xmediate
Tish Habitat Potential Pritical Habitat (spawning or num	rsery areas, ground			
figratory Obstructions (seasons  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	al, permanent)	ro		
uniciai Drainage (i.e. furrows)_		Dominated b	waleB y Aquatic Veg bady	uried Tile
her Habitat Notes, Incidental Road NON - We Riparian area Coecies et	CONTISTS OF	ons, etc. <u>On Sa</u>	الماسية	of Booker 15-2 vasses, meada
Notes Authored by K. Mason	Fleid Notes QA	man Onel	J	-



			. 1 .	1. 150	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Station # 0-3		Project Name	e Niaga	raWIT	(0)
Watercourse Name unknow		Project #	1609502	69	
Photos Date June 21/12.		Field Staff	: 54 : 54	ne rell	A LIGATIVY
Date Oune all landing	14 bro	Time9	<u>. 3 °  </u>		<u> </u>
Weather conditions in previous 2		946	N 47760	a7C Da	tum Nad 83
GPS Coordinates (Zone) 1771 Descriptive Location 0		ride Ro	ad Sai	+ 1 0 1	16-2
North a	f Sixteen	Rol			
Weter Quality		no wate			
Water Quality				m)	
Dissolved Oxygen (mg/L)	PII_	Con Air Tempera	ture (°C)	50	
Water Temperature (°C)		All Tellipela	ture ( O)		
n					
Watercourse Dimensions & Mo Mean Watercourse Width Mean Bankfull Width	rpnology	Maximum Po	ool Denth	(cr	n)
Mean Poplefull Width	(III)		Depth		
% Riffle	(''') %Pc	nol	%R		
Evidence of eroding banks, Com				· · ·	
		,			
Substrate (% cover)		20			
Bedrock	CobbleGravel	Sand_	40	Silt	Muck
Boulder	Gravel	<u> 40</u> Clay_		Mari	Detritus
Cover Types Present (circle): Overhanging Vegetation Wo  Riparian Zone Riparian Cover (% of watercours	oody Debris se shaded, domir	Boulder ant vegetation,	Other	ly successior	Aquatic Veg
10090	RCG, eo				
Adjacent Land Use	tentiala	farmla			
17316	<u>Warner</u>	<del>to who</del>			
Fish Habitat Potential Critical Habitat (spawning or nur	serv areas. grour	ndwater upwelli	ngs)		
	Newsons of the Control of the Contro				
Migratory Obstructions (seasona	il, permanent)				
Note any fish observations	, and the state of				
Waterbody Notes Natural Watercourse Tra Surficial Drainage (i.e. furrows)_	apezoidal Channo	el Gr ond Dom	assed Swale_ ninated by Aqu	Bur	ied Tile
Other Habitat Notes, Incidenta	Wildlife Obser	vations, etc.	namau na -no	Cha nne Water	1 Gulof
Field Notes Authored by K. Clam	Field Not	es QA/QCed by	ME		

#### **Stantec**

#### **NIAGARA REGION WIND FARM**

WATER ASSESSMENT AND WATER BODY REPORT

### **Appendix D**

**DFO Operational Statements** 

# HIGH-PRESSURE DIRECTIONAL DRILLING

Fisheries and Oceans Canada Ontario Operational Statement

Version 3.0

For the purpose of this Operational Statement, the term High-Pressure Directional Drilling (HPDD) means trenchless methods of crossing a watercourse using pressurized mud systems. HPDD is used to install cables and pipelines for gas, telecommunications, fibre optics, power, sewer, oil and water lines underneath watercourses and roads. This method is preferable to open-cut and isolated crossings since the cable or pipeline is drilled underneath the watercourse with very little disturbance to the bed or banks. HPDD involves drilling a pilot bore hole underneath the watercourse towards a surface target, back-reaming the bore hole to the drill rig while pulling the pipe along through the hole. This process typically uses the freshwater gel mud system composed of a mixture of clean, freshwater as the base, bentonite (clay-based drilling lubricant) as the viscosifier and synthetic polymers.

The general order of preference for carrying out a cable or pipeline stream crossing in order to protect fish and fish habitat is: a) a punch or bore crossing (see *Punch & Bore Crossings* Operational Statement), b) HPDD crossing, c) dry open-cut crossing, and d) isolated open-cut crossing (see *Isolated or Dry Open-cut Stream Crossings* Operational Statement). This order must be balanced with practical considerations at the site.

One of the risks associated with HPDD is the escape of drilling mud into the environment as a result of a spill, tunnel collapse or the rupture of mud to the surface, commonly known as "frac-out". A frac-out is caused when excessive drilling pressure results in drilling mud propagating toward the surface. The risk of a frac-out can be reduced through proper geotechnical assessment practices and drill planning and execution. The extent of a frac-out can be limited by careful monitoring and having appropriate equipment and response plans ready in the event that one occurs. HPDD can also result in excessive disturbance of riparian vegetation and sedimentation and erosion due to operation of equipment on the shoreline or fording to access the opposite bank.

Fisheries and Oceans Canada (DFO) is responsible for protecting fish and fish habitat across Canada. Under the *Fisheries Act* no one may carry out a work or undertaking that will cause the harmful alteration, disruption or destruction (HADD) of fish habitat unless it has been authorized by DFO. By following the conditions and measures set out below you will be in compliance with subsection 35(1) of the *Fisheries Act*.

The purpose of this Operational Statement is to describe the conditions under which it is applicable to your project and the measures to incorporate into your project in order to avoid negative impacts to fish habitat. You may proceed with your

high-pressure directional drill project without a DFO review when you meet the following conditions:

- the crossing technique will not damage the stream bed and thereby negatively impact fish or fish habitat,
- the crossing is not a wet open-cut crossing,
- you have an emergency frac-out response plan and a contingency crossing plan in place that outline the protocol to monitor, contain and clean-up a potential frac-out and an alternative method for carrying out the crossing, and
- you incorporate the Measures to Protect Fish and Fish Habitat when High-Pressure Directional Drilling listed below in this Operational Statement.

If you cannot meet all of the conditions listed above and cannot incorporate all of the measures listed below then your project may result in a violation of subsection 35(1) of the *Fisheries Act* and you could be subject to enforcement action. In this case, you should contact your Conservation Authority, or the DFO office in your area (see Ontario DFO office list) or Parks Canada if the project is located within its jurisdiction, including the Trent-Severn Waterway and the Rideau Canal, if you wish to obtain an opinion on the possible options you should consider to avoid contravention of the *Fisheries Act*.

You are required to respect all municipal, provincial or federal legislation that applies to the work being carried out in relation to this Operational Statement. The activities undertaken in this Operational Statement must also comply with the Species at Risk Act (www.sararegistry.gc.ca). If you have questions regarding this Operational Statement, please contact one of the agencies listed above.

We ask that you notify DFO, preferably 10 working days before starting your work by filling out and sending the Ontario Operational Statement notification form (www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/prov-terr/index_e.htm) to the DFO office in your area. This information is requested in order to evaluate the effectiveness of the work carried out in relation to this Operational Statement.

#### Measures to Protect Fish and Fish Habitat when High-Pressure Directional Drilling

- Use existing trails, roads or cut lines wherever possible, as access routes to avoid disturbance to the riparian vegetation.
- Design the drill path to an appropriate depth below the watercourse to minimize the risk of frac-out and to a depth



to prevent the line from becoming exposed due to natural scouring of the stream bed. The drill entry and exit points are far enough from the banks of the watercourse to have minimal impact on these areas.

- While this Operational Statement does not cover the clearing of riparian vegetation, the removal of select plants may be necessary to access the construction site. This removal should be kept to a minimum and within the road or utility right-of-way.
- 4. Machinery fording the watercourse to bring equipment required for construction to the opposite side is limited to a one-time event (over and back) and should occur only if an existing crossing at another location is not available or practical to use. A *Temporary Stream Crossing* Operational Statement is also available.
  - 4.1. If minor rutting is likely to occur, stream bank and bed protection methods (e.g., swamp mats, pads) should be used provided they do not constrict flows or block fish passage.
  - **4.2.** Grading of the stream banks for the approaches should not occur.
  - 4.3. If the stream bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation are likely to occur as a result of equipment fording, then a temporary crossing structure or other practice should be used to protect these areas.
  - 4.4. Time the one-time fording to prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the Ontario In-Water Construction Timing Windows).
  - **4.5.** Fording should occur under low flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
- Operate machinery on land above the ordinary high water mark (see definition below) and in a manner that minimizes disturbance to the banks of the watercourse.
  - **5.1.** Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
  - **5.2.** Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent any deleterious substance from entering the water.
  - **5.3.** Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
  - **5.4.** Restore banks to original condition if any disturbance occurs.
- 6. Construct a dugout/settling basin at the drilling exit site to contain drilling mud to prevent sediment and other deleterious substances from entering the watercourse. If this cannot be achieved, use silt fences or other effective sediment and erosion control measures to prevent drilling mud from entering the watercourse. Inspect these measures regularly during the course of construction and make all necessary repairs if any damage occurs.
  - **6.1.** Dispose of excess drilling mud, cuttings and other waste materials at an adequately sized disposal

facility located away from the water to prevent it from entering the watercourse.

 Monitor the watercourse to observe signs of surface migration (frac-out) of drilling mud during all phases of construction.

#### **Emergency Frac-out Response and Contingency Planning**

- Keep all material and equipment needed to contain and clean up drilling mud releases on site and readily accessible in the event of a frac-out.
- 9. Implement the frac-out response plan that includes measures to stop work, contain the drilling mud and prevent its further migration into the watercourse and notify all applicable authorities, including the closest DFO office in the area (see Ontario DFO office list). Prioritize clean up activities relative to the risk of potential harm and dispose of the drilling mud in a manner that prevents re-entry into the watercourse.
- 10. Ensure clean up measures do not result in greater damage to the banks and watercourse than from leaving the drilling mud in place.
- 11. Implement the contingency crossing plan including measures to either re-drill at a more appropriate location or to isolate the watercourse to complete the crossing at the current location. See *Isolated or Dry Open-cut Stream Crossings* Operational Statement for carrying out an isolated trenched crossing.
- 12. Stabilize any waste materials removed from the work site to prevent them from entering the watercourse. This could include covering spoil piles with biodegradable mats or tarps or planting them with preferably native grass or shrubs.
- 13. Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.
  - 13.1. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

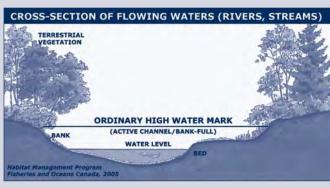
#### **Definition:**

Ordinary high water mark – The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing waters (rivers, streams) this refers to the "active channel/bank-full level" which is often the 1:2 year flood flow return level. In inland lakes, wetlands or marine environments it refers to those parts of the water body bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial

vegetation (excepting water tolerant species). For reservoirs this refers to normal high operating levels (Full Supply Level).

For the Great Lakes this refers to the 80th percentile elevation above chart datum as described in DFO's Fish Habitat and Determining the High Water Mark on Lakes.





## FISHERIES AND OCEANS CANADA OFFICES IN ONTARIO Southern Ontario District

#### **Burlington**

Fisheries and Oceans Canada 3027 Harvester Road, Suite 304 P.O. Box 85060

Burlington, ON L7R 4K3 Telephone: (905) 639-0188 Fax: (905) 639-3549

Email: ReferralsBurlington@DFO-MPO.GC.CA

#### London

Fisheries and Oceans Canada 73 Meg Drive London, ON N6E 2V2 Telephone: (519) 668-2722

Fax: (519) 668-1772

Email: ReferralsLondon@DFO-MPO.GC.CA

#### **Eastern Ontario District**

#### Peterborough

Fisheries and Oceans Canada 501 Towerhill Road, Unit 102 Peterborough, ON K9H 7S3 Telephone: (705) 750-0269 Fax: (705) 750-4016

Email: ReferralsPeterborough@DFO-MPO.GC.CA

#### Prescott

Fisheries and Oceans Canada 401 King Street West Prescott, ON K0E 1T0 Telephone: (613) 925-2865 Fax: (613) 925-2245

Email: ReferralsPrescott@DFO-MPO.GC.CA

#### **Northern Ontario District**

#### **Parry Sound**

Fisheries and Oceans Canada 28 Waubeek Street Parry Sound, ON P2A 1B9 Telephone: (705) 746-2196 Fax: (705) 746-4820

Email: ReferralsParrySound@DFO-MPO.GC.CA

#### Sudbury and Sault Ste. Marie

Fisheries and Oceans Canada 1500 Paris Street, Unit 11 Sudbury, ON P3E 3B8 Telephone: (705) 522-2816 Fax: (705) 522-6421

Email: ReferralsSudbury@DFO-MPO.GC.CA

#### Thunder Bay and Kenora

Fisheries and Oceans Canada Thunder Bay Office 100 Main Street, Suite 425 Thunder Bay, ON P7B 6R9 Telephone: (807) 346-8118

Fax: (807) 346-8545

Email: ReferralsThunderBay@DFO-MPO.GC.CA

Aussi disponible en français

http://www.dfo-mpo.gc.ca/oceans-habitat/habitat/modernizing-moderniser/epmp-pmpe/index_f.asp

DFO/2007-1329

### **NOTIFICATION FORM**

Fisheries and Oceans Canada Ontario Operational Statement

Version 3.1

PROPONENT INFORMAT	ION			
NAME: CITY/TOWN: TEL. NO. (RESIDENCE): FAX NO:	STREET ADDRES PROVINCE/TERR TEL. NO. (WORK) EMAIL ADDRESS	RITORY: POSTAL CODE: ): S:		
CONTRACTOR INFORMA	TION (provide this inform	ation if a Contractor is workin	g on behalf of the Proponent)	
NAME: CITY/TOWN: TEL. NO. (RESIDENCE): FAX NO:	STREET ADDRES PROVINCE/TERR TEL. NO. (WORK) EMAIL ADDRESS	TORY:	POSTAL CODE:	
PROJECT INFORMATION				
Select Operational Statements that are	being used (check all applicab	le boxes):		
<ul> <li>□ Beach Creation for Residential Use</li> <li>□ Beaver Dam Removal</li> <li>□ Bridge Maintenance</li> <li>□ Clear-Span Bridges</li> <li>□ Culvert Maintenance</li> <li>□ Dock and Boathouse Construction</li> <li>□ High-Pressure Directional Drilling</li> </ul>	<ul> <li>□ Ice Bridges and Snow Fills</li> <li>□ Isolated Pond Construction</li> <li>□ Isolated or Dry Open-cut Stream Crossings</li> <li>□ Maintenance of Riparian Vegetation in Existing Rights-of-Way</li> <li>□ Mineral Exploration Activities</li> <li>□ Moorings</li> <li>□ Overhead Line Construction</li> </ul>		<ul> <li>□ Public Beach Maintenance</li> <li>□ Punch &amp; Bore Crossings</li> <li>□ Routine Maintenance Dredging</li> <li>□ Submerged Log Salvage</li> <li>□ Temporary Stream Crossing</li> <li>□ Underwater Cables</li> </ul>	
Select the type of water body or water  River, Stream, Creek Lake (8 hectares or greater)	☐ Marine (Ocean or Sea)☐ Pond or wetland (pond is le	,	☐ Estuary	
PROJECT LOCATION (S) multiple project locations on an add	(fill out this section if the pr ditional sheet if necessary)	oject location is different from	Proponent Information; append	
Name of water body or watercourse		Coordinates of the Project (UTM of Minutes, Seconds), if available Easting: Latitude:	o-ordinate or Degrees,  Northing: Longitude:	
Legal Description (Plan, Block, Lot, Concession, Township)		Directions to Access the Project Site (i.e., Route or highway number, etc.)		
Proposed Start Date (YYYY/MM/DD):		Proposed Completion Date (YYYY/MM/DD):		
We ask that you notify DFO, preferably 10 worki your area. This information is requested in order	ng days before starting your work, by to evaluate the effectiveness of the w	filling out and sending in, by mail or by york carried out in relation to the Operat	fax, this notification form to the DFO office in ional Statement.	
l, knowledge, correct and complete.	(print name)	certify that the information give	n on this form is, to the best of my	
Signature	Date			
Note: If you cannot meet all of the conditions and cannot and you could be subject to enforcement action. In this				

and you could be subject to enforcement action. In this case, you should contact your Conservation Authority, or the DFO office in your area (see Ontario DFO office list), or Parks Canada if the project is located within its jurisdiction, including the Trent-Severn Waterway and the Rideau Canal, if you wish to obtain more information on the possible options you should consider to avoid contravention of the Fisheries Act. For activities carried out under the Crown Forest Sustainability Act, the requirements of the applicable Operational Statements are addressed through an existing agreement and the Ontario Ministry of Natural Resources is the first point of contact.

Information about the above-noted proposed work or undertaking is collected by DFO under the authority of the Fisheries Act for the purpose of administering the fish habitat protection provisions of the Fisheries Act. Personal information will be protected under the provisions of the Privacy Act and will be stored in the Personal Information Bank DFO-SCI-605. Under the Privacy Act, individuals have a right to, and on request shall be given access to, any personal information about them contained in a personal information bank. Instructions for obtaining personal information are contained in the Government of Canada's Info Source publications available at www.infosource.gc.ca or in Government of Canada offices. Information other than "personal" information may be accessible or protected as required by the provisions of the Access to Information Act.



#### FISHERIES AND OCEANS CANADA OFFICES IN ONTARIO

#### **Southern Ontario District**

#### **Burlington**

Fisheries and Oceans Canada 3027 Harvester Road, Suite 304 P.O. Box 85060 Burlington, ON L7R 4K3

Telephone: (905) 639-0188 Fax: (905) 639-3549

Email: ReferralsBurlington@DFO-MPO.GC.CA

#### London

Fisheries and Oceans Canada 73 Meg Drive London, ON N6E 2V2 Telephone: (519) 668-2722

Fax: (519) 668-1772

Email: ReferralsLondon@DFO-MPO.GC.CA

#### **Eastern Ontario District**

#### Peterborough

Fisheries and Oceans Canada 501 Towerhill Road, Unit 102 Peterborough, ON K9H 7S3 Telephone: (705) 750-0269

Fax: (705) 750-4016

Email: ReferralsPeterborough@DFO-MPO.GC.CA

#### **Prescott**

Fisheries and Oceans Canada 401 King Street West Prescott, ON K0E 1T0 Telephone: (613) 925-2865

Fax: (613) 925-2245

Email: ReferralsPrescott@DFO-MPO.GC.CA

#### **Northern Ontario District**

### **Parry Sound**

Fisheries and Oceans Canada 28 Waubeek Street Parry Sound, ON P2A 1B9 Telephone: (705) 746-2196

Fax: (705) 746-4820

Email: ReferralsParrySound@DFO-MPO.GC.CA

### Sudbury and Sault Ste. Marie

Fisheries and Oceans Canada 1500 Paris Street, Unit 11 Sudbury, ON P3E 3B8 Telephone: (705) 522-2816 Fax: (705) 522-6421

Fax: (705) 522-6421

Email: ReferralsSudbury@DFO-MPO.GC.CA

#### Thunder Bay and Kenora

Fisheries and Oceans Canada Thunder Bay Office 100 Main Street, Suite 425 Thunder Bay, ON P7B 6R9 Telephone: (807) 346-8118

Fax: (807) 346-8545

Email: ReferralsThunderBay@DFO-MPO.GC.CA

Aussi disponible en français

http://www.dfo-mpo.gc.ca/oceans-habitat/habitat/modernizing-moderniser/epmp-pmpe/index_f.asp



# ISOLATED OR DRY OPEN-CUT STREAM CROSSINGS

**Fisheries and Oceans Canada Ontario Operational Statement** 

Version 1.0

For the purpose of this Operational Statement, the term "Isolated Crossing" means a temporary stream crossing technique that allows work (e.g., trenched pipeline or cable installation) to be carried out "in-the-dry" while diverting the natural flow around the site during construction. These types of open trenched crossings are isolated using flume or dam and pump techniques (see Pipeline Associated Watercrossings, 2005 at http://www.capp.ca/default.asp?V_DOC_ID=763&PubID=96717). The term "Dry Open-cut Stream Crossing" means a temporary stream crossing work (e.g., trenched pipeline or cable installation) that is carried out during a period when the entire stream width is seasonally dry or is frozen to the bottom.

The risks to fish and fish habitat associated with isolated open cut stream crossings include the potential for direct damage to substrates, release of excessive sediments, loss of riparian habitat, stranding of fish in dewatered areas, impingement/entrainment of fish at pump intakes, and disruption of essential fish movement patterns. Similarly, dry open-cut stream crossings pose a risk to fish and fish habitat due to potential harmful alteration of substrates, loss of riparian habitat, and release of excessive sediment once stream flows resume.

The order of preference for carrying out a cable or pipeline stream crossing, in order to protect fish and fish habitat, is: a) punch or bore crossing (see Punch & Bore Crossings Operational Statement); b) high-pressure directional drill crossing (see High-Pressure Directional Drilling Operational Statement); c) dry opencut crossing; and d) isolated open-cut crossing. This order must be balanced with practical considerations at the site.

Fisheries and Oceans Canada (DFO) is responsible for protecting fish and fish habitat across Canada. Under the Fisheries Act no one may carry out a work or undertaking that will cause the harmful alteration, disruption or destruction (HADD) of fish habitat unless it has been authorized by DFO. By following the conditions and measures set out below you will be in compliance with subsection 35(1) of the Fisheries Act.

The purpose of this Operational Statement is to describe the conditions under which it is applicable to your project and the measures to incorporate into your project in order to avoid negative impacts to fish habitat. You may proceed with your isolated or dry open-cut stream crossing project without a DFO review when you meet the following conditions:

if working within the Thames River, Sydenham River, Ausable River, Grand River, or Maitland River, you have contacted your Conservation Authority or local DFO Office (see Ontario

DFO office list) to ensure that your project will not impact Schedule I mussel species at risk under the federal Species at Risk Act (SARA), before proceeding,

- for dry, open-cut crossings the watercourse is dry or frozen completely to the bottom at the site,
- for isolated crossings, the channel width of the watercourse at the crossing site is less than 5 meters from ordinary high water mark to ordinary high water mark (HWM) (see definition below),
- the isolated crossing does not involve the construction or use of an off-stream diversion channel, or the use of earthen dams,
- the isolated crossing ensures that all natural upstream flows are conveyed downstream during construction, with no change in quality or quantity,
- the site does not occur at a stream location involving known fish spawning habitat, particularly if it is dependent on groundwater upwelling,
- the use of explosives is not required to complete the crossing, and
- you incorporate the Measures to Protect Fish and Fish Habitat when Carrying Out an Isolated or Dry Open-cut Stream Crossing listed below.

If you cannot meet all of the conditions listed above and cannot incorporate all of the measures listed below then your project may result in a violation of subsection 35(1) of the Fisheries Act and you could be subject to enforcement action. In this case, you should contact your Conservation Authority, or the DFO office in your area (see Ontario DFO office list) or Parks Canada if the project is located within its jurisdiction, including the Trent-Severn Waterway and the Rideau Canal, if you wish to obtain an opinion on the possible options you should consider to avoid contravention of the Fisheries Act.

You are required to respect all municipal, provincial and federal legislation that applies to the work being carried out in relation to this Operational Statement. The activities undertaken in this Operational Statement must also comply with SARA (www.sararegistry.gc.ca). If you have questions regarding this Operational Statement, please contact one of the agencies listed above.

We ask that you notify DFO, preferably 10 working days before starting your work, by filling out and sending the Ontario Operational Statement notification form (www.dfo-mpo.gc.ca/ regions/central/habitat/os-eo/prov-terr/index_e.htm) to the DFO office in your area. This information is requested in order to evaluate the effectiveness of the work carried out in relation to this Operational Statement.



# Measures to Protect Fish and Fish Habitat when Carrying Out an Isolated or Dry Open-Cut Stream Crossing

- Use existing trails, roads or cut lines wherever possible, as access routes to avoid disturbance to the riparian vegetation.
- Locate crossings at straight sections of the stream, perpendicular to the banks, whenever possible. Avoid crossing on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in the erosion and scouring of the stream bed.
- Complete the crossing in a manner that minimizes the duration of instream work.
- Construction should be avoided during unusually wet, rainy or winter thaw conditions.
- 5. While this Operational Statement does not cover the clearing of riparian vegetation, the removal of select plants may be necessary to access the construction site. This removal should be kept to a minimum and within the utility right-of-way.
- **6.** Machinery fording a flowing watercourse to bring equipment required for construction to the opposite side is limited to a one-time event (over and back) and is to occur only if an existing crossing at another location is not available or practical to use. Operational Statements are also available for *Ice Bridges and Snow Fills*, *Clear-Span Bridges*, and *Temporary Stream Crossing*.
  - 6.1. If minor rutting is likely to occur, stream bank and bed protection methods (e.g., swamp mats, pads) should be used provided they do not constrict flows or block fish passage.
  - **6.2.** Grading of the stream banks for the approaches should not occur.
  - 6.3. If the stream bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation is likely to occur as a result of equipment fording, then a temporary crossing structure or other practice should be used to protect these areas.
  - **6.4.** Time the one-time fording to prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the *Ontario In-Water Construction Timing Windows*).
  - 6.5. Fording should occur under low flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
- Operate machinery in a manner that minimizes disturbance to the watercourse bed and banks.
  - 7.1. Protect entrances at machinery access points (e.g., using swamp mats) and establish single site entry and exit.
  - **7.2.** Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.

- 7.3. Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent deleterious substances from entering the water.
- **7.4.** Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
- 8. Install effective sediment and erosion control measures before starting work to prevent entry of sediment into the watercourse. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs
- Stabilize any waste materials removed from the work site, above the HWM, to prevent them from entering the watercourse. This could include covering spoil piles with biodegradable mats or tarps or planting them with grass or shrubs.
- 10. Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch to prevent soil erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.
  - Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

## Measures to Protect Fish and Fish Habitat when Carrying Out an Isolated Crossing

Temporary isolation is used to allow work "in-the-dry" while maintaining the natural downstream flow by installing dams up and downstream of the site and conveying all of the natural upstream flow into a flume, or pumping it around the isolated area. In addition to measures 1 to 10, the following measures should be carried out when conducting an isolated stream crossing:

- **11.** Time isolated crossings to protect sensitive fish life stages by adhering to fisheries timing windows (see Measure 6.4).
- 12. Use dams made of non-earthen material, such as water-inflated portable dams, pea gravel bags, concrete blocks, steel or wood wall, clean rock, sheet pile or other appropriate designs, to separate the dewatered work site from flowing water.
  - 12.1. If granular material is used to build dams, use clean or washed material that is adequately sized (i.e., moderately sized rock and not sand or gravel) to withstand anticipated flows during the construction. If necessary, line the outside face of dams with heavy poly-plastic to make them impermeable to water. Material to build these dams should not be taken from below the HWM of any water body.
  - **12.2.** Design dams to accommodate any expected high flows of the watercourse during the construction period.

- **13.** Before dewatering, rescue any fish from within the isolated area and return them safely immediately downstream of the worksite.
  - 13.1. You will require a permit from DFO to relocate any aquatic species that are listed as either endangered or threatened under SARA. Please contact your Conservation Authority or the DFO office in your area to determine if an aquatic species at risk is in the vicinity of your project and, if appropriate, use the DFO website at <a href="www.dfo-mpo.gc.ca/species-especes/permits/sarapermits-e.asp">www.dfo-mpo.gc.ca/species-especes/permits/sarapermits-e.asp</a> to apply for a permit.
- 14. Pump sediment laden dewatering discharge into a vegetated area or settling basin, and prevent sediment and other deleterious substances from entering any water body.
- **15.** Remove accumulated sediment and excess spoil from the isolated area before removing dams.
- **16.** Stabilize the **streambed** and restore the original channel shape, bottom gradient and substrate to pre-construction condition before removing dams.
- 17. Ensure banks are stabilized, restored to original shape, adequately protected from erosion and re-vegetated, preferably with native species.
- 18. If rock is used to stabilize banks, it should be clean, free of fine materials, and of sufficient size to resist displacement during peak flood events. The rock should be placed at the original stream bank grade to ensure there is no infilling or narrowing of the watercourse.
- 19. Gradually remove the downstream dam first, to equalize water levels inside and outside of the isolated area and to allow suspended sediments to settle.
- **20.** During the final removal of dams, restore the original channel shape, bottom gradient and substrate at these locations.

#### 21. Pumped Diversion

Pumped diversions are used to divert water around the isolated area to maintain natural downstream flows and prevent upstream ponding.

- 21.1. Ensure intakes are operated in a manner that prevents streambed disturbance and fish mortality. Guidelines to determine the appropriate mesh size for intake screens may be obtained from DFO (e.g., Freshwater Intake End-of-Pipe Fish Screen Guideline (1995), available at www.dfo-mpo.gc.ca/Library/223669.pdf).
- 21.2. Ensure the pumping system is sized to accommodate any expected high flows of the watercourse during the construction period. Pumps should be monitored at all times, and back-up pumps should be readily available on-site in case of pump failure.
- 21.3. Protect pump discharge area(s) to prevent erosion and the release of suspended sediments downstream, and remove this material when the works have been completed.

## Measures to Protect Fish and Fish Habitat when Carrying Out a <u>Dry Open-Cut Stream Crossing</u>

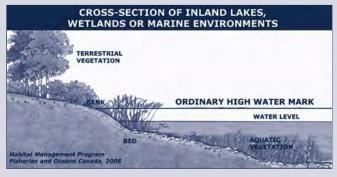
In addition to measures 1 to 10, the following measures should be carried out when conducting a dry open-cut stream crossing:

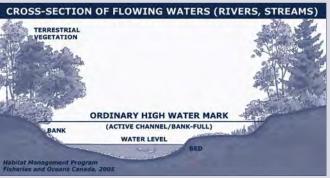
- Stabilize the streambed and restore the original channel shape, bottom gradient and substrate to pre-construction condition.
- 23. Ensure banks are stabilized, restored to original shape, adequately protected from erosion and re-vegetated, preferably with native species.

#### **Definition:**

Ordinary high water mark (HWM) - The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing waters (rivers, streams) this refers to the "active channel/bank-full level" which is often the 1:2 year flood flow return level. In inland lakes, wetlands or marine environments it refers to those parts of the water body bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs this refers to normal high operating levels (Full Supply Level).

For the Great Lakes this refers to the 80th percentile elevation above chart datum as described in DFO's Fish Habitat and Determining the High Water Mark on Lakes.





#### FISHERIES AND OCEANS CANADA OFFICES IN ONTARIO

#### **Southern Ontario District**

#### **Burlington**

Fisheries and Oceans Canada 3027 Harvester Road, Suite 304

P.O. Box 85060

Burlington, ON L7R 4K3 Telephone: (905) 639-0188 Fax: (905) 639-3549

Fire all Defermed Devilor at

Email: ReferralsBurlington@DFO-MPO.GC.CA

#### London

Fisheries and Oceans Canada 73 Meg Drive London, ON N6E 2V2 Telephone: (519) 668-2722

Fax: (519) 668-1772

Email: ReferralsLondon@DFO-MPO.GC.CA

#### **Eastern Ontario District**

#### Peterborough

Fisheries and Oceans Canada 501 Towerhill Road, Unit 102 Peterborough, ON K9H 7S3 Telephone: (705) 750-0269

Fax: (705) 750-4016

Email: ReferralsPeterborough@DFO-MPO.GC.CA

#### Prescott

Fisheries and Oceans Canada 401 King Street West Prescott, ON K0E 1T0 Telephone: (613) 925-2865

Fax: (613) 925-2245

Email: ReferralsPrescott@DFO-MPO.GC.CA

#### **Northern Ontario District**

#### **Parry Sound**

Fisheries and Oceans Canada 28 Waubeek Street Parry Sound, ON P2A 1B9 Telephone: (705) 746-2196

Fax: (705) 746-4820

Email: ReferralsParrySound@DFO-MPO.GC.CA

#### Sudbury and Sault Ste. Marie

Fisheries and Oceans Canada 1500 Paris Street, Unit 11 Sudbury, ON P3E 3B8 Telephone: (705) 522-2816

Fax: (705) 522-6421

Email: ReferralsSudbury@DFO-MPO.GC.CA

#### **Thunder Bay and Kenora**

Fisheries and Oceans Canada Thunder Bay Office 100 Main Street, Suite 425 Thunder Bay, ON P7B 6R9

Telephone: (807) 346-8118 Fax: (807) 346-8545

Email: ReferralsThunderBay@DFO-MPO.GC.CA

Aussi disponible en français

http://www.dfo-mpo.gc.ca/oceans-habitat/habitat/modernizing-moderniser/epmp-pmpe/index f.asp

DFO/2007-1329



# OVERHEAD LINE CONSTRUCTION

**Fisheries and Oceans Canada Ontario Operational Statement** 

Version 3.0

Overhead lines are constructed for electrical or telecommunication transmission across many watercourses that range in size from small streams and ponds to large rivers, lakes and reservoirs. This Operational Statement applies to selective removal of vegetation along the right-of-way to provide for installation and safe operation of overhead lines, and passage of equipment and materials across the water body.

Although fish habitat occurs throughout a water system, it is the riparian habitat that is most sensitive to overhead line construction. Riparian vegetation occurs adjacent to the watercourse and directly contributes to fish habitat by providing shade, cover, and spawning and food production areas. It is important to design and build your overhead line project to meet your needs while also protecting riparian areas. Potential impacts to fish and fish habitat include excessive loss of riparian vegetation, erosion and sedimentation resulting from bank disturbance and loss of plant root systems, rutting and compaction of stream substrate at crossing sites, and disruption of sensitive fish life stages.

Fisheries and Oceans Canada (DFO) is responsible for protecting fish and fish habitat across Canada. Under the Fisheries Act no one may carry out a work or undertaking that will cause the harmful alteration, disruption or destruction (HADD) of fish habitat unless it has been authorized by DFO. By following the conditions and measures set out below you will be in compliance with subsection 35(1) of the Fisheries Act.

The purpose of this Operational Statement is to describe the conditions under which it is applicable to your project and the measures to incorporate into your project in order to avoid negative impacts to fish habitat. You may proceed with your overhead line project without a DFO review when you meet the following conditions:

- it does not require the construction or placement of any temporary or permanent structures (e.g. islands, poles, crib works, etc.) below the ordinary high water mark (HWM) (see definition below), and
- vou incorporate the Measures to Protect Fish and Fish Habitat when Constructing Overhead Lines listed below in this Operational Statement.

If you cannot meet all of the conditions listed above and cannot incorporate all of the measures listed below then your project may result in a violation of subsection 35(1) of the Fisheries Act and you could be subject to enforcement action. In this case,

you should contact your Conservation Authority, or the DFO office in your area (see Ontario DFO office list) or Parks Canada if the project is located within its jurisdiction, including the Trent-Severn Waterway and the Rideau Canal, if you wish to obtain an opinion on the possible options you should consider to avoid contravention of the Fisheries Act.

You are required to respect all municipal, provincial or federal legislation that applies to the work being carried out in relation to this Operational Statement. The activities undertaken in this Operational Statement must also comply with the Species at Risk Act (www.sararegistry.gc.ca). If you have questions regarding this Operational Statement, please contact one of the agencies listed above.

We ask that you notify DFO, preferably 10 working days before starting your work by filling out and sending the Ontario Operational Statement notification form (www.dfo-mpo.gc.ca/ regions/central/habitat/os-eo/prov-terr/index_e.htm) to the DFO office in your area. This information is requested in order to evaluate the effectiveness of the work carried out in relation to this Operational Statement.

### **Measures to Protect Fish and Fish Habitat** when Constructing Overhead Lines

- 1. Installing overhead lines under frozen conditions is preferable in all situations. On wet terrains (e.g., bogs), lines should be installed under frozen conditions, where possible, or using aerial methods (i.e., helicopter).
- 2. Design and construct approaches so that they are perpendicular to the watercourse wherever possible to minimize loss or disturbance to riparian vegetation.
- Avoid building structures on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or overhead line structures.
  - **3.1.** Wherever possible, locate all temporary or permanent structures, such as poles, sufficiently above the HWM to prevent erosion.
- 4. While this Operational Statement does not cover the clearing of riparian vegetation, the removal of select plants may be necessary to accommodate the overhead line. This removal



should be kept to a minimum and within the road or utility right-ofway.

- 5. Machinery fording the watercourse to bring equipment required for construction to the opposite side is limited to a one-time event (over and back) and should occur only if an existing crossing at another location is not available or practical to use. A *Temporary Stream Crossing* Operational Statement is also available.
  - 5.1. If minor rutting is likely to occur, stream bank and bed protection methods (e.g., swamp mats, pads) should be used provided they do not constrict flows or block fish passage.
  - **5.2.** Grading of the stream banks for the approaches should not occur.
  - 5.3. If the stream bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation is likely to occur as a result of equipment fording, then a temporary crossing structure or other practice should be used to protect these areas.
  - **5.4.** Time the one-time fording to prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the *Ontario In-Water Construction Timing Windows*).
  - 5.5. Fording should occur under low flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
- Operate machinery on land and in a manner that minimizes disturbance to the banks of the watercourse.
  - **6.1.** Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
  - **6.2.** Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent any deleterious substance from entering the water.
  - **6.3.** Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
  - **6.4.** Restore banks to original condition if any disturbance occurs.
- Install effective sediment and erosion control measures before starting work to prevent entry of sediment into the watercourse. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs.
  - 7.1. Avoid work during wet, rainy conditions or use alternative techniques such as aerial methods (i.e., helicopter) to install overhead lines.
- 8. Stabilize any waste materials removed from the work site to prevent them from entering the watercourse. This could include covering spoil piles with biodegradable mats or tarps or planting them with grass or shrubs.
- 9. Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g.,

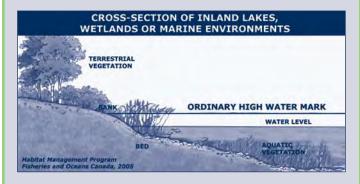
cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.

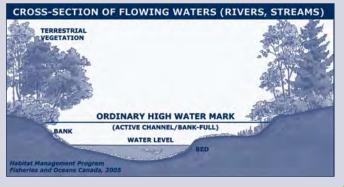
**9.1.** Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

#### **Definition:**

Ordinary high water mark (HWM) – The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing waters (rivers, streams) this refers to the "active channel/bank-full level" which is often the 1:2 year flood flow return level. In inland lakes, wetlands or marine environments it refers to those parts of the water body bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs this refers to normal high operating levels (Full Supply Level).

For the Great Lakes this refers to the 80th percentile elevation above chart datum as described in DFO's Fish Habitat and Determining the High Water Mark on Lakes.





#### FISHERIES AND OCEANS CANADA OFFICES IN ONTARIO

#### **Southern Ontario District**

#### **Burlington**

Fisheries and Oceans Canada 3027 Harvester Road, Suite 304 P.O. Box 85060 Burlington, ON L7R 4K3 Telephone: (905) 639-0188

Fax: (905) 639-3549

Email: ReferralsBurlington@DFO-MPO.GC.CA

#### London

Fisheries and Oceans Canada 73 Meg Drive London, ON N6E 2V2 Telephone: (519) 668-2722

Fax: (519) 668-1772

Email: ReferralsLondon@DFO-MPO.GC.CA

#### **Eastern Ontario District**

#### Peterborough

Fisheries and Oceans Canada 501 Towerhill Road, Unit 102 Peterborough, ON K9H 7S3 Telephone: (705) 750-0269

Fax: (705) 750-4016

Email: ReferralsPeterborough@DFO-MPO.GC.CA

#### **Prescott**

Fisheries and Oceans Canada 401 King Street West Prescott, ON K0E 1T0 Telephone: (613) 925-2865

Fax: (613) 925-2245

Email: ReferralsPrescott@DFO-MPO.GC.CA

#### **Northern Ontario District**

#### **Parry Sound**

Fisheries and Oceans Canada 28 Waubeek Street Parry Sound, ON P2A 1B9 Telephone: (705) 746-2196

Fax: (705) 746-4820

Email: ReferralsParrySound@DFO-MPO.GC.CA

#### Sudbury and Sault Ste. Marie

Fisheries and Oceans Canada 1500 Paris Street, Unit 11 Sudbury, ON P3E 3B8 Telephone: (705) 522-2816

Fax: (705) 522-6421

Email: ReferralsSudbury@DFO-MPO.GC.CA

#### **Thunder Bay and Kenora**

Fisheries and Oceans Canada Thunder Bay Office 100 Main Street, Suite 425 Thunder Bay, ON P7B 6R9 Telephone: (807) 346-8118

Fax: (807) 346-8545

Email: ReferralsThunderBay@DFO-MPO.GC.CA

Aussi disponible en français

http://www.dfo-mpo.gc.ca/oceans-habitat/habitat/modernizing-moderniser/epmp-pmpe/index_f.asp

DFO/2007-1329



### **PUNCH & BORE CROSSINGS**

**Fisheries and Oceans Canada Ontario Operational Statement** 

Version 3.0

For the purpose of this Operational Statement, the term punch and bore refers to a trenchless crossing method which involves the excavation of a vertical bell hole or shallow depression on either side of the watercourse. Horizontal punching or boring between the two points, at an appropriate depth below the watercourse, completes the creation of a passage-way for the crossing. Punch and bore crossings allow cables and pipelines to be installed under watercourses without imparting any disturbance to the bed and banks. Punch and bore crossings differ from high-pressure directional drilled crossings, in that no pressurized mud systems are required, thereby avoiding the risk of sediment release due to frac-out.

Punch and bore crossings can negatively impact fish and fish habitat due to erosion and sedimentation from site disturbance and dewatering of bell holes or the collapse of the punch or bore hole under the stream. Disturbing riparian vegetation can reduce important shoreline cover, shade and food production areas. Machinery fording the stream can disturb bottom and bank substrates, disrupt sensitive fish life stages, and introduce deleterious substances if equipment is not properly maintained. Impacts can be reduced if an emergency response plan and clean-up materials are in place.

The general order of preference for carrying out a cable or pipeline stream crossing in order to protect fish and fish habitat is: a) a punch or bore crossing, b) high-pressure directional drill crossing (see High-Pressure Directional Drilling Operational Statement), c) dry open-cut crossing, and d) isolated open-cut crossing (see Isolated or Dry Open-cut Stream Crossings Operational Statement). This order must be balanced with practical considerations at the site.

Fisheries and Oceans Canada (DFO) is responsible for protecting fish and fish habitat across Canada. Under the Fisheries Act no one may carry out a work or undertaking that will cause the harmful alteration, disruption or destruction (HADD) of fish habitat unless it has been authorized by DFO. By following the conditions and measures set out below you will be in compliance with subsection 35(1) of the Fisheries Act.

The purpose of this Operational Statement is to describe the conditions under which it is applicable to your project and the measures to be incorporated into your project in order to avoid negative impacts to fish habitat. You may proceed with your punch or bore crossing project without a DFO review when you meet the following conditions:

the crossing is not a wet open-cut crossing,

- the crossing technique will not damage the stream bed or bank and thereby negatively impact fish or fish habitat,
- the site does not occur at a stream location involving known fish spawning habitat, particularly if it is dependent on groundwater upwelling, and
- you incorporate the Measures to Protect Fish and Fish Habitat when Conducting Punch and Bore Crossings, listed

If you cannot meet all of the conditions listed above and cannot incorporate all of the measures listed below then your project may result in a violation of subsection 35(1) of the Fisheries Act and you could be subject to enforcement action. In this case, you should contact your Conservation Authority, or the DFO office in your area (see Ontario DFO office list) or Parks Canada if the project is located within its jurisdiction, including the Trent-Severn Waterway and the Rideau Canal, if you wish to obtain an opinion on the possible options you should consider to avoid contravention of the Fisheries Act.

You are required to respect all municipal, provincial or federal legislation that applies to the work being carried out in relation to this Operational Statement. The activities undertaken in this Operational Statement must also comply with the Species at Risk Act (www.sararegistry.gc.ca). If you have questions regarding this Operational Statement, please contact one of the agencies listed above.

We ask that you notify DFO, preferably 10 working days before starting your work by filling out and sending the Ontario Operational Statement notification form (www.dfo-mpo.gc.ca/ regions/central/habitat/os-eo/prov-terr/index_e.htm) to the DFO office in your area. This information is requested in order to evaluate the effectiveness of the work carried out in relation to this Operational Statement.

### **Measures to Protect Fish and Fish Habitat** when Conducting Punch and Bore Crossings

- A punch or bore crossing can be conducted at any time of the year provided there is not a high risk of failure and it does not require in-water activities such as machinery fording.
- Design the punch or bore path for an appropriate depth below the watercourse to prevent the pipeline or cable from becoming exposed due to natural scouring of the stream bed.



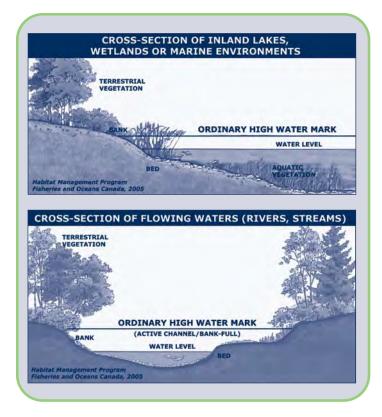
- While this Operational Statement does not cover the clearing of riparian vegetation, the removal of select plants may be necessary to access the construction site and to excavate the bell holes. This removal is to be kept to a minimum and within the utility right-of-way.
- Install effective sediment and erosion control measures before starting work to prevent entry of sediment into the water body. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs.
- 5. Machinery fording the watercourse to bring equipment required for construction to the opposite side is limited to a one-time event (over and back) and should occur only if an existing crossing at another location is not available or practical to use. A *Temporary Stream Crossing* Operational Statement is also available.
  - 5.1. If minor rutting is likely to occur, stream bank and bed protection methods (e.g., swamp mats, pads) should be used provided they do not constrict flows or block fish passage.
  - **5.2.** Grading of the stream banks for the approaches should not occur.
  - 5.3. If the stream bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation are likely to occur as a result of equipment fording, then a temporary crossing structure or other practice should be used to protect these areas.
  - **5.4.** Time the one-time fording to prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the *Ontario In-Water Construction Timing Windows*).
  - 5.5. Fording should occur under low flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
- 6. Operate machinery on land above the ordinary high water mark (HWM) (see definition below) and in a manner that minimizes disturbance to the banks of the watercourse.
  - **6.1.** Machinery is to arrive on-site in a clean condition and is to be maintained free of fluid leaks.
  - **6.2.** Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent any deleterious substance from entering the water.
  - **6.3.** Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
- Excavate bell holes beyond the HWM, far enough away from any watercourse to allow containment of any sediment or deleterious substances above the HWM.
  - 7.1. When dewatering bell holes, remove suspended solids by diverting water into a vegetated area or settling basin, and prevent sediment and other deleterious substances from entering the watercourse.

- 7.2. Stabilize any waste materials removed from the work site (including bell holes) to prevent them from entering the watercourse. This could include covering spoil piles with biodegradable mats or tarps or planting them with grass or shrubs.
- **7.3.** After suitably backfilling and packing the bell holes, vegetate any disturbed areas (see Measure 11).
- **8.** Monitor the watercourse to observe signs of malfunction during all phases of the work.
- For the duration of the work, keep on-site and readily accessible, all material and equipment needed to contain and clean-up releases of sediment-laden water and other deleterious substances.
- 10. Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance. This plan is to include measures to: a) stop work, contain sediment-laden water and other deleterious substances and prevent their further migration into the watercourse; b) notify all applicable authorities in the area, including the closest DFO office; c) promptly clean-up and appropriately dispose of the sediment-laden water and deleterious substances; and d) ensure clean-up measures are suitably applied so as not to result in further alteration of the bed and/or banks of the watercourse.
- 11. Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.
  - Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

#### **Definition:**

Ordinary high water mark (HWM) – The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing waters (rivers, streams) this refers to the "active channel/bank-full level" which is often the 1:2 year flood flow return level. In inland lakes, wetlands or marine environments it refers to those parts of the water body bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs this refers to normal high operating levels (Full Supply Level).

For the Great Lakes this refers to the 80th percentile elevation above chart datum as described in DFO's Fish Habitat and Determining the High Water Mark on Lakes.



### FISHERIES AND OCEANS CANADA OFFICES IN ONTARIO **Southern Ontario District**

#### **Burlington**

Fisheries and Oceans Canada 3027 Harvester Road, Suite 304 P.O. Box 85060 Burlington, ON L7R 4K3

Telephone: (905) 639-0188 Fax: (905) 639-3549

Email: ReferralsBurlington@DFO-MPO.GC.CA

#### London

Fisheries and Oceans Canada 73 Meg Drive London, ON N6E 2V2

Telephone: (519) 668-2722 Fax: (519) 668-1772

Email: ReferralsLondon@DFO-MPO.GC.CA

#### **Eastern Ontario District**

#### Peterborough

Fisheries and Oceans Canada 501 Towerhill Road, Unit 102 Peterborough, ON K9H 7S3 Telephone: (705) 750-0269 Fax: (705) 750-4016

Email: ReferralsPeterborough@DFO-MPO.GC.CA

#### Prescott

Fisheries and Oceans Canada 401 King Street West Prescott, ON K0E 1T0 Telephone: (613) 925-2865 Fax: (613) 925-2245

Email: ReferralsPrescott@DFO-MPO.GC.CA

#### **Northern Ontario District**

#### Parry Sound

Fisheries and Oceans Canada 28 Waubeek Street Parry Sound, ON P2A 1B9 Telephone: (705) 746-2196

Fax: (705) 746-4820

Email: ReferralsParrySound@DFO-MPO.GC.CA

#### Sudbury and Sault Ste. Marie

Fisheries and Oceans Canada 1500 Paris Street, Unit 11 Sudbury, ON P3E 3B8 Telephone: (705) 522-2816

Fax: (705) 522-6421

Email: ReferralsSudbury@DFO-MPO.GC.CA

#### **Thunder Bay and Kenora**

Fisheries and Oceans Canada Thunder Bay Office

100 Main Street, Suite 425 Thunder Bay, ON P7B 6R9 Telephone: (807) 346-8118

Fax: (807) 346-8545

Email: ReferralsThunderBay@DFO-MPO.GC.CA

Aussi disponible en français

http://www.dfo-mpo.gc.ca/oceans-habitat/habitat/ modernizing-moderniser/epmp-pmpe/index f.asp

### **Stantec**

### **NIAGARA REGION WIND FARM**

WATER ASSESSMENT AND WATER BODY REPORT

## **Appendix E**

Curricula vitae

### Aquatic Ecologist / Project Manager



Kathleen's experience is focused in aquatic biology, including stream, lake and wetland assessments, benthic macroinvertebrate identification and biomonitoring, and fisheries habitat studies. She has experience conducting environmental impact studies, environmental effects monitoring programs, baseline studies and watershed plans. Using ecosystem based approaches, typical multidisciplinary project involvement includes Class EAs and infrastructure siting/routing studies, evaluating alternative design concepts and developing mitigative solutions to minimize impacts to the natural environment.

Kathleen has acquired an understanding of federal and provincial legislation, policies and procedures for natural heritage features, particularly regarding working in and around fish habitat in Ontario. She is experienced in the Fisheries Act Authorization process, including evaluating the effects of development on aquatic habitat, designing fish habitat mitigation measures, and negotiating Fisheries Compensation Strategies. In addition, Kathleen serves as a team leader for aquatic science staff in Ontario, including professionals in the fields of fisheries biology, fluvial geomorphology, and aquatic invertebrate taxonomy.

#### **EDUCATION**

M.Sc., Watershed Ecosystems, Trent University, Peterborough, Ontario, 2003

B.Sc. (Env.), Environmental Sciences, University of Guelph, Guelph, Ontario, 1997

Certified in the Ecological Land Classification (ELC) System for Southern Ontario, Ontario Ministry of Natural Resources, Turkey Point, Ontario, 2000

Qualified Southern and Northern Ontario Wetlands Evaluator, Ontario Ministry of Natural Resources, North Bay, Ontario, 2000

Fisheries Assessment Specialist and Fisheries Contracts Specialist, MTO/DFO/OMNR Fisheries Protocol Course, Downsview, Ontario, 2006

Ontario Freshwater Mussel Identification Workshop / Fisheries and Oceans Canada, Burlington, Ontario, 2008

Qualified Electrofishing Operator (Class 2), Ontario Ministry of Natural Resources, Guelph, Ontario, 2010

#### **MEMBERSHIPS**

Member, North American Benthological Society

#### PROJECT EXPERIENCE

#### **Environmental Assessments**

Northwest Area Planning and Servicing Review, Welland, Ontario* (Environmental Scientist)

Conducted a review of natural heritage features and identified development-related constraints in a newly designated urban area.

## Willoughby Lands Golf Course Facility, Niagara Region, Ontario* (Aquatic Ecologist)

Obtained Fisheries Act Authorization for development of a golf course facility. Supervised an underwater dive investigation to survey aquatic habitat along a series of alternative Niagara River water intake pipe alignments. The study lands also support habitat for a rare aquatic plant and an extensive program was proposed to ensure its protection. Environmental monitoring during construction was conducted.

### Aquatic Ecologist / Project Manager

### Municipal Water and Wastewater EAs, Various Sites, Ontario* (Aquatic Ecologist)

Evaluated natural heritage features in terms of ecological sensitivity and watermain and/or trunk sewer construction feasibility options (tunnel vs. open cut). Aquatic habitat conditions were assessed at all potential watercourse crossings and recommendations were provided regarding Fisheries Act requirements, construction mitigation measures and timing restrictions on in-water works. Also responsible for siting a chlorine booster station, surface water treatment plants and pumping stations, and mitigating impacts from emergency overflow of chlorinated water into adjacent watercourses. Water and wastewater experience includes:

- City of Barrie, Surface Water Treatment Plant Class EA & Impact Assessment
- Region of Niagara (Point Abino), Water Supply Class EA
- Region of Peel (Brampton), West Brampton Reservoir, Pumping Station & Watermain Class EA
- Region of York (Etobicoke), Steeles Avenue West Forcemain Class EA
- Region of York (Markham), Southeast Collector Trunk Sewer Class EA

### Natural Sciences & Heritage Resources Environmental Impact Studies for Land Development, Various Sites, Ontario (Project Manager)

Assessed potential environmental impacts from land development proposals. Conducted ecological community inventories in watercourses, wetlands and woodlots. Prepared Environmental Management Plans providing net effects analyses, mitigation solutions to minimize impacts to the natural environment, buffer zone recommendations, and re-vegetation and restoration activities. Participated in consultation to address agency concerns. EIS experience includes:

- Block 34 East Landowners Group Inc., Block 34 East Natural Environment Report, Vaughan, Ontario
- Block 41-28W Development Group Inc., Block 41 Natural Environment Report, Vaughan, Ontario
- Boca East Investments Limited, Block 64 Master Environmental Servicing Plan (Natural Environment Chapter), Vaughan, Ontario
- Georgian International Land Corp., Buffalo Springs Development Environment Report, Township of Oro-Medonte
- Keirland Developments Inc., Meadows of Bear Creek Subdivision Phases 2 & 3 EIS, Barrie, Ontario
- Kleinburg Heights Holdings Inc., Kleinburg Heights Natural Environment Report, Vaughan, Ontario

## Environmental Impact Studies for Land Development, Various Sites, Ontario* (Project Manager)

Assessed potential environmental impacts from land development proposals. Conducted ecological community inventories in watercourses, wetlands and woodlots. Prepared Environmental Management Plans providing net effects analyses, mitigation solutions to minimize impacts to the natural environment, buffer zone recommendations, re-vegetation and restoration activities, proposed trail routes and community stewardship programs. Participated in public open houses to address the concerns of local residents. Where required, environmental monitoring during construction was conducted. EIS experience includes:

- City of London, Dearness Home for Seniors Redevelopment EIS, London, Ontario
- Fieldgate Developments, Tresstown Subdivision EIS, Stouffville, Ontario
- Grey Gables School, Proposed Private School Site, Ecological Assessment, St. Catharines
- Lebovic-Fieldgate Developments, Functional Servicing Plan, Ecological Component, Stouffville, Ontario
- Norwest Land Corp., Kains Road East Development EIS, London, Ontario
- Quinte's Isle Campark, Scoped EIS, Prince Edward County, Ontario
- Sifton Properties Ltd., Equestrian Condominium Communities, Development Assessment Reports, Township of Middlesex Centre & Municipality of West Middlesex
- Sifton Properties Ltd., River Bend Community Phases 1&2 EIS, London, Ontario
- St. Joseph's Health Care Centre, Parkwood Hospital Scoped EIS, London, Ontario
- Westhill Redevelopment Company Limited, Aurora Golf Course Community ElS, Aurora, Ontario

### River Bend Community Phases 1 & 2, Environmental Monitoring Protocol & Baseline Study*, London, Ontario (Environmental Scientist)

Established baseline aquatic, terrestrial and soils conditions in the vicinity of a golf course community. Subsequently, the Environmental Monitoring Program - Year 1 and, later, Year 3, were submitted to document any potential impacts.

^{*} denotes projects completed with other firms

### Aquatic Ecologist / Project Manager

### Ecological Risk Assessment of Residual Heavy Oil in a Wetland*, Drumbo, Ontario (Environmental Scientist)

Analyzed stream and wetland data to determine potential aquatic food chain impacts of a historical heavy oil release. Analyzed invertebrate community structure and identified exposure pathways and community end-points. Considered site remediation options on the basis of these data.

## Proposed Acton Quarry Extension, Dufferin Aggregates, Acton, Ontario (Aquatic Ecologist / Project Manager)

The extension of the existing Acton Quarry is proposed to meet the need for additional close-to-market aggregate resources of high quality Amabel Dolostone. The area of focus encompasses approximately 615 ha, across two Conservation Authority watersheds within the Regional Municipality of Halton Hills. Kathleen has participated in extensive ecological field work, including aquatic species surveys and habitat assessments, inventories for potential Species at Risk habitat, and aquatic rehabilitation planning. She has co-authored technical reports produced in accordance with the PPS and ARA application requirements, as well as participated in interdisciplinary consultation with agencies and agency-appointed committees.

### Otonabee Landfill Site Biological Assessment Study*, Peterborough, Ontario (Wetlands Ecologist)

Prepared a 'Surface Water Quality Study' to address background water quality and aquatic habitat conditions and a 'Natural Environment Report' to identify baseline wetland and terrestrial environment conditions. The study was designed to identify potential impacts from existing landfill operations and to predict future impacts from proposed landfill site expansion.

# Forest City Industrial Lands, Wetland Evaluation & Environmental Assessment*, London, Ontario (Wetlands Ecologist)

Evaluated a locally significant wetland according to the Ontario Wetland Evaluation System and revised the existing boundaries of a provincially significant wetland in cooperation with MNR.

### West Nile Virus Information Package, Ballantrae, Ontario (Environmental Scientist)

Designed a pamphlet to educate residents and golfers regarding West Nile virus, the status of the virus in York Region, and the client's proactive mosquito monitoring program.

# Confidential Client, Environmental Baseline and Feasibility Study for a Decommissioned Gold Mine*, Northern, Ontario (Environmental Scientist)

Conducted aquatic and terrestrial habitat inventories to determine the environmental feasibility of re-opening a gold mine. Assessed streams, wetlands and woodlots. Conducted invertebrate and fish collections, avifauna and wildlife surveys, and vegetation community inventories.

### **Transportation Planning**

### MTO Aquatic and Terrestrial Biology Retainer Services, Southwestern Ontario (Project Manager / Fisheries Specialist)

Under the terms of two 2-year Retainer Agreements (2004-2006, 2007-2009) eleven individual assignments were completed, involving: characterizing existing ecological conditions, assessing site sensitivities and impacts related to proposed bridge/culvert repairs and highway improvements, recommending environmental mitigation measures, and conducting during/post-construction monitoring. Value added components included: fluvial geomorphological services, design and implementation of bio-engineered slope stabilization solutions, Permit to Take Water applications, and site rehabilitation and Planting Plans. Extensive agency liaison was required with staff from numerous Conservation Authority, MNR and DFO offices.

### Municipal Road Improvement Projects, Various Sites, Ontario (Environmental Scientist)

Collected aquatic and terrestrial habitat field data, conducted environmental impact assessments, and obtained required agency approvals related to municipal transportation projects, including:

- City of Hamilton, Bridge & Culvert Master Plan*
- City of London, Airport Road Widening*
- City of London, Bradley Avenue Extension
- City of London, Western Road Widening
- Town of Markham, Woodbine Avenue By-Pass*
- Township of Wilmot, Haysville Bridge Replacement*

### Natural Sciences Reports Related to MTO Highway Improvement Works, Various Sites, Ontario (Fisheries Specialist)

Produced numerous Natural Sciences reports related to highway improvement works. Where required, Fisheries Act Authorization was obtained and Fish Habitat Compensation Plans were developed. Potential impacts to aquatic habitat, terrestrial vegetation, wetlands and wildlife were described for the following studies:

^{*} denotes projects completed with other firms

### Aquatic Ecologist / Project Manager

- Highway 6 (Flamborough)*
- Highway 6 (Guelph)
- Highway 6 By-Pass (Caledonia)*
- Highway 7 (Marmora)*
- Highway 7 (Peterborough)*
- Highway 7A/28/115 (Peterborough)*
- Highway 8 (Dublin)*
- Highways 11/17 (North Bay)
- Highways 11/17 (Thunder Bay)
- Highways 11/101 (Matheson)
- Highway 17 (Stonecliffe)*
- Highway 17/Municipal Road 55 (Sudbury)
- Highway 17 Southwest By-Pass (Sudbury)
- Highways 17/531 (North Bay)*
- Highway 21 (Bluewater)
- Highway 21 (Grand Bend)
- Highway 23 (Palmerston)
- Highway 24 Interchange Improvements (Cambridge)
- Highway 26 (Meaford)
- Highway 26 (Owen Sound)
- Highway 63 (Bancroft)*
- Highway 63 (North Bay)*
- Highway 401/403 (Woodstock)
- Highway 401/County Road 41 (Napanee)*
- Highway 518 (Orrville)*

### West Nile Virus Surveillance Program, Various Sites, Central Ontario (Aquatic Ecologist)

Evaluating the potential for MTO owned/managed properties (e.g. stormwater ponds) to be mosquito breeding habitats, and recommended suitable strategies to curtail mosquito breeding success.

## Bridge Widening, CN Rail Mile 119.6*, Kingston, Ontario (Aquatic Ecologist)

Procured federal Fisheries Act Authorization related to a rail line widening project over a warmwater creek. Conducted a post-construction monitoring program to confirm the viability of the habitat compensation measures.

### Environmental Data Collection, CN Rail Corridor*, Toronto to Hornepayne, Ontario (Environmental Scientist)

Identified, collected and assessed secondary source natural heritage data for a study area that followed the CNR corridor from Toronto to Hornepayne. The data were then transferred to a GIS database, to be used during emergency planning.

#### **Water Resources Management**

## Minnow Lake Restoration*, Sudbury, Ontario (Aquatic Ecologist)

Coordinated a lake-wide monitoring program to evaluate the degree of water pollution resulting from stormwater discharge to an urban lake. Participated in frequent public consultation to liaise with residents of the Minnow Lake Restoration Group.

## Fort Creek Restoration*, Sault Ste. Marie, Ontario (Aquatic Ecologist)

In consultation with DFO, completed a restoration plan for an urban creek that outlets to Lake Huron and provides salmon spawning habitat. Habitat enhancement involved the removal of in-stream debris, channel stabilization, riparian plantings, substrate enhancement, and creation of refuge areas. Fisheries Act Authorization was obtained, and environmental monitoring during construction was conducted.

### Environmental Effects Monitoring Programs for Mining Sector Clients, Various Sites, Canada (Benthic Ecologist)

Contributed benthic ecology chapter to numerous EEM reports for Canadian metal mines. Analyzed and reported on invertebrate data to determine whether the respective mine effluent was resonsible for an aquatic community level effect. EEM experience includes:

- Hudson Bay Mining & Smelting Co. Ltd., Chisel North Mine, Snow Lake, Manitoba
- Hudson Bay Mining & Smelting Co. Ltd., Snow Lake Mill / Anderson Tailings, Snow Lake, Manitoba
- Hudson Bay Mining & Smelting Co. Ltd., Flin Flon Tailings Impoundment System and Trout Lake Mine, Flin Flon, Manitoba
- Hudson Bay Mining & Smelting Co. Ltd., Ruttan Mine, Leaf Rapids, Manitoba
- Hudson Bay Mining & Smelting Co. Ltd., Konuto Lake Mine, Denare Beach, Saskatchewan
- SMC (Canada) Ltd., McAlpine Mill, Cobalt, Ontario

### Environmental Effects Monitoring Programs for Pulp and Paper Sector Clients, Various Sites, Canada (Benthic Ecologist)

Contributed the benthic ecology chapter to numerous EEM reports for Canadian pulp and paper mills. Statistically analyzed and reported on invertebrate data, according to Environment Canada biological monitoring protocols, to determine whether the respective mill effluent was responsible for an aquatic community level effect. EEM project experience includes:

- Cascades Fine Papers Group Thunder Bay Inc., Lake Superior, Thunder Bay, Ontario

^{*} denotes projects completed with other firms

### Aquatic Ecologist / Project Manager

- Georgia-Pacific Canada Inc., Lake Gibson, Thorold, Ontario
- Kimberly-Clark Incorporated, Lake Superior, Terrace Bay, Ontario
- Marathon Pulp Inc., Lake Superior, Marathon, Ontario
- Nexfor Fraser Papers, Saint John River, Edmunston, New Brunswick
- Norampac Inc., Lake Superior, Red Rock, Ontario
- Spruce Falls Inc., Kapuskasing River, Kapuskasing, Ontario
- Stora Enso Port Hawkesbury Limited, Strait of Canso, Port Hawkesbury, Nova Scotia
- Tembec Industries Inc., Mattagami River, Smooth Rock Falls, Ontario

## Watershed Based Biomonitoring Program for Urban Development, Oakville, Ontario (Benthic Ecologist)

Sampled and analyzed the Fourteen Mile Creek invertebrate community to establish baseline conditions, prior to the development of a housing subdivision. Six subsequent years of during-construction monitoring were conducted.

## North and South Meade Creeks Subwatershed Plan*, Peterborough, Ontario (Aquatic Ecologist)

Conducted fish collections and population analyses, invertebrate sampling and identification, and collected and analyzed water chemistry samples. The information was used to predict the ecological sensitivity of Meade Creek and to provide recommendations regarding the extent and type of future development permitted in the watershed.

## Pike River Aquatic Impact Assessment*, Field, Ontario (Benthic Ecologist)

Sampled fish, invertebrates and benthic sediments within the vicinity of a chlorinated discharge zone to determine the extent of chlorine related effects to the aquatic environment.

## Biological Impact Assessment of a Closed Landfill on the Maitland River, Wingham, Ontario (Benthic Ecologist)

Analyzed Maitland River invertebrate community data within the vicinity of a closed landfill to determine the potential impact of landfill leachate.

## Receiver Biomonitoring Program, Elmira, Ontario (Benthic Ecologist)

Analyzed invertebrate community data to determine the viability of an industrial contaminated groundwater collection and treatment system which discharges treated water to Canagagique Creek.

### Shekak River Post Impoundment Environmental Monitoring for the Shekak-Nagagami Hydroelectric Development, Hearst, Ontario (Aquatic Ecologist)

Addressed agency concerns regarding environmental monitoring in the headpond area of a river impoundment. Evaluated shoreline erosion and the viability of fish habitat compensation measures, including a walleye spawning shoal and aquatic invertebrate enhancement works.

## Environmental Effects Monitoring Program for the Antamina Mine & Port Facility, Peru (Benthic Ecologist)

Analyzed biological (metal concentrations in fish and shellfish tissues, fish health, benthic invertebrate community structure) and physical (water and sediment chemistry) data collected in the vicinity of both an inland mine (freshwater environment) and a coastal mining port facility (marine environment) to determine if the local ecosystems were being adversely affected by mining/shipping operations.

## Benthic Invertebrate Monitoring Program*, Caledonia, Ontario (Benthic Ecologist)

Assessed the Fox Creek invertebrate community to determine if the stream habitat was being adversely affected by adjacent mining effluent discharge.

^{*} denotes projects completed with other firms

Aquatic Ecologist / Project Manager

### **PUBLICATIONS**

Todd, K.R.O., M.G. Fox and D.C. Lasenby. Presented at the 52nd Annual Meeting of the North American Benthological Society. Seasonal influence of riparian vegetation on stream macroinvertebrate community structure. North American Benthological Society, Vancouver, B.C. (June 6-10), 2004.

Todd, K.R.O. The Influence of Deciduous and Coniferous Riparian Vegetation on Aquatic Macroinvertebrate Community Structure in Low Order Streams of South Central Ontario. M.Sc. Thesis, Trent University, 2003.

### Fisheries Biologist / Project Manager



Mark has 14 years of experience designing, coordinating, and implementing small and large scale aquatic habitat and impact assessments, encompassing numerous habitat types including lakes, ponds, large rivers, warmwater and coldwater streams. Mark has also developed and implemented many monitoring, mitigation, compensation and inventory processes. Past employment with Fisheries and Oceans Canada (DFO), and both the Grand River and St. Clair Region Conservation Authorities contributes to Mark's extensive working experience with regulatory and approvals processes related to the Fisheries Act, the Conservation Authorities Act and the Drainage Act. Mark's familiarity with Fisheries Act mitigation and compensation includes an understanding of the Habitat Alteration Assessment Tool (HAAT). He has extensive experience involving permitting and issues resolution related to the federal Species at Risk Act and the provincial Endangered Species Act. His experience also includes several transportation-related Environmental Assessments.

#### **EDUCATION**

Honours B.Sc. (Agriculture), University of Guelph / Natural Resources Management, Guelph, Ontario, 2000

Royal Ontario Museum / Freshwater Fish Identification Course, Toronto, Ontario, 2011

Class 1 Electrofishing Certificate / Ministry of Natural Resources, Waterloo, Ontario, 2010

Ontario Freshwater Mussel Identification Workshop / Fisheries and Oceans Canada - Canada Centre for Inland Waters, Burlington, Ontario, 2007

Fisheries Assessment Specialist and Fisheries Contracts Specialist, MTO/DFO/OMNR Fisheries Protocol Course, Downsview, Ontario, 2006

### PROJECT EXPERIENCE

#### **Environmental Assessments**

Locks 24 and 25 – VLH Turbine Installation, Canadian Projects Limited, Lakefield, Ontario (Aquatic Biologist) Conducted aquatic assessments including walleye and bass spawning and habitat surveys in support of an Environmental Assessment (EA) for the installation of Very Low Head (VLH) turbines at Dams 24 and 25 on the Otonabee River. As part of the EA, will provide an analysis of impacts to walleye and bass spawning habitat and habitat use by small-bodied fish. The impact assessment will also be used as during the assessment of the project using the Fisheries & Oceans Canada (DFO) Risk Management Framework.

## Pier 27 Dockwall and Dredging, Hamilton Port Authority, Hamilton, Ontario (Aquatic Biologist)

Coordinated and conducted aquatic assessments in support of the installation of a new dockwall and dredging to facilitate shipping traffic. Coordinated with DFO regarding need for Fisheries Act approval.

#### Pier 22 Environmental Assessment, Hamilton Port Authority, Hamilton, Ontario (Aquatic Biologist)

Coordinated and conducted aquatic assessments in support of site improvements. Negotiated compensation measures and drafted letter of intent in pursuit of Fisheries Act Authorization.

### Bruce to Milton Transmission Line, Various, Ontario (Fisheries Biologist)

Planned, coordinated and assisted with execution of large-scale fisheries field program to assess potential impacts of proposed hydroelectric corridor reinforcement project and provided relevant input to the provincial environmental assessment process as well as the Fisheries Act and Conservation Authorities Act permitting processes. Managed data entry, analysis and completed reporting of aquatic resources sections. Coordination of multi-disciplinary team and regulatory agencies for acquisition of appropriate permits and approvals.

### Yellow Falls Hydroelectric Project, Smooth Rock Falls, Ontario (Aquatic Biologist)

Planned, coordinated and assisted with execution of fisheries field program to assess potential impacts of proposed hydroelectric dam project. Facilitated acquisition of permits and approvals from relevant agencies. Assisted with fish, benthos, habitat, water and sediment sampling. Authored significant portions of the technical appendix related to aquatic study results.

### Fisheries Biologist / Project Manager

### **Environmental Impact Assessments**

## Georgia Pacific Thorold Cycle 4 EEM, Thorold, Ontario (Aquatic Ecologist)

Assisted in field sampling of fish, benthos, water and sediment for federally regulated pulp and paper environmental effects monitoring.

### Spruce Falls Cycle 4 EEM, Kapuskasing, Ontario (Aquatic Ecologist)

Assisted in field sampling of fish, benthos, water and sediment for federally regulated pulp and paper environmental effects monitoring.

## Smooth Rock Falls Cycle 4 EEM, Smooth Rock Falls, Ontario (Aquatic Ecologist)

Assisted in field sampling of fish, benthos, water and sediment for federally regulated pulp and paper environmental effects monitoring.

#### **Highway and Transportation**

### King Street and Fountain Street Improvements Class Environmental Assessment Study, Cambridge, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess aquatic habitat at watercourse crossings within the project study area. Data collected during field investigations was used to assess potential impacts of preferred option. Drafted text for relevant sections of Class EA document.

### Franklin Boulevard Widening Class Environmental Assessment Study, Cambridge, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess aquatic habitat at watercourse crossings within the project study area. Data collected during field investigations was used to assess potential impacts of preferred option. Drafted text for relevant sections of Class EA document.

## Highway 69 - Patrol Yards between Parry Sound and Sudbury, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess aquatic habitat at watercourses within the project study area. Data collected during field investigations was used to assess potential impacts of proposed maintenance patrol yards located adjacent to Highway 69. Drafted text for inclusion in Fisheries and Aquatic Ecosystems Report. All work was conducted in accordance with the MTO/DFO/MNR Protocol (2006).

### Highway 11 - High Falls Road Access Improvements Class Environmental Assessment, Bracebridge, Ontario (Fisheries Biologist)

Planned and conducted field investigations to assess aquatic habitat at watercourse crossings within the project study area. All work was conducted in accordance with the MTO/DFO/MNR Protocol (2006).

### Highway 11 - Intersection Improvements, Powassan, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess aquatic habitat at watercourse crossings within the project study area. Data collected during field investigations was used to assess potential impacts of preferred option, including potential impacts to Brook Trout. Drafted text for inclusion in Fisheries and Aquatic Ecosystems Report. All work was conducted in accordance with the MTO/DFO/MNR Protocol (2006).

### Highway 3 - Rehabilitation between Jarvis and Renton, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess aquatic habitat at watercourse crossings within the project study area. Data collected during field investigations was used to assess potential impacts of preferred option, including potential impacts to Brook Trout. Drafted Fisheries and Aquatic Ecosystems Report. All work was conducted in accordance with the MTO/DFO/MNR Protocol (2006), and included preparation and submission of "no HADD forms" to satisfy Fisheries Act requirements.

### Highway 69 - Key River Bridge Replacement, Britt, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess aquatic habitat in Key River at proposed location of bridge replacement. Data collected during field investigations was used to assess potential impacts of bridge replacement activities. Drafted Fisheries and Aquatic Ecosystems Report. All work was conducted in accordance with the MTO/DFO/MNR Protocol (2006), and included preparation and submission of "no HADD forms" to satisfy Fisheries Act requirements.

## Replacement of Coutts Line Bridge over Baptiste Creek, Tilbury, Ontario (Fisheries Biologist)

Facilitated acquisition of provincial Endangered Species Act (ESA) approval (letter of advice) through provision of advice regarding construction techniques. Planned, coordinated and conducted field investigations to assess freshwater mussel community and habitat at bridge site.

^{*} denotes projects completed with other firms

### Fisheries Biologist / Project Manager

### Replacement of Dawn Mills Bridge over Sydenham River Creek, Dresden, Ontario (Fisheries Biologist)

Dawn Mills Bridge is located over a reach of the Sydenham River known to contain one of the largest number of taxa of federally regulated Species at Risk fish and mussels in Canada. Facilitated acquisition of federal approvals (Fisheries Act and Species at Risk Act, letter of advice) through provision of advice regarding construction techniques. Planned, coordinated and conducted field investigations to assess freshwater mussel habitat at bridge site.

### Chinguacousy Road Widening, Brampton, Ontario (Fisheries Biologist)

Conducted fish community assessment to determine presence of Redside Dace (a provincially Endangered species). Drafted applications for Fisheries Act Authorization, Conservation Authorities Act approval, and Endangered Species Act approval. Provided input to engineering design for compensation measures related to Redside Dace habitat.

# Detroit Windsor Truck Ferry Improvements (Design) (GWP 3071-06-00), Windsor, Ontario (Fisheries Biologist)

Provided aquatic community and habitat assessment services as well

as input regarding project design, construction staging and silt and sediment control planning. Acquired approvals under Fisheries Act and Conservation Authorities Act related to fish habitat. Negotiated compensation measures with Conservation Authority prior to project design change, resulting in no HADD.

## Highway 24 - Intersection Improvements, Cambridge, Ontario (Fisheries Biologist)

Provided fish rescue services. Performed environmental inspection duties related to implementation of the Fisheries Act compensation plan and resolution of onsite issues related to construction.

# Detroit Windsor Truck Ferry Improvements (Contract Administration) (WP 3071-06-00), Windsor, Ontario (Fisheries Biologist)

Construction monitoring services related to Fisheries Act implications (fish removals, species at risk identification training for contract staff, staging and implementation design review), provision of advice regarding alternative staging/construction operations to prevent impacts to aquatic habitat/organisms.

## Fanshawe Park Road Widening, London, Ontario (Fisheries Biologist)

Facilitated acquisition of approvals from DFO for the realignment of Heard Drain/Snake creek during the expansion of Fanshawe Park Road. Performed construction inspection services, resolved onsite implementation issues related to the Fisheries Act.

#### **Natural Resource Services**

### Municipal Drain Classification Program*, Various, Ontario (Drain Assessment Technician)

Planned and implemented large scale sampling protocol designed by DFO to assess the sensitivity of various municipal drains to disturbance. Sampling program encompassed all drains within the Grand River watershed and consisted of habitat, thermal and fish community characterization based on extensive field sampling. Analyzed substantial quantities of field data, summarized results and produced interim and final reports.

### Fish Habitat Study*, Strathroy, Ontario (Biological Technician)

Planned and implemented field program to sample fish community in reservoirs managed by the St. Clair Region Conservation Authority. Responsible for writing final report concerning existing fish habitat status and providing recommendations based on field data. Participated in water quality and benthic community field sampling programs.

## Various Environmental Assessments*, Sarnia, Ontario (Fish Habitat Biologist)

Assessed project proposals for impacts to fish habitat as defined in the Fisheries Act. Issued Letters of Advice and Authorization under the Fisheries Act. Carried out screening level environmental assessments of proposed projects under the Canadian Environmental Assessment Act. Participated in outreach programs and inter-agency work groups regarding Species at Risk recovery. Acquired familiarity with the Habitat Alteration Assessment Tool (HAAT).

#### Renewable Energy

## St. Columban Wind Project, Huron County, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess potential aquatic impacts resulting from proposed wind project consisting of fifteen turbines. Drafted Water Assessment and Water Body Report as mandated under Ontario Reg. 359/09.

^{*} denotes projects completed with other firms

### Fisheries Biologist / Project Manager

## Plateau Wind Project, Grey County, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to update previous field work to assess potential aquatic impacts resulting from proposed wind project consisting of eighteen turbines. Drafted relevant sections of the Environmental Screening Report (ESR) as mandated under Ontario Reg. 116/01. Provided advice concerning provincial species at risk concerns.

## Grand Renewable Energy Park, Haldimand County, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess potential aquatic impacts resulting from proposed wind and solar project consisting of sixty-seven turbines and 425,000 solar panels. Drafted Water Assessment and Water Body Report as mandated under Ontario Reg. 359/09.

### Springwood Wind Project, Belwood, Ontario (Fisheries Biologist)

Conducted field investigations to assess potential aquatic impacts resulting from proposed wind project consisting of and assisted with draft Water Assessment and Water Body Report under Ontario Reg. 359/09.

## Whittington Wind Project, Dufferin County, Ontario (Fisheries Biologist)

Planned and coordinated field investigations to assess potential aquatic impacts resulting from proposed wind project consisting of three turbines. Drafted Water Assessment and Water Body Report as mandated under Ontario Reg. 359/09.

### Fairview Wind Project, Stayner, Ontario (Fisheries Biologist)

Planned and coordinated field investigations to assess potential aquatic impacts resulting from proposed wind project consisting of eight turbines. Drafted Water Assessment and Water Body Report as mandated under Ontario Reg. 359/09.

## White Pines Wind Project, Prince Edward County, Ontario (Fisheries Biologist)

Planned, coordinated and conducted field investigations to assess potential aquatic impacts resulting from proposed wind project consisting of twenty-nine turbines. Drafted Water Assessment and Water Body Report as mandated under Ontario Reg. 359/09 (in progress).

#### **Urban Land**

### Berczy Dam Removal, Markham, Ontario (Fisheries Biologist)

Provided fish rescue services, including resolution of issues related to Species at Risk.

### Medway Sanitary Trunk Sewer Extension, London, Ontario (Fisheries Biologist)

Drafted Fisheries Act application and Endangered Species Act application for pipeline crossing of Medway Creek.

Coordinated and completed aquatic habitat assessment and relocation of freshwater mussels. Negotiated compensation measures prior to project design change, resulting in no HADD.

## Fox Hollow Subdivision, London, Ontario (Fisheries Biologist)

Facilitated acquisition of approvals from DFO for the realignment of the Heard Drain/Snake Creek and the installation of a stormwater management pond in relation to construction of the Fox Hollow Subdivision. Performed construction inspection services, resolved onsite implementation issues related to the Fisheries Act.

^{*} denotes projects completed with other firms



Katie Easterling is an Aquatic Ecologist with Stantec's Environmental Services group in Kitchener. She has approximately 6 years of field experience in both the aquatic and terrestrial disciplines. Previous fieldwork includes: fish habitat assessments, fish community sampling, fish salvages, REA water body assessments, trout spawning surveys, walleye spawning surveys and baseline aquatic surveys for various pipeline, rail line, transportation, renewable energy and municipal projects. Furthermore, she has experience conducting preliminary or baseline terrestrial habitat assessments, Species at Risk surveys, and breeding bird surveys. Reporting skills include: aquatic existing conditions reports, REA water assessment and water body reports, terrestrial existing conditions reports, Environmental Screening/Review Reports, Natural Heritage Evaluations (NHE) and Environmental Impact Statements (EIS). Additionally, Katie has consulted with First Nations, municipal, provincial and federal government agencies as part of fieldwork or reporting activities.

Katie is proficient in a variety of fish sampling techniques, including: Fall Walleye Index Netting (FWIN), Near Shore Community Index Netting (NSCIN), fyke netting, seine netting, gill netting and boat and backpack electrofishing. She has experience PIT tagging, anesthetizing fish, weighing, measuring, sexing, determining gonadal condition, removing aging structures (otoliths and scales) and aging fish. She also holds a certificate in radio telemetry and is certified in Ecological Land Classification (ELC). Her educational background focused on terrestrial, wildlife and aquatic biology, and includes a degree in Zoology and a Fish and Wildlife diploma. Prior to joining Stantec, Katie worked as an Ecological Research Assistant with Parks Canada, a Conservation Interpreter with the Long Point Region Conservation Authority and has previous consulting experience working as a Research Assistant for The Impact Group and a Biologist for URS. She also spent a summer work term at the OPG Nanticoke Plant working as an Assistant Mechanical Maintainer.

### **EDUCATION**

Diploma – Fish and Wildlife Technician, Fleming College, Lindsay, Ontario, 2007

Hon.B.Sc– Major Zoology, Minor Biology, University of Toronto, Toronto, Ontario, 2003

#### PROFESSIONAL ASSOCIATIONS

Canadian Environmental Certifications and Approvals Board – Environmental Professional-in-Training (EPt) 2009-present

#### MEMBERSHIPS/ASSOCIATIONS

American Fisheries Society, Ontario Chapter Member, 2007 – present

American Fisheries Society, Ontario Chapter Executive Committee – Treasurer, 2011 - present

#### SPECIALIZED TRAINING

MTO/DFO/OMNR Fisheries Protocol Training Session for Fisheries Specialists, 2011

ROM Fish Identification Course, 2011

MNR Renewable Energy Natural Heritage Assessment Training, 2011

MNR Bat Monitoring Workshop for Wind Power Projects, 2010

Certified Traffic Control Technician, 2010

Class Two (II) Electrofishing Crew Leader Certification Course, 2006 and 2009

Contractor Orientation Course, CN Rail, 2009

Bat Acoustic Analysis Course, 2008



Ecological Land Classification, 2006

Wetland Classification, 2006

#### PROJECT EXPERIENCE

#### **Ministry of Transportation (MTO)**

#### Aquatic

Detail Design, Highway 35, WP 102-99-01 Trent Canal Bridge Rehabilitation, Site 32-065 (Rosedale), MTO Eastern Region (2011 & 2012) (Role: Aquatic Ecologist)

Prepared the Aquatic Existing Conditions Report as part of the Detailed Design process for the Highway 35 site at the Trent Severn Waterway.

Detail Design, Highway 35, WP 4166-09-01 Corben Creek Structural Culvert Replacement, Site 32-165C, WP 4165-09-01 Martin Creek Structural Culvert Rehabilitation, Site 32-063BC and WP 4075-09-01 South McLaren Creek Structural Culvert Rehabilitation, Site 32-072BC, MTO Eastern Region (2011 & 2012) (Role: Aquatic Ecologist)

Conducted fish habitat and fish community assessments at 3 locations in the area surrounding Hwy 35 outside Lindsay, Ontario. This involved using a backpack electrofisher or minnow traps (where applicable) to determine fish species and habitat present in order to assess the community structure and supplement watercourse sensitivity information provided by the MNR. Reporting tasks included the Aquatic Existing Conditions Report

Detail Design, Highway 7, WP 4007-08-01/02 Mariposa Creek Structural Culvert Rehabilitation, Site 32-124BC and Mariposa Brook Structural Culvert Replacement, Site 32-161C, MTO Eastern Region (2011 & 2012) (Role: Aquatic Ecologist)

Conducted fish habitat and fish community assessments at 2 locations in the area surrounding Hwy 7 outside Lindsay Ontario. This involved using a backpack electrofisher or minnow traps (where applicable) to determine fish species and habitat present in order to assess the community structure and supplement watercourse sensitivity information provided by the MNR. Reporting tasks included the Aquatic Existing Conditions Report

Radio Telemetry Certificate, 2006

Pleasure Craft Operators Course, 2006

Route Planning – Highway 144 Bypass around Chelmsford (GWP 5023-03-00), MTO Northeast Region (2011) (Role: Aquatic Ecologist)

Conducted fish habitat and fish community assessments at 63 locations in the area surrounding Hwy 144 near Chelmsford, Ontario. This involved using a backpack electrofisher or minnow traps (where applicable) to determine fish species and habitat present in order to assess the community structure and supplement watercourse sensitivity information provided by the MNR. Reporting tasks included the Aquatic Existing Conditions Report

Route Planning – Hwy 17 Sudbury to Markstay (GWP 5031-09-00), MTO Northeast Region (2011) (Role: Aquatic Ecologist)

Prepared the Aquatic Existing Conditions Report as part of the preliminary route planning study for Highway 17 between Sudbury and Markstay.

Highway 3, 6 and 24 Fish Community and Fish Habitat Assessment for Detailed Design (GWP 3115-09-00, GWP 3048-03-00 and GWP 362-98-00), MTO Southwest Region (2011) (Role: Aquatic Ecologist)

Conducted a detailed spring, summer and fall fish community and fish habitat assessment of 20 watercourse crossings for the rehabilitation/resurfacing of Highways 3, 6 and 24 surrounding the communities of Simcoe, Delhi and Port Dover. Reporting tasks included the Aquatic Existing Conditions Report and Impact Assessment Report for each highway.

### Hwy 6 Fish Salvage, MTO Southwest Region (2009) (Role: Project Biologist)

Conducted a fish salvage as part of an MTO highway widening project located along Hwy 6 near Vamey, ON. Fish collected were identified, measured and released downstream of the inwater work area.



#### **Terrestrial**

# Route Planning – Hwy 144 Bypass around Chelmsford (GWP 5023-03-00), MTO Northeast Region (2011) (Role: Project Biologist)

Classified the vegetation communities within the Study Area based on FEC and ELC guidelines in addition to identifying potential SAR habitat for a proposed bypass route around Chelmsford.

## Highway 401 Interchanges GWP 3070-09-00, MTO Southwest Region (2011) (Role: Project Biologist)

Prepared the terrestrial existing conditions report as part of the detail design stage for three Highway 401 interchanges between Woodstock and London.

### Windsor-Essex Parkway Owner's Engineer, MTO Southwest Region (2010-2011) (Role: Project Biologist).*

Project Biologist for the acquisition of a Design, Build, Finance and Maintain consortia for the Windsor-Essex Parkway (WEP) which extends Highway 401 through Windsor below grade and includes an at-grade Highway 3. Conducted and reported on the Ecological Land Classification (ELC) and habitat availability for plant Species at Risk within the Windsor-Essex Parkway footprint as a requirement of ESA 17(2) B, ESA 17(2) C and ESA 17(2) D permits. Assisted with the preparation of Management, Monitoring and Habitat Restoration Plans for multiple Species at Risk, as required in the ESA 17 D permit. Co-ordinated and participated in one of the largest transplantation efforts for plant Species at Risk, which involved locating and identifying various plant Species at Risk within the Windsor-Essex Parkway footprint and transplanting to a region outside the area of impact.

## Hwy 11 Madill-Church Road Interchange, MTO Northeast Region (2011) (Role: Project Biologist).*

Compiled and reported on the effectiveness of various wildlife detection/avoidance systems as part of a value added study for MTO.

### Renewable Energy Aquatic

### Niagara Region Wind Corporation (2012) (Role: Aquatic Ecologist)

Conducted the REA water assessment at multiple locations across the project area.

#### Hydroelectric Facilities - Lock 24 and 25 Dams on the Trent-Severn Waterway, Coastal HydroPower (2012) (Role: Aquatic Ecologist)

Conducted 4 Walleye spawning surveys at Lock 24 and 25 to determine if suitable habitat is present at the locks and the number of staging/spawning Walleye within the project footprint.

### Cedar Point REA Water Body Assessment, Suncor Energy Products Inc. (2011) (Role: Aquatic Ecologist)

Conducted the REA water body assessment for a renewable energy project, which involved fish habitat assessments at 99 locations across the Study Area.

### Adelaide REA Water Body Assessment, Suncor Energy Products Inc. (2011) (Role: Aquatic Ecologist)

Conducted the REA water assessment and prepared the water body report for a renewable energy project, which involved fish habitat assessments at 41 locations across the Study Area.

### Napier Wind Project REA Water Body Assessment, wpd Canada Corporation (2011) (Role: Aquatic Ecologist)

Conducted the REA water assessment and prepared the water body report for a renewable energy project, which involved fish habitat assessments at 3 locations across the Study Area.

### Amherst Island REA Water Body Assessment, Windlectric Inc. (2011) (Role: Aquatic Ecologist)

Conducted the REA water assessment and prepared the water body report for a renewable energy project on Amherst Island, which involved fish community and a preliminary fish habitat assessment at 39 locations across the Island.



### Fish Habitat Assessment, SkyPower (2009) (Role: Project Biologist)

As part of a wind farm Environmental Assessment under O.Reg. 116, a fish habitat assessment was conducted to determine the baseline conditions and watercourse sensitivity according to the DFO matrix at each of the proposed watercourse crossings.

#### **Terrestrial**

# Pre-Construction Bat Monitoring Surveys, Clients included Suncor Energy Products Inc., Acciona, RES Canada and SkyPower (2007-2009) (Role: Project Biologist)

Under O.Reg. 116 AnaBat detectors were installed on MET towers and design/constructed/installed multiple ground AnaBat detector units at various wind farms in Southern Ontario. Monitored pre-construction bat activity and identified species using spectrogram analysis to report on the activity level surrounding the proposed wind farms.

# Post-Construction Bird and Bat Mortality Monitoring, Suncor (2008) and Enbridge (2009 and 2010) (Role: Project Biologist)

Conducted post-construction bird and bat mortality monitoring, scavenger impact trials and searcher efficiency trials at the Ripley and Enbridge Ontario Wind Farms near Kincardine, Ontario as a requirement under O.Reg. 116.

## Winter Bird Surveys, Suncor Energy Products Inc. (2009) (Role: Project Biologist)

As a requirement of O.Reg.116, avian monitoring surveys were conducted to characterize the bird community of two sites in Southern Ontario during the over-wintering period.

#### Oil and Gas Pipeline

#### Aquatic

## Detailed Fish Habitat Assessment and Reporting, Nova Chemicals (2011) (Role: Aquatic Ecologist)

Fish habitat was assessed at 9 proposed crossings for a pipeline route and existing conditions were summarized as part of an EA.

### Detailed Fish Habitat Assessment and Reporting, TransCanada Pipeline Ltd (2009 & 2011) (Role: Project Biologist)

As part of a pipeline expansion project, a detailed fish habitat survey was conducted following MTO protocols at 10 watercourse crossings. Methodology included detailed habitat mapping 50 m upstream and 100 m downstream. Fish habitat conditions were summarized and watercourse sensitivity determined according to the DFO matrix in the Fish and Fish Habitat Assessment Report as part of a CEAA Environmental Assessment.

## Baseline Aquatic Survey, Enbridge Gas Distribution Inc. (2009) (Role: Project Biologist)

As part of the Pipeline to Serve York Energy Centre LP Environmental Assessment, aquatic baseline conditions at all watercourse crossings were summarized as part of the preliminary assessment of reasonable routing opportunities for the proposed pipeline.

## Fish Salvage and Construction Monitoring, Enbridge Pipelines (2008 and 2009) (Role: Project Biologist)

In-water construction work was monitored and fish salvages were conducted at various watercourses across Ontario as part of a pipeline maintenance or repair project. The fish collected were identified, measured and released downstream of the inwater work area.

## Baseline Aquatic Habitat Survey, TransCanada Pipeline Ltd (2009) (Role: Project Biologist)

As part of an Environmental Assessment for the proposed Thorold Sales Meter Station to connect the TransCanada Mainline to the Enbridge Gas Distribution pipeline, baseline aquatic conditions were assessed as part of the report.

#### **Terrestrial**

## Ecological Land Classification, TransCanada Pipelines Ltd (2011) (Role: Biologist)

Ecological Land Classification (ELC) surveys were conducted along the proposed pipeline expansion route, which documented the vegetation communities present.



## Species at Risk Survey, TransCanada Pipelines Ltd (2009) (Role: Project Biologist)

Species at Risk surveys were conducted at four work areas along a pipeline right-of-way between Belleville and Brockville, Ontario. Surveys included looking for and assessing possible habitat conditions for Butternut, Henslow's Sparrow, Grey Fox, Blanding's Turtle, Eastern Milksnake and Eastern Ratsnake.

## Herptile Rescue, Enbridge Pipeline Inc. (2009) (Role: Project Biologist)

As part of a large pipeline maintenance project situated within a beaver pond located near the Ganaoque River, a herptile rescue was performed to remove any snakes, turtles and frogs from the trench-box once in-filling was started. All species found within or immediately adjacent to the trench-box were removed and relocated within the beaver pond but outside of the work zone.

## Terrestrial Assessment, Enbridge Pipelines Inc. (2008) (Role: Project Biologist)

Preliminary aquatic and terrestrial assessments of various dig sites along a pipeline in Southern Ontario were conducted to establish the existing baseline conditions. Surveys involved recording bird species observed, vegetation cover species found at the dig site and assessing any aquatic habitat found on-site.

## Nesting Bird Surveys, TransCanada Summer (2007) (Role: Project Biologist)

Nesting bird surveys were performed at various remote locations throughout Northern Ontario, which included finding and identifying any active and inactive nests within and surrounding the proposed work area along a pipeline right-ofway.

### Railroad Aquatic

## Fish Salvage and Construction Monitoring, Canadian National Railway (2010) (Role: Project Biologist)

As part of a railway expansion project, in-water construction work was monitored and multiple fish salvages were performed at various bridge and culvert construction locations.

### Detailed Fish Community and Habitat Surveys and Reporting, Canadian National Railway (2009) (Role: Project Biologist)

As part of a railway expansion project, detailed fish community and habitat surveys were conducted following MTO protocols at over 20 watercourse crossings. Methodology included detailed habitat mapping 50 m upstream and 100 m downstream, electrofishing to determine fish community present in the stream and water chemistry sampling. Fish community and habitat conditions were summarized and watercourse sensitivity determined according to the DFO matrix in the Fish and Fish Habitat Assessment Report as part of a CEAA Environmental Screening.

## Fish Habitat Surveys and Reporting, Canadian Pacific (CP) Railway (2009) (Role: Project Biologist)

As part of a CEAA Environmental Screening Report, a fish habitat and aquatic baseline survey was conducted along a proposed rail siding within a wetland. The assessment consisted of a visual assessment of water depth, aquatic vegetation, available cover, substrate and the presence of barriers to fish movement within the area of the proposed siding.

#### Terrestrial

## Nesting Bird Surveys, Canadian National Railway (2010) (Role: Project Biologist)

Nesting bird surveys were performed along various stretches of CN's RoW to find and identify any active or inactive nests within the proposed work area.

#### Municipal

#### Aquatic

## Arkell Well Field Adaptive Management Plan (AMP), City of Guleph (2011) (Role: Aquatic Ecologist)

As part of a yearly monitoring program, fish habitat was assessed using the OSAP protocol at four monitoring stations outside the city of Guelph.



### Trout Spawning Surveys (2010) (Role: Project Biologist)

Conducted multiple trout spawning surveys along two coldwater creeks in the eastern region of the GTA for two municipal road expansion projects. Fieldwork involved surveying the creeks 50 m upstream and 100 m downstream to determine if Rainbow Trout were staging or spawning in the creek and within the vicinity of the bridge.

## Aquatic Habitat Surveys, Town of Ajax (2009-2010) (Role: Project Biologist)

The Town of Ajax is committed to improving water quality along its Lake Ontario waterfront and in Duffins Creek and Duffins Marsh. As part of this, preliminary fieldwork was conducted to assess the existing conditions at each of the stormwater outfalls, including terrestrial and aquatic habitat. The assessment consisted of a visual assessment of water depth, aquatic and terrestrial vegetation, available cover, substrate and the presence of barriers to fish movement upstream or downstream.

## Baseline Aquatic Survey, Regional Municipality of York (2009) (Role: Project Biologist)

As part of an Environmental Assessment for Cole Engineering Group Limited (Cole Engineering), a baseline terrestrial and aquatic survey was conducted for the Fairy Lake Garden Pond Maintenance Project in the Town of Newmarket. The assessment consisted of a visual assessment of water depth, aquatic vegetation, available cover, substrate and the presence of barriers to fish movement upstream or downstream of Garden Pond; which was used to assess Garden Pond's function as fish habitat both within the pond and the pond's function within the Fairy Lake/East Holland River watershed.

## Fish Sampling, Durham-York Region (2008) (Role: Project Biologist)

Various stations along Tooley Creek in Durham Region were electrofished to obtain composite samples of whole fish that were identified, weighed, measured and bagged for a metals analysis as part of a human health risk report for the proposed Durham-York Residual Waste Study.

#### **Terrestrial**

## Habitat Assessment, Durham-York Region July (2007) (Role: Project Biologist)

Multiple sites around the regions were assessed for wildlife usage, fisheries and ideal browse, nesting and cover habitat Recommendations for a preferred site were given based on a combination of these factors and how the potential loss of habitat through development would affect the local wildlife.

### Other Experience

#### Aquatic

# Phase 3 Environmental Effects Monitoring (EEM): Periodic Monitoring, Kirkland Lake, ON (2011) (Role: Aquatic Ecologist)

This EEM program began in 2010 (continuing through 2012) and involved the collection of water, sediment, fish and benthos to assess possible environmental effects caused by the mine and followed federal Metal Mining Effluent Regulation (MMER) guidelines. Fyke nets and a boat electrofisher were used to capture target small-bodied species. The fish were dissected, sexed, livers and gonads were weighed and eggs were collected.

### Lake Gibson Angler Survey, Ontario Power Generation, Thorold, Ontario (2011) (Role: Aquatic Ecologist)

Lake Gibson is a hydro-electric reservoir owned and operated by Ontario Power Generation (OPG). As detailed in the OPG Risk Management Plan, OPG is required to monitor the persistence of sediment contamination and its expression in the environment within Lake Gibson. The program was designed to identify, quantify and compare the levels of contamination over time and the impact on sediments, water, benthic invertebrates, and fish in the system. Katie was involved as a field biologist interviewing anglers at Lake Gibson to assess the effectiveness of OPG's communication with the public regarding the contamination of Lake Gibson sediment and fishes.

## Piles Development (Keswick) Corporation - DFO authorization PE 07-0957 (2011) (Role: Aquatic Ecologist)

An evaluation of fish habitat, fish passage and the fish community was conducted within the channel realignment to confirm the compensation measures and structures are



functioning as designed and are providing fish habitat. Fish community sampling was conducted using a backpack electrofisher.

# Box Grove - DFO Authorization for Works Affecting Fish and Fish Habitat No. BU-04-3082 (2011) (Role: Aquatic Ecologist)

This survey was conducted to satisfy conditions included in the Department of Fisheries and Oceans (DFO) Authorization for Works Affecting Fish and Fish Habitat (DFO Authorization No. BU-04-3082). Condition 4.2 of the Authorization is to enhance fish passage through the creation of a low flow channel following the removal of a 30 m long culvert. The culvert removal and new channel construction were completed in spring 2010. This survey was conducted as part of the post construction monitoring program required by the DFO Authorization.

## Benthic Invertebrate and Water Quality Sampling, Fox Meadows Estates (2009) (Role: Project Biologist)

Benthic invertebrate sampling was conducted following the OBBN protocol and water quality samples were collected and submitted for testing. Results from the sampling effort were summarized and compared to previous years in an effort to gage and mitigate potential impacts from a residential development expansion.

### Fish Community Survey (2006) (Role: Fisheries Field Biologist)*

FWIN, NSCIN, gill netting and Seine netting techniques were used to perform a fish surveys on a lake and rivers in the Kawartha Lakes system. Processing of the sampled fish included weighing, measuring, sexing, determining gonadal condition, removing aging structures and aging.

#### **Terrestrial**

## Preliminary Aquatic and Terrestrial Assessment, Canada Post (2008) (Role: Project Biologist)

Preliminary aquatic and terrestrial assessments of various sites in Southern Ontario were conducted to establish the existing baseline conditions. Surveys involved recording bird species observed, vegetation cover species found on the site and assessing potential impacts on nearby Valued Ecosystem Components (VECs) and any aquatic systems.

### Category B Class EA, Ontario Realty Corporation (ORC) (2008) (Role: Project Biologist)

Conducted the background research and evaluation of existing natural heritage baseline conditions for multiple ORC properties situated across Ontario.

### Preliminary Aquatic and Terrestrial Assessment, Canada Post (2008) (Role: Project Biologist).

Preliminary aquatic and terrestrial assessments of various sites in Southern Ontario were conducted to establish the existing baseline conditions. Surveys involved recording bird species observed, vegetation cover species found on the site and assessing potential impacts on nearby Valued Ecosystem Components (VECs) and aquatic systems.

### Ecological Receptors of Concern Surveys, Various Clients. (2008) (Role: Project Biologist).

Conducted biological surveys of flora and fauna on potentially contaminated sites to assess the current site conditions.

## Soil Sampling Survey, Brampton Brick (2007) (Role: Project Biologist)

Collected soil samples to assess the impact of emissions on the surrounding terrestrial environment as part of the phytotoxicology assessment of the Brampton Brick facility.

## Forest and Wetland Classification, Parks Canada (2006) (Role: Ecological Research Assistant)*

Performed rapid assessments of 400 m forest plots and 100 m wetland plots to evaluate and classify sites along the Trent-Severn Waterway from Rice Lake to Canal Lake. Classification was based on biological features such as flora and fauna present and physiological features such as soil and drainage. Data collected was used to create a mapping inventory of the Trent-Severn system for Parks Canada and the Ministry of Natural Resources.

*Denotes experience with other firms

### Joel L. Keene B.Sc., M.Sc. (Aqua)

### Aquatic Ecologist / Benthic Taxonomist



Joel (Joe) Keene has 14 years of extensive marine and freshwater experience, including mark recapture studies and species inventory projects investigating fish population stability, species identification, measurement and marking of fish collected. He has processed over 11,000 samples from over 400 freshwater and marine projects, both in Canada and internationally. Joe has performed fecundity analysis on several fish species and marine mussels, and is experienced in the collection of soil, sediments, water, fish, crayfish, clam and benthic samples in the field using a variety of techniques and equipment. In addition, Joe is experienced with morphological and histological analysis, as well as detailed necropsies and dissection. He has been involved with a number of projects involving freshwater mussel species at risk (SAR) in Ontario and is familiar with both provincial and federal approvals processes for surveys and moves related to these organisms.

Joe's expertise includes compilation and statistical analysis of benthic data to derive various biological indices, including, but not limited to, Hilsenhoff Biodiversity Index, Percent Model Affinity, Simpson's Diversity and Evenness indices, EPT indices and BioMAP. He has researched and prepared scientific reports, studies, presentations and reviews relating to benthic studies and aquatic biology including Environmental Effects Monitoring (EEM) programs.

### **EDUCATION**

M.Sc., University of Guelph / Aquaculture, Guelph, Ontario, 1997

B.Sc. (Specialized Honours), University of Guelph / Marine Biology, Guelph, Ontario, 1994

Certificate, Royal Ontario Museum / Fish Identification, Toronto, Ontario, 2001

Certification, Ontario Freshwater Mussel Identification Workshop, Guelph, Ontario, 2008

Class 2 Electrofishing Crew Leader, Class 2 Electrofishing Training Course, Guelph, Ontario, 2010

#### **MEMBERSHIPS**

Member, North American Benthological Society

#### PROJECT EXPERIENCE

#### **Aquatic Ecology**

Middle - Grand River WWTP Assimilative Capacity Study, Kitchener, Ontario (Aquatic Ecologist)

Joe assisted with the planning and implementation of a field program to map and quantitatively sample aquatic vegetation to provide estimates of macrophyte biomass, used in the GRCA's GRSM Model in support of the ACS for the Kitchener wastewater treatment plant. Joe was involved in completing routine surface water sampling on the Grand River as part of this project.

## Proposed Burlington Quarry Expansion, Burlington, Ontario (Aquatic Ecologist)

Joe participated in the implementation and delivery of a multi year Natural Environment Existing Conditions program and report. The report was included as part of the application for the proposed Burlington Quarry expansion. The program involved the establishment of appropriate sampling stations for fish, benthos, water, thermal conditions and discharge.

### Periodic Monitoring EEM Program, Kirkland Lake, Ontario (Benthic Taxonomist / Aquatic Ecologist)

Joe conducted the analysis, interpretation and reporting of benthic data produced for the Environmental Effects Monitoring (EEM) program in 2008 which was conducted to assess the impacts of mine effluent on the receiving waters at the KLG site. He was also involved in the interpretation and reporting of water quality, sediment and fisheries data.

# Magnitude and Extent Environmental Effects Monitoring, Flin Flon and Snow Lake, Manitoba (Aquatic Ecologist / Field Crew / Benthic Taxonomist)

Joe was involved in the planning and benthic site selection for three Environmental Effects Monitoring (EEM) projects in the Flin Flon and Snow Lake areas of Manitoba for Hudson Bay Mining and Smelting. He collected benthic, sediment and water samples and processed, enumerated and identified organisms from the benthic samples. He performed the QA/QC and statistical analysis of the benthic data for each of the three EEM programs. Joe also assisted with the design and implementation of a tissue metal concentration study in amphipods (Hyalella) collected from several sites in the Flin Flon and Snow Lake areas.

### Aquatic Ecologist / Benthic Taxonomist

# Georgia-Pacific Cycle 5 Environmental Effects Monitoring - Investigation of Cause, Thorold, Ontario (Aquatic Ecologist/Field Crew Leader)

As part of an Environmental Effects Monitoring (EEM) program on Beaverdams Creek and Lake Gibson in Thorold, Ontario, Joe was involved in the planning, experimental design and site selection for a caged bivalve study to determine the effects of pulp and paper mill effluent on growth, survival and reproductive success in mussels (Lasmigona compressa). He collected water samples during the collection, deployment and retrieval of the mussels to test for a variety of parameters including metals, pH, conductivity, turbidity, nutrients and chlorophyll. He also conducted an effluent plume delineation survey within Lake Gibson.

### Freshwater Mussel Detection and Relocation in Medway Creek and the Grand River, London, Ontario (Aquatic Ecologist)

Involved in the identification and relocation of freshwater mussel species at risk from Medway Creek in London, Ontario and the Grand River in Kitchener-Waterloo, Ontario.

### Environmental Youth Corps, University of Guelph, Guelph, Ontario* (Aquatic Ecologist)

Conducted histological analyses of Sea lamprey (Petromyzon marinus) for use in fecundity and sex determination studies.

## Mark Recapture and Species Inventory Project*, North Shore of Lake Ontario (Aquatic Ecologist)

Electrofished several rivers, investigating the effects of low head barrier dams on fish distribution. Performed species identification, measuring and marking of fish, and collection of stream physical data.

# American eel (Anguilla rostrata) downstream migration and discrimination study for New York Power Authority*, New York (Aquatic Ecologist)

Performed eel collection using hoop nets and electrofishers, morphological analysis of external characteristics, and detailed necropsies including the collection of otoliths, blood, ovary and eel muscle tissues. He also conducted histological analysis of ovary tissue, focusing on oocyte developmental stage and diameters.

### Mark Recapture Study and Species Inventory Project, Mill Creek, Guelph, Ontario* (Aquatic Ecologist)

Participated in project investigating fish population stability. Performed species identification, measuring, weighing and marking of fish collected using an electrofisher.

#### **Benthic Services**

## Spencer Creek Invertebrate Study, Flamborough, Ontario (Benthic Taxonomist/Field Crew Leader)

Joe has coordinated the field program of benthic sampling in Spencer Creek near Flamborough, Ontario from 2006 to 2010 which monitors effects of a housing development on the benthic communities in the area. He has been responsible for the sorting and identification of benthic macroinvertebrates from the site and has performed the analysis of the resulting data. He was responsible for quality assurance/quality control analysis and the production of reports summarizing current conditions for each year, as well as an analysis of trends or changes over time

## 14 Mile Creek Invertebrate Study, Oakville, Ontario (Benthic Taxonomist/Field Crew Leader)

Joe has coordinated the field program of benthic sampling in 14 Mile Creek near Oakville, Ontario from 2006 to 2010 which monitors effects of a housing development on the benthic communities in the area. He has been responsible for the sorting and identification of benthic macroinvertebrates from the site and has performed the analysis of the resulting data. He was responsible for quality assurance/quality control analysis and the production of reports summarizing current conditions for each year, as well as an analysis of trends or changes over time

## DFO Small Bodied Fish Gut Content Analysis, Ontario (Benthic Taxonomist)

Joe conducted gut content analysis on 736 small bodied fish for Fisheries and Oceans, Canada. The study involved weights and measures of fish and gut contents as well as detailed identification and enumeration of benthic macroinvertebrates from the stomach and intestinal tract of dissected fish. Data will be used to compare resident fish diets both before and after Round Goby introduction.

## Acton Quarry Expansion, Acton, Ontario (Aquatic Biologist)

As an Aquatic Biologist, Joe participated in field studies for a multi-year Natural Environment Existing Conditions program and report. The report was included as a part of the application for the proposed Acton Quarry expansion. The program involved establishing appropriate sampling stations for baseline monitoring of fish, benthos, water, thermal conditions and discharge. He was also responsible for the sorting and identification of benthic macroinvertebrates collected as part of the multi-year field surveys, as well as the subsequent analysis and reporting of benthic community data.

^{*} denotes projects completed with other firms

### Aquatic Ecologist / Benthic Taxonomist

## Proposed Burlington Quarry Expansion, Burlington, Ontario (Aquatic Ecologist)

Joe participated in the implementation and delivery of a multi year Natural Environment Existing Conditions program and report. The report was included as part of the application for the proposed Burlington Quarry expansion. The program involved the establishment of appropriate sampling stations for fish, benthos, water, thermal conditions and discharge.

### Mount Forest Waste Water Treatment Plant (WWTP) Study*, Mount Forest, Ontario (Benthic Taxonomist / Field Crew)

Joe was responsible for the collection and identification of benthic macroinvertebrates upstream and downstream of existing and proposed Waste Water Treatment Plant (WWTP) discharge locations to establish baseline environmental conditions on the South Saugeen River.

### 2006 Biomonitoring-Crompton, Elmira, Ontario (Benthic Taxonomist)

Joe participated in the field program of benthic sampling in Canagagigue Creek near Elmira, Ontario from 2006 to 2008 which monitors effects of a polluted site near the creek on the benthic communities in the area. He has been responsible for the sorting and identification of benthic macroinvertebrates from the site and has performed the analysis of the resulting data. He was responsible for quality assurance/quality control analysis and the production of reports summarizing current conditions for each year, as well as an analysis of trends or changes over time. Prior to 2006, he was responsible for the sorting and identification of the benthic samples through a different firm.

## Tembec Enterprises Inc. Cycle 5 EEM, Kapuskasing, Ontario (Benthic Taxonomist)

As part of an Environmental Effects Monitoring (EEM) program on the Kapuskasing River, Ontario, Joe was involved in the planning, collection, sorting and identification of benthic samples for the purpose of characterizing the benthic communities upstream and downstream of a pulp and paper mill on the Kapuskasing River. He also collected water and sediment samples at each benthic station and assessed physical parameters such as pH, conductivity, dissolved oxygen, temperature and flows. He has performed statistical analysis of the resulting benthic data and produced reports summarizing current conditions for each year, as well as an analysis of trends or changes over time.

## Proposed Quarry, Flamborough, Flamborough, Ontario (Benthic Taxonomist/Field Crew)

Joe has been involved in several aspects of the surface water monitoring of lands adjacent to the proposed quarry in an effort to provide a picture of the background ecology and hydrology. He has collected, processed, identified and analyzed benthic samples from Flamboro and Mountsberg Creeks and their tributaries over several years. He has conducted bimonthly monitoring of a number of surface water stations in the area for water depth, flow and water quality. He has also taken part in a pump test which required daily assessments of flow, depth, turbidity, pH, temperature, dissolved oxygen, conductivity, metals and bacterial samples and was responsible for coordinating daily laboratory water sample deliveries and dissemination of results to stakeholders.

### Wescast Invertebrate Study, Wingham, Ontario (Benthic Taxonomist/Field Crew Leader)

Joe has coordinated the field program of benthic sampling in the Maitland River near Wingham, Ontario from 2006 to 2009 which monitors effects of a historic landfill on the benthic communities in the area. He has been responsible for the sorting and identification of benthic macroinvertebrates from the site and has performed the analysis of the resulting data. He was responsible for quality assurance/quality control analysis and the production of reports summarizing current conditions for each year, as well as an analysis of trends or changes over time. Prior to 2006, he was responsible for the sorting and identification of the benthic samples through a different firm.

### Bridge Street Bridge Rehabilitation, Kitchener, Ontario (Field Crew Leader/Benthic Taxonomist)

Joe was involved in the identification, collection and relocation of freshwater mussels from the Grand River in Kitchener, Ontario. This mussel move was performed to minimize impacts of bridge reconstruction and repair on local mussel populations which included the wavyrayed lampmussel (Lampsilis fasciola); a freshwater species at risk (SAR). Joe was involved in the planning, collection, identification and relocation aspects of this mussel move.

### Extensive Variety of Taxonomic Experience, 1999-2011 (Aquatic Invertebrate Taxonomist)

Joe has processed over 11,000 samples from over 400 projects in 12 years. Joe is skilled in the identification of benthic macroinvertebrates from lentic and lotic environments. His experience encompasses marine and freshwater systems across Canada and internationally.

^{*} denotes projects completed with other firms

### **PUBLICATIONS**

Sonnenberg, H., J. Keene, R. Park, K. Bernard, and S. Dickieson. Challenges overcome and lessons learned from using freshwater bivalves during two Investigation of Cause (IOC) Environmental Effects Monitoring (EEM) studies. Presented at the 37th Annual Aquatic Toxicity Workshop, Toronto, Ontario, 2010.

Are the costs to meet environmental effects monitoring (EEM) benthic sample precision and accuracy criteria justified? Proceedings of the 32nd Annual Aquatic Toxicity Workshop, 2005.

Holloway, A.C., J. Keene, D.G. Noakes, R.D. Moccia. Effects of clove oil and MS-222 on blood hormone profiles in rainbow trout, *Oncorhynchus mykiss* (Walbaum). *Aquaculture Research*, *35*: 1025-1030, 2004.

Keene, J.L., D.L.G. Noakes, R.D. Moccia, C.G. Soto. The efficacy of clove oil as an anaesthetic for rainbow trout, *Oncorhynchus mykiss* (Walbaum). *Aquaculture Research*, 29: 89-101, 1998.

### **Ecologist**



Kelly Clayton is a member of the Environmental Management Group at Stantec Consulting with four years of industry experience. She has a Graduate Certificate in Ecosystem Restoration and a Bachelor of Environmental Science, majoring in environmental geography and area of emphasis in biotic systems. Kelly has gained valuable experience through her formal employment and her extensive participation in volunteer projects in Ontario, as well as the United States of America. Her experience at teaching college-level environmental monitoring has imbued Kelly with a practical ability to apply Ecological Monitoring and Assessment Network (EMAN) and Ontario Stream Assessment Protocol (OSAP) protocols.

Kelly has conducted a wide array of environmental monitoring that includes bird migration surveys, salmon spawning counts, butterfly and odonate surveys, as well as fish assessment and vegetation surveys. She is familiar with the use of all manner of such survey equipment as GPS and radio telemetry equipment, seine nets, hoop nets, gill nets, fyke nets, minnow traps, basking traps and spring haul traps. Kelly is experienced at the identification of flora and fauna, and is capable of handling wildlife. Certified in ELC (Ecological Land Classification), Class II Electrofishing, and Ontario Benthic Biomonitoring Network, Kelly has the ideal background to support a wide variety of both Terrestrial and Aquatic natural heritage studies. Her laboratory experience has honed Kelly's skills in data processing and analysis, and she has a demonstrated ability to interpret and report findings accurately.

#### **EDUCATION**

B.Sc. (Env.), University of Guelph / Environmental Science, Guelph, Ontario, 2007

Graduate Certificate, Niagara College / Ecosystem Restoration, Niagara-on-the-Lake, Ontario, 2009

Class II Electrofishing Certificate, Niagara College / Ecosystem Restoration, St. Catharines, Ontario, 2008

Ontario Benthic Biomonitoring Network Certificate, Niagara College / Ecosystem Restoration, St. Catharines, Ontario, 2009

Certificate, Ecological Land Classification (ELC), Lindsay, Ontario, 2010

Certificate, Tallgrass Ontario / Seed Collector, Burlington, Ontario, 2010

Certificate, Ontario Wildlife Rehabilitation Network (OWREN), London, Ontario, 2010

Certificate, St. Johns Ambulance / CPR and First Aid, Burlington, Ontario, 2010

Workplace Hazardous Materials Information System (WHMIS), Burlington, Ontario, 2010

Licence, Boat Smart / Pleasure Craft Operators, Orangeville, Ontario, 2008

Certificate, ROM / Ontario Fish Identification Workshop, Toronto, Ontario, 2011

#### PROJECT EXPERIENCE

#### **Education**

Niagara College Environmental Monitoring Program*, Niagara-on-the-Lake, Ontario (Part-time Teacher)

Taught two sections of students at a second-year, college level. Demonstrated and explained Ontario Stream Assessment Protocol (OSAP) and Ontario Benthic Biomonitoring (OBBN) protocols. Discussed proper field and lab sampling/analysis techniques for water, sediment, and benthos. Prepared assignments, lectures, and exams (both written and practical). Evaluated students based on performance.

#### **Linear Infrastructure**

Thunder Bay Generating Station Pipeline Project, Thunder Bay, Ontario (Aquatic Ecologist)

Researched and summarized data for existing conditions report as part of the EA process.

#### **Ecologist**

### Union Gas Pipeline Construction, Nanticoke, Ontario (Aquatic Ecologist)

Researched and summarized data for existing conditions report as part of the EA process.

#### Mining

## Environmental Effects Monitoring (EEM) Program: Vale Inco, Sudbury, Ontario (Aquatic Ecologist)

Collected fish and water samples for toxicity testing.

### Environmental Effects Monitoring (EEM) Program: Hudson Bay Mining and Smelting, Flin Flon, Manitoba (Aquatic Ecologist)

Collected Hyalella, water samples and sediment samples for toxicity testing.

#### **Natural Sciences & Heritage Resources**

Proposed Melancthon Quarry, Melancthon, Ontario (Aquatic Ecologist)

Conducted fish community surveys (electrofishing).

### New Hamburg Oxbow, New Hamburg, Ontario (Aquatic Ecologist)

Collected water samples and water quality data twice monthly.

### Blue Springs Creek Ground and Surface Water Monitoring, Arkell, Ontario (Aquatic Ecologist)

Downloaded weekly temperature and water level data and performed stream discharge measurements.

### Ontario Power Generation - Lake Gibson Project, Thorold, Ontario (Aquatic Ecologist)

Collected benthic invertebrate and water samples. Safety boat operator.

### Mill Creek Surface Water Monitoring Program, Milton, Ontario (Aquatic Ecologist)

Performed monthly stream discharge measurements and downloaded water level and temperature logger data. Graphed hydrological data.

## Greenhouse Effluent Filtration Design Team, Niagara College*, Niagara-on-the-Lake, Ontario (Biologist)

Conducted environmental impact assessment on receiving stream and suggested several filtration design methods.

### Bird Studies Canada Marsh Monitoring Program*, Hamilton, Ontario (Volunteer)

Conducted amphibian surveys on Royal Botanical Gardens property. Aided in the development of the BSC database.

### Species at Risk Inventory at Legends on the Niagara Golf Course*, Chippewa, Ontario (Student Consultant)

Designed and conducted survey methods. Produced research and consultant proposals. Made recommendations for further restoration efforts.

## St. Clair River Horizontal Directional Drill, Sarnia, Ontario (Aquatic Ecologist)

Performed analysis and presentation of in-situ and laboratory water quality data. Reported on results of water quality monitoring program.

# Island Lake Conservation Area, Credit Valley Conservation*, Orangeville, Ontario (Conservation Technician)

Served as a client services representative, which entailed conservation awareness education. Maintained conservation area grounds.

### Royal Botanical Gardens*, Hamilton, Ontario (Restoration Ecologist)

Coordinated summer students and assisted in the planning and implementation of restoration activities. Participated in habitat rehabilitation strategies (cattail and waterlily plantings). Maintained floodplain connections.

Assisted the Species at Risk Biologist in the creation of snake hibernacula. Assisted in turtle monitoring using radio telemetry, basking traps and hoop nets. Assisted Terrestrial Ecologist with Prairie grassland rehabilitation techniques (Prescribed burns and Prairie plantings). Conducted environmental monitoring (salmon spawning count, waterfowl migration count, aquatic vegetation surveys, butterfly and odonate counts).

Performed wildlife population management (carp (Cyprinus carpio) seining in Cootes Paradise Marsh and RBG ponds, electrofishing for carp), and beaver dam maintenance.

Operated Cootes Paradise Fishway carp barrier (to separate non-native species from native) and ran educational presentations at Cootes Paradise Fishway.

Collected water quality measurements and performed data entry, data quality control and analysis, in addition to report writing. Assisted in development of educational materials (pamphlets and signage).

^{*} denotes projects completed with other firms

### **Ecologist**

### Various Environmental Effects Monitoring (EEM) Studies, Ontario (Aquatic Ecologist)

Conducted fish population monitoring, benthic invertebrate identification and report writing/data management in support of various EEM studies for both Mining and Pulp and Paper industry projects.

#### Renewable Energy

White Pines Wind Farm, Picton, Ontario (Aquatic Ecologist)

Performed water-body assessments on mapped watercourses.

### Fairview Wind Farm, Stayner, Ontario (Aquatic Ecologist)

Performed water-body assessments on mapped watercourses.

## Pristine Power Wind Power, St. Columban, Ontario (Aquatic Ecologist)

Conducted fish community surveys (electrofishing).

## Algonquin Power Wind Project, Amherst Island, Ontario (Aquatic Ecologist)

Conducted shoreline habitat mapping and fish community surveys.

### Solar Power Plan Design Team, University of Guelph, City of Guelph*, Guelph, Ontario (Student)

Designed a solar power plan for the City of Guelph to coordinate with Community Energy Plan. Conducted public surveys on solar power interest. Coordinated with key stakeholders. Conducted cost/benefit analysis, baseline research regarding solar power use, prepared proposal, and presented plan to key stakeholders.

### Port Dover Wind Farm, Port Dover, Ontario (Assistant Aquatic Ecologist)

Fish population monitoring (electrofishing).

### Melancthon Wind Power Project, Melancthon and Amaranth Townships, Ontario (Biologist)

Conducted bat and bird mortality monitoring studies and raptor monitoring (winter raptor counts) as well as habitat assessments and data analysis.

### **Transportation Planning**

MTO Highway 3, 6 and 24, Simcoe, Ontario (Aquatic Ecologist)

Conducted fish community surveys (electrofishing).

^{*} denotes projects completed with other firms

Ecologist

### **PUBLICATIONS**

Fuller, M.M., K. Clayton, N. Ward. Project Paradise Season Summary Report 2009. *Royal Botanical Gardens. Hamilton, Ontario. RBG Report No. 2010-01*, 2010.

Clayton, K. Carroll's Bay Recovery and Management Strategy. *Royal Botanical Gardens. Hamilton, Ontario*, 2010.

Clayton, K. Recovery and Management Strategy for Carroll's Bay Marsh. *Presentation at the Project Paradise Workshop*, 2010.

#### **Environmental Technician**



Marc Faiella's experience has included industry and development sector projects. He has conducted field investigations, liaised with representatives of government agencies, regulators and worked with First Nations, synthesized data and produced reports. Marc's specific areas of expertise include Environmental Effects Monitoring (EEM), Environmental Impact Studies (EIS) and Fish Habitat Assessments. He has assessed potential impacts to aquatic habitats at a number of mining and development-related sites, such as metal mines, quarries, pulp and paper mills, subdivisions, city drainage systems and wind energy projects. Marc's technical experience has focused mainly on aquatic habitats. He has conducted fisheries inventories and Species at Risk project surveys based on provincial protocols, trout spawning surveys, collected benthic invertebrate samples, and collected water, sediment and non-lethal and lethal fish tissue samples for mercury. Marc has gained practical experience with all construction phases of DFO applied work sites. In addition, Marc has on-site experience at remote northern sites where access is gained via helicopter, ATV, boat and hiking.

#### **EDUCATION**

Tech. Dipl., Sir Sanford Fleming College / Ecosystem Management, Lindsay, Ontario, 2005

Training Certificate, Royal Ontario Museum Fish Identification Workshop, Royal Ontario Museum, Ontario, 2006

Certificate, MTO/DFO/OMNR Protocol, Toronto, Ontario, 2006

Certificate, St. John Ambulance / First Aid and CPR, Guelph, Ontario, 2010

P.A.L. and Firearms, Brampton, Ontario, 2005

Sir Sanford Fleming College / Short Wave Radio, Lindsay, Ontario, 2004

Sir Sanford Fleming College / Chainsaw Operator, Lindsay, Ontario, 2004

Certificate, Pleasure Craft Operator, Toronto, Ontario, 2005

Training Certificate, Class 1 Electrofishing Certificate, MNR, Ministry of Natural Resources, Ontario, 2012

Fisheries and Oceans Canada / Ontario Freshwater Mussel Identification Workshop, Burlington, Ontario, 2011

#### **MEMBERSHIPS**

Canadian Environmental Practitioner In Training (CEPIT), Canadian Environmental Certification Approvals Board

#### PROJECT EXPERIENCE

#### **Environmental Assessments**

Communal Irrigation Study, Township of Melancthon, Ontario (Crew Lead)

Obtained appropriate licences to conduct presence / absence and fish utility surveys within the Pine and Noisy River watersheds. Served as crew lead, overseeing fish surveys that were conducted in 2008 and preparations for proposed surveys in the spring / summer of 2009. Responsible for assembling report figures, maps and analysis of collected fisheries data, in tandem with Stantec's in-house GIS / graphics department.

### Bruce to Milton Transmission Reinforcement Project, Multiple Sites, Ontario (Crew Lead)

Key member of the study team for the proposed hydro corridor expansion from Bruce Nuclear to a Milton, Ontario. Liaised with several Ministry of Natural Resources offices to coordinate issuance of permits and processing of historical fisheries data requests. Worked directly with the project manager to complete a work plan to safely and efficiently complete spring and summer fisheries surveys along the approximate 180 km corridor. Led a 2-person crew to conduct stream cross section surveys used to determine appropriate sizing of culverts. Coordinated production of detailed mapping and figures upon completion of the surveys, in tandem with Stantec's in-house GIS / graphics department, and was key in production of the independent Class EA report.

#### Environmental Technician

### Port Alma Wind Power Project, Port Alma, Ontario (Field Crew / Data Analyst)

Exclusively responsible for conducting background topography research. Performed tree measurements for entire survey area, identified and mapped tree species locations using aerial photo base. Constructed tests for future heights (software) and produced reports detailing results. These results had significant bearing on wind turbine selection and placement.

### Brampton MESP, Phase I, Springdale Environmental Site Assessment, Brampton, Ontario (Habitat Assessor)

Responsible for obtaining background information and conducted field work to assess study area. Compiled field notes and detailed data using an air photo base. Prepared final technical memorandum for submission.

#### **Environmental Site Management**

### Randall Drain Branch A Restoration, Environment Inspection and Post-construction Monitoring, Waterloo, Ontario (Environmental Inspector)

Responsible for overseeing that approved plans to remediate a damaged watercourse on the City of Waterloo's airport property, as outlined by The Department of Fisheries and Oceans, Grand River Conservation Authority and Stantec Consulting Ltd., were carried out accordingly. Works included properly diverting flow downstream, efficiently dewatering the damaged area and relocating any stranded aquatic species downstream. Worked closely with the construction crew to ensure all remediation phases met Fisheries Act requirements. Prepared final report.

#### Mining

### Vale Technology Development - Hydrology and Aquatic Assessment, Sudbury, Ontario (Aquatic Technician)

Marc was part of a two person crew that conducted a fishery presence/absence survey in a number of lakes associated with mining practices. Fish were identified, measured and tissue samples were collected for laboratory analysis.

### Environmental Effects Monitoring (EEM) Program: Periodic Monitoring Phase, Hudson Bay Mining and Smelting, 2007, Flin Flon, Manitoba (Aquatic Technician)

Participated in metal mine EEM Periodic Monitoring phase, involving fisheries and benthic invertebrate surveys. Collected benthic and water samples in the field as well as fish, using various collection techniques. Completed habitat assessments, plume measurements and fish necropsies. Upon completion of field work, performed data analysis and reporting for the EEM report.

### Environmental Effects Monitoring (EEM) Program: Focused Monitoring Phase, Hudson Bay Mining and Smelting, 2009, Flin Flon, Manitoba (Aquatic Technician)

Participated in metal mine EEM Focused Monitoring phase, involving fisheries and benthic invertebrate surveys. Collected benthic and water samples in the field as well as fish, using various collection techniques. Completed habitat assessments, plume measurements and fish necropsies. Upon completion of field work, performed data analysis and reporting for the final EEM report.

### Environmental Effects Monitoring (EEM) Program: Periodic Monitoring Phase, Hudson Bay Mining and Smelting, 2007, Snow Lake, Manitoba (Aquatic Technician)

One of a 2-person crew stationed in Snow Lake for metal mine EEM Periodic Monitoring phase, involving fisheries and benthic invertebrate surveys. Collected benthic and water samples in the field as well as fish, using various collection techniques. Completed habitat assessments, plume measurements and fish necropsies. Upon completion of field work, performed data analysis and reporting for the EEM report.

### Environmental Effects Monitoring (EEM) Program: Focused Monitoring Phase, Hudson Bay Mining and Smelting, 2009, Snow Lake, Manitoba (Aquatic Technician)

One of a 2-person crew stationed in Snow Lake for metal mine EEM Focused Monitoring phase, involving fisheries and benthic invertebrate surveys. Collected benthic and water samples in the field as well as fish, using multiple collection techniques. Completed habitat assessments, plume measurements and fish necropsies. Upon completion of field work, performed data analysis and reporting for the final EEM report.

#### Natural Sciences & Heritage Resources

Hydro One Series Capacitor Station (Project Manager) Responsible for a fisheries sampling survey to determine the presence or absence of fish species near a proposed capacitor station. Secured a Fish Collection Licence from OMNR, compiled maps to assist in field investigations, assembled field staff, initiated survey and prepared report for internal and external circulation.

^{*} denotes projects completed with other firms

#### Environmental Technician

### Melancthon Wind Energy Project Tree Surveys, Melancthon, Ontario (Aquatic Technician)

Measured tree heights and the species identified with use of a laser-sighted measuring device. Performed a desktop exercise, whereby heights were projected over a 20 year period. These projections were then synthesized on aerial photos, showing potential hazards to turbines, thus assisting with selection of wind turbine placement and selection of site-appropriate turbine models.

#### Oil & Gas

### Enbridge Pipeline Crossing, Sarnia, Ontario (Aquatic Construction Monitor)

Marc was responsible for monitoring the St. Clair River for "frakouts" that may occur during the horizontal drilling and pipe line installation under the St. Clair River. Marc was also responsible for collecting water samples for laboratory analysis and recording current river conditions using a YSI water quality meter.

#### **Power**

### Biological Monitoring for the Shekak-Nagagami Generating Station, Hearst, Ontario (Field Crew Lead)

Responsible for compiling appropriate field gear to complete the Year-13 monitoring study along the Shekak and Nagagami Rivers in the vicinity of a hydroelectric dam. Participated in surveys, which included: fish inventories through electrofishing, fish tissue collection via gillnets, benthic sampling and water quality and sediment quality collection through several collection techniques. Performed data analysis and completion of the report. Worked closely with Brookfield Power, the MNR and Hearst employees to obtain necessary information and data to complete the project.

### Hydro One Series Capacitor Station, Huntsville, Ontario (Project Management / Crew Leader)

Undertook a fisheries sampling survey to determine the presence or absence of fish species near a proposed capacitor station. Duties included securing fisheries permits from related agencies, compilation of maps to assist with surveys, assembly of staff, planned and implemented the field program and prepare report for internal and external circulation.

### Yellow Falls Hydroelectric Project, Smooth Rock Falls, Ontario (Aquatic Technician)

Crew member responsible for extensive fish, benthic, water and habitat surveys along the Matagami River. Fish surveys included setting and retrieving gillnets, electrofishing, identification of fish species, retrieving age indicators from fish, characteristic measurements and collecting non-lethal samples for mercury analysis. Collected benthic invertebrates using various sampling techniques for later sorting and identification. Collected water samples and substrate samples using various sampling techniques and equipment for lab testing. Worked closely with a First Nations crew member for the duration of the project and, upon completion of the field surveys, performed data analysis and report writing.

#### **Roads and Highways**

### Highway 11 Access Improvements. Preliminary Design. MTO Northeastern Region, Huntsville, Ontario (Fisheries Specialist)

Marc conducted an inventory of aquatic resources adjacent to the existing highway. The fish and fish habitat investigations were completed on three watercourses in the Study Area, and were conducted in accordance with the 2006 MTO/DFO/OMNR Protocol

### Highway 11 Access Improvements. Preliminary Design. MTO Northeastern Region, Huntsville, Ontario (Fisheries Specialist)

Marc conducted an inventory of aquatic resources adjacent to the existing highway. The fish and fish habitat investigations were completed on three watercourses in the Study Area, and were conducted in accordance with the 2006 MTO/DFO/OMNR Protocol

### Highway 8 and Highway 401 Interchange Improvements. Preliminary Design. MTO Southwestern Region, Kitchener, Ontario (Fisheries Specialist)

Marc conducted an inventory of aquatic resources within the study area. The fish and fish habitat investigations were completed following the 2006 MTO/DFO/OMNR Protocol. An exception to this occurred at the Grand River, where fish inventories were not conducted in order to avoid disturbances to mussel Species at Risk that are known to occur in the area

### Highway 3 Rehabilitation, Renton to Jarvis. Detail Design. MTO West Region, Ontario (Fisheries Specialist)

Marc participated in detailed Natural Heritage features assessments and a Fish Habitat Existing Conditions Report in accordance with the 2006 MTO/DFO/OMNR Protocol. Three major water crossings (Nanticoke Creek and two crossings of Black Creek) were assessed in addition to other smaller crossings

^{*} denotes projects completed with other firms

#### Environmental Technician

#### **Wind Power**

### White Pines Wind Energy, Prince Edward County, Ontario (Field Crew Lead)

Marc conducted aquatic habitat assessments and a fisheries presence/absence surveys to determine aquatic features under REA (Renewable Energy Act). He also assisted in producing a photo log and figures that assisted in the application process for construction work permits.

### Fairview Wind Energy, Staynor, Ontario (Field Crew Lead)

Marc conducted aquatic habitat assessment surveys to assess their designation under the REA (Renewable Energy Act). In addition, Marc conducted electrofishing surveys to assess the presence or absence of fish species and was also part responsible for producing a photo log and figures to assist in the application process for associated construction work permits.

### Port Dover Wind Energy, Port Dover, Ontario (Aquatic Technician)

Marc conducted field surveys to assess aquatic features and to determine its designation under the REA (Renewable Energy Act). Marc was also part responsible for producing reports, photo logs and figures to aid in the application process to gain associated construction work permits.

### Amherst Island Wind Energy, Amherst, Ontario (Field Crew Lead)

Responsible for collecting fisheries habitat characteristics along the proposed shoreline of Lake Ontario to aid in obtaining associated construction work permits. Marc was also responsible for conducting a presence/absence survey using several capture methods such as, gill nets, boat electrofishing, Fyke nets and minnow traps.

^{*} denotes projects completed with other firms

### Mitch Ellah Tech. Dipl., B.Sc. (Hons.)

### Aquatic Ecologist



Mitch Ellah is an aquatic ecologist who serves Stantec's Environmental Services group. He has significant experience conducting field research in the Canadian Arctic and various locations in southern and northern Ontario and Quebec. Mitch has been involved in all aspects of aquatic and terrestrial projects, including the review of background data, correspondence with government agencies, site investigation and data collection, and report writing. He is knowledgeable in, and proficient at field surveys and standardized protocols involving data collection for water quality and quantity, benthic macroinvertebrates, fish, bird, herpetofauna, aquatic plants and forest communities. Mitch has performed vegetation surveys using Ecological Land Classification (ELC) and Ontario Wetland Evaluation (OWES) protocols. He has excellent fish identification skills, and is proficient at conducting aquatic habitat and fish community assessments using electrofishing equipment, gill nets, fyke nets, seine nets and minnow traps. Mitch worked progressively for three field seasons in the Canadian Arctic investigating treatment wetlands in Nunavut and NWT Inuit communities. Mitch's knowledge of ecology and biotic identification, his strong communication skills and proven abilities at multi-discipline teamwork are complemented by his research experience, providing him with valuable technical expertise to meet a variety of project needs.

#### **EDUCATION**

B.Sc. (Honours), Trent University / Environmental Resource Science, Peterborough, Ontario, 2011

Tech. Dipl., Sir Sandford Fleming College / Environmental Technologist Diploma, Lindsay, Ontario, 2009

Tech. Dipl., Sir Sandford Fleming College / Environmental Technician Diploma, Lindsay, Ontario, 2008

Certificate, Ministry of Natural Resources / Ontario Wetland Evaluation System (OWES), Lindsay, Ontario, 2009

Certificate, Royal Ontario Museum / Fish Identification Workshop, Toronto, Ontario, 2011

Certificate, Stantec Consulting Ltd. / Class 2 Electrofishing Training, Guelph, Ontario, 2012

#### PROJECT EXPERIENCE

#### Natural Sciences & Heritage Resources

Hydro One Clarington Transformer Station, Clarington, Ontario (Field Ecologist)

Conducted fisheries and aquatic habitat assessment for proposed transformer station development

Shell Oil and Gas, Montreal, Quebec (Field Ecologist)
Conducted site investigation for amphibian and reptile

Conducted site investigation for amphibian and reptile populations, and amphibian breeding call surveys

### Natural Heritage Site Inventories and Reporting*, Various Locations (Field Ecologist)

Bat maternity roost surveys in forest settings, various wildlife surveys including amphibians, reptiles, mammals, and birds; data collection and report writing for renewable energy REA environmental assessment projects; ELC vegetation community and wildlife habitat assessments; online database research for technical report preparation, including MNR Biodiversity Index and various atlases

## Proposed Melancthon Quarry, Melancthon, Ontario (Field Ecologist)

Conducted species at risk surveys targeting Whip-poor-will using standardized MNR protocol

### Mitch Ellah Tech. Dipl., B.Sc. (Hons.)

### Aquatic Ecologist

### Proposed Simpson's Quarry EA, Bancroft, Ontario (Field Ecologist)

Conducted field sampling, including breeding bird, waterfowl breeding, and amphibian surveys, aquatic assessments, habitat characterizations, as well as species at risk surveys that included Blanding's Turtle and Whip-poor-will

### **Renewable Energy**

### Niagara Region Wind Corp. Wind Farm, Niagara Region, Ontario (Field Ecologist)

Conducted aquatic assessments using REA water body designations, fish community presence/absence study and habitat characterization related to proposed wind farm

### Bow Lake Wind Farm, Montreal River Harbour, Ontario (Field Ecologist)

Conducted fieldwork related to natural heritage terrestrial assessment that included locating bat maternity roosts, amphibian surveys, and habitat delineation. Aquatic fieldwork included habitat characterization and water body determination congruent with the Renewable Energy Act (REA) and fish community assessments

### Cedar Point Wind Farm, Middlesex County, Ontario (Field Ecologist)

Conducted snake cover board searches to determine presence/absence of snake population and diversity

### Capital Power (K2) Wind Farm, Goderich, Ontario (Field Ecologist)

Conducted aquatic assessments using REA water body designations, fish community presence/absence study and habitat characterization related to proposed wind farm

#### **Research / Laboratories**

Centre for Alternative Wasewater Treatement (CAWT), Sir Sandford Fleming College*, Baker Lake, Nunavut (Arctic Field and Laboratory Research Technician)

Remote study site in Baker Lake, NU; researcher for an International Polar Year project and United Nations Environmental Program

### Centre for Alternative Wastewater Treatment (CAWT), Sir Sandford Fleming College*, Various Sites, Nunavut and Northwest Territories (Arctic Field and Laboratory Research Technologist)

Remote study sites in Baker Lake, NU, Gjoa Haven, NU and Holman, NT; results used for the continuation of the International Polar Year research project

### Centre for Alternative Wastewater Treatment (CAWT), Sir Sandford Fleming College*, Alert, Nunavut (Arctic Field and Laboratory Research Technician)

A partnership project with Department of National Defense and Environment Canada Wastewater Division; remote study site in Alert, NU; sole researcher to plan, research, organize equipment, work with partners and set-up laboratory; conducted bird surveys for Environment Canada

#### Water

### Komoka Wastewater Treatment Plant, Komoka, Ontario (Field Ecologist)

Conducted benthic macroinvertebrate and water quality sampling for wastewater treatment plant discharge

### Fox Meadow Subdivision EEM, Peterborough, Ontario (Field Ecologist)

Conducted benthic macroinvertebrates and water quality sampling for EEM of subdivision encroachment on PSW

### Canagagigue Creek EEM, Elmira, Ontario (Field Ecologist)

Water quality and quantity measuring, benthic macroinvertebrate, and fish community assessment at chemical plant discharge site

#### Blue Springs EEM, Guelph, Ontario (Field Ecologist)

Routine flow measurement, monitoring and maintenance of rain gauges, Barologgers, air temperature loggers and in-stream water level loggers to assess potential effects of aggregate operations and groundwater draw down on fish habitat in a coldwater stream

#### Mill Creek EEM, Guelph, Ontario (Field Ecologist)

Routine flow measurement, monitoring and maintenance of rain gauges, Barologgers, air temperature loggers and in-stream water level loggers to assess potential effects of aggregate operations and groundwater draw down on fish habitat in a coldwater stream

^{*} denotes projects completed with other firms

### Mitch Ellah Tech. Dipl., B.Sc. (Hons.)

Aquatic Ecologist

### **PUBLICATIONS**

Chemical and Biological Changes in an Arctic Treatment Watershed to Assess the Value of Macroinvertebrate Biomonitoring. *Undergraduate Thesis, Trent University, Peterborough, Ontario,* 2011.

### Trevor Chandler MSC

### Fluvial Systems Specialist



Trevor Chandler is a geomorphologist, with 18 years experience, working in concert with Stantec's Aquatic Group. He has participated in a number of environmental and fluvial investigations that have included Environmental Effects Monitoring and effluent plume delineations for Pulp and Paper and Mining Sector clients, natural channel design and restoration, channel stability studies, erosion threshold and meander belt assessments for planning, and post impoundment monitoring and fisheries mortality investigations at hydroelectric facilities. Current projects include delineation of mining effluent in central Manitoba, the restoration of a degraded urban watercourse to support Redside Dace, an at-risk fish species, meander belt assessments, channel stability and fluvial erosion threshold analyses, and an investigation of meander planform evolution along a large southern Ontario river.

#### **EDUCATION**

M.Sc., University of Guelph / Fluvial Geomorphology, Guelph, Ontario, 1992

B.E.S. (Honors Co-op), University of Waterloo / Environmental Studies, Waterloo, Ontario, 1990

Certificate, Wildland Hydrology Inc. / River Morphology & Applications (Level II), Asheville, North Carolina, 2011

Wildland Hydrology Inc. / Applied Fluvial Geomorphology Course (Level I), Guelph, Ontario, 1993

#### PROJECT EXPERIENCE

#### **Environmental Assessments**

Plume Delineation Investigation, Spruce Falls, Ontario (Environmental Scientist)

In situ conductivity and river and effluent discharge records were used to delineate the effluent plume concentrations along the Kapuskasing River over a period of one year.

#### Sedimentation Investigation, Humber Arm, Newfoundland (Environmental Scientist)

Custom sedimentation towers were designed, constructed and deployed for two weeks to collect inorganic sediments in a 40 m deep marine environment. The towers consisted of an array of duplicate collectors spaced at four different depths in the water column. One array was deployed in the vicinity of pulp and paper and municipal discharges and the other in an undisturbed reference area.

### Environmental Effects Monitoring (EEM) Plume Investigations, Various Sites, Ontario, Quebec and Newfoundland (Environmental Scientist)

Eight separate plume investigations, using rhodamine WT as an active tracer, were conducted at eight pulp and paper mills in Ontario, Quebec and Newfoundland. Receiving environments included large rivers, lakes, tidal estuaries, and marine environments.

### Environmental Effects Monitoring (EEM), Flin Flon, Manitoba (Environmental Scientist)

Mining effluent plume investigations, using in situ conductivity, were undertaken along an effluent plume flowpath that extended over 100 km from the end-of-pipe through a variety of hydraulic environments.

#### **Geomorphologic Assessments**

Estimated Meander Belt Delineation, Credit Valley Watershed*, Southwestern Ontario (Geomorphologist)

All permanent and intermittent watercourses within the Credit River System upstream of Mississauga, ON were delineated into distinct reaches. Meander belts were estimated along all reaches using detailed topographic mapping and high resolution aerial photography.

## Sydenham River Fluvial Geomorphology Assessment*, Southwestern Ontario (Geomorphologist)

The mainstem and all tributary watercourses in the basin were delineated into geomorphically and hydrologically distinct reaches and the stability of each reach assessed by field survey. Recommendations were made to enhance channel stability and improve water quality.

### Trevor Chandler M Sc

### Fluvial Systems Specialist

## Mini-Regional Curve Analysis, Brampton, Ontario (Geomorphologist)

A series of small to medium-sized streams west of Brampton were surveyed to develop a regional curve. The purpose of the analysis was to develop a tool to predict appropriate bankfull and inner-berm dimensions for the restoration of highly disturbed watercourses.

### Ontario Stream Assessment Protocol, Highland Creek*, Toronto, Ontario (Geomorphologist)

Fisheries habitat was systematically inventoried throughout the watershed in each of 22 channel reaches.

### Highland Creek Geomorphology Study*, Toronto, Ontario (Geomorphologist)

A series of detailed geomorphological field investigations were systematically undertaken in each of the 22 delineated reaches in the watershed. Measurements in each reach included total station survey of 10 cross-sections of channel and floodplain, long profile survey, Wolman pebble counts and bank geometry and materials characterization.

### Waterloo Creek Geomorphic Inventory*, Waterloo, Ontario (Geomorphologist)

All watercourses within the City were identified and delineated into distinct morphological and hydrological reaches. All watercourses were walked, erosion sites identified, and reach stability assessed using Rapid Geomorphic Assessment technique.

### Greater Toronto Airports Authority (GTAA) Fluvial Geomorphology Study, Etobicoke, Ontario (Geomorphologist)

A fluvial geomorphology study of the Etobicoke Creek was undertaken to address creek stability issues that posed a potential risk to runways and other airport infrastructure.

Problem areas were identified and potential solutions presented.

### Shekak-Nagagami Erosion Assessment, Hearst, Ontario (Geomorphologist)

Fluvial investigations for a hydroelectric generating station, monitoring design and implementation of the field program (e.g. fishing efforts, water/sediment sampling and erosion pin installation), desktop analyses and historical assessment of the Shekak and Nagagami Rivers for the purpose of quantifying system-wide, long-term bank erosion rates and directions.

#### Mining

### Effluent Plume Study, Lake Gibson, St. Catharines, Ontario (Environmental Scientist)

Effluent concentrations were measured using in situ conductivity in a highly modified receiving environement affected by artifical pumping.

### Mine Closure Investigations, Poirier and Selbaie, Quebec (Environmental Scientist)

Mining effluent concentrations were measured using in situ conductivity throughout the baseline and post-closure monitoring phases of the project.

### Environmental Effects Monitoring (EEM), Snow Lake, Manitoba (Environmental Scientist)

Mining plume delineation surveys were conducted using in situ conductivity conductivity on an embayment on a large inland lake. Effluent discharge rates and weather conditions were monitored to determine the effect on the concentration, size, and shape of the effluent plume in the receiving environment.

### Environmental Effects Monitoring (EEM), Snow Lake, Manitoba (Environmental Scientist)

A mining plume delineation survey, using in situ conductivity, was undertaken along the effluent flow path which traversed a variety of hydraulic environments ranging from a small watercourse to large lakes.

#### **Stream Restoration**

### Northrup Creek Channel Restoration, Greece, New York (Geomorphologist)

A two kilometre section of watercourse is being re-aligned in order to alleviate the effects of long term fill placement within the floodplain. The field investigations involved geomorphic assessments conducted to determine appropriate watercourse dimensions. The Bank Erosion Hazard Index (BEHI) and Near Bank Stress (NBS) models were utilized to assess existing bank stability and potential for future erosion. The restored watercourse will exhibit a natural planform that alleviates flooding and incorporates a variety of natural hydraulic habitats, such as woody debris bank treatments and rock constructed riffles.

^{*} denotes projects completed with other firms

### Trevor Chandler M.Sc.

### Fluvial Systems Specialist

### Laurel Creek Geomorphic Assessment, Waterloo, Ontario (Geomorphologist)

A 400 metre section of watercourse is being restored which will involve the removal of a channel constriction and vertical gabion banks, improvements to floodplain connection and the installation of a rock constructed riffle over an existing exposed sanitary sewer crossing. BEHI and NBS models were applied to isolate sections of the watercourse where bank treatments were deemed necessary.

### Snake Road Tributary Restoration, Burlington, Ontario (Geomorphologist)

A fluvial assessment and topographical survey were undertaken to restore a small section of watercourse affected by erosion that had exposed a formerly buried gas pipeline.

### Tributary to Grand River Culvert Removal, Cambridge, Ontario (Geomorphologist)

A derelict corrugated steel pipe culvert is being removed and the channel and floodplain are being restored to a natural condition. A topographical survey of the stable watercourse upstream and downstream of the crossing was utilized to guide the restoration.

### Tributary to Fairchild Creek, Brantford, Ontario (Geomorphologist)

A fluvial geomophological investigation and topographical survey was undertaken to restore fish passage to a watercourse affected by invasive exotic vegetation growth.

## Tributary to Nichol Drain Restoration, Elora, Ontario (Geomorphologist)

An existing online pond is to be filled and the pre-existing channel restored to reduce thermal imapets to the watercourse. Water levels in an existing upstream wetland feature are to be maintained.

### Fourteen Mile Creek W2 Tributary Restoration, Oakville, Ontario (Geomorphologist)

An unstable section of the tributary was restored using a combination of pools, riffles and log drop structures to dissipate energy. The design incorporates natural materials and live woody vegetation to further control bank erosion.

### Credit River Tributary Restoration, Brampton, Ontario (Geomorphologist)

A 260 m section of concrete-lined watercourse is being restored using the principles of natural channel design. The restored watercourse will exhibit a variety of natural hydraulic habitats, such as woody debris bank treaments and riffles, functional over a range of flows. The design includes deep pools and other habitat features considered beneficial to Redside Dace, an atrisk fish species.

^{*} denotes projects completed with other firms

### Trevor Chandler M Sc

### Fluvial Systems Specialist

#### **PUBLICATIONS**

Chandler, T.J., M. Geenen, D. Bidelspach, and D. Charlton. Specialized Stream Restoration Software Tools Applied to an Unstable Urban Watercourse, Brampton, Ontario. Proceedings of the 4th International Conference on Natural Channel Systems, Mississauga, Ontario, 2010.

Chandler, T.J. Erosion Threshold Analysis of Lucky Creek, Town of Sutton, ON. *Report to Sutton Landowners Group*, 2007.

Aquafor Beech Ltd. Fluvial Processes along the Nagagami River in the Vicinity of Shekak-Nagagami Hydroelectric Generating Station. *Report for Beaver Power Corporation*, 2005.

Chandler, T.J. and M. Prent-Pushkar. Estimated Meander Belt Delineation: Credit Valley Watershed. *Report to Credit Valley Conservation*, 2005.

Chandler, T.J. and M. Prent-Pushkar. Estimated Slope Hazard Mapping 2005. *Report to Credit Valley Conservation*, 2005.

Chandler, T.J. and J. Parish. Errol Creek Restoration Study. Report to St. Clair Conservation Authority, 2001.

Chandler, T.J. and J.Parish. Fluvial Geomorphology Study of Etobicoke and Spring Creek within the grounds of Lester B. Pearson International Airport. *Report to the Greater Toronto Airports Authority*, 2000.

Chandler, T.J., and J. Parish. Sydenham River Fluvial Geomorphology Assessment. Report to Ontario Ministry of Natural Resources and St.Clair Region Conservation Authority, 2000. Anderson, P.G., C.H.J. Franklin and T.J. Chandler. Natural gas pipeline crossing of a coldwater stream: impacts and recovery. *Proceedings of the 6th International Symposium, Environmental Concerns in Right-of-Way Management*, 1997.

Chandler, T.J. and R.A. Kostaschuk. A test of selected bed-material transport models, Nottawasaga River, Ontario, Canada. *Canadian Journal of Civil Engineering.* 21:770-777, 1994.