

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2114 Site ID: D20-U/S
 Date: Apr 26/12 Start time: 11:18 End Time: 11:49
 Weather Conditions: overcast, light wind, Field Crew: S. LOHNS, S. ATKEN
 Field Notes By: S. LOHNS

Site Location

Roadside Surveys GOSHEN ALT 13 D20 KIRKTON RD east of Goshen L

UTM Co-ordinates (see table on page 2 of form)

Easting: 0452184 Northing: 4795767 Description: H₂O QUAL
 Easting: _____ Northing: _____ Description: _____
 Easting: _____ Northing: _____ Description: _____
 Easting: _____ Northing: _____ Description: _____

Surrounding Land Use

Type of Watercourse

Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Channelized <input checked="" type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>	Permanent <input checked="" type="checkbox"/>	Natural Channel <input type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>	Ephemeral <input type="checkbox"/>	_____ <input type="checkbox"/>
Other <input type="checkbox"/>			

Description: adjacent hydro line Description: straightened channel, vegetation naturalizing

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)
tile drain & roadway drainage input @ road - R u/s.

Is any portion of the water body underground or not as mapped? Y/N
 If Yes describe:

GPS Coordinate: Easting - _____ Northing - _____ Description - _____
 Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)
slightly sloping from active agricultural field (corn/crop) towards u/s. R u/s land flat - FOD adjacent hydro line.

In-Situ Water Quality

Ground Water and Seepage Indicators

WT (°C): <u>10.29</u>	AT (°C): <u>12°C</u>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
pH: <u>7.84</u>	Cond (s/cm): <u>596</u>	Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
D.O. (mg/L) <u>13.02</u>		Bubbling <input type="checkbox"/>	_____ <input type="checkbox"/>
Water Clarity: Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/>		Other <input type="checkbox"/>	
Water Colour: <u>brown</u>		Details:	

Notes: water clear but coloured deeply taken near bridge

Water Bodies Assessment Field Collection Form

Stream Morphology																		
Site Length (m): <u>2500m</u>		Bank Stability:																
Channel Dimensions		<table style="width: 100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>			Stable	Slightly unstable	Moderately unstable	Unstable	Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Stable	Slightly unstable	Moderately unstable	Unstable														
Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
Mean Wetted Width (m): <u>2.2m</u>	Mean Wetted Depth (m): <u>0.3m</u>	Description: <u>well vegetated, grasses/shrubs</u>																
Mean Bankfull Width (m): <u>5.0m</u>	Mean Bankfull Depth (m): <u>1.0m</u>																	
Mean Top of Bank Width (m): <u>8.5m</u>	Mean Top of Bank Depth (m): <u>2.0m</u>																	
Flow Description: (high or low flow conditions, stagnant, etc) <u>low flow, algal growth - mats floating</u>																		
Channel																		
Substrate (< = >)		Morphological Structure (%)																
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Debris	Description <u>Si</u>	<table border="1" style="width: 100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td></td> <td>100</td> <td></td> </tr> </table>	Pool	Riffle	Run	Flat			100		Notes: <u>straightened channel w/ little morph. structure.</u>							
Pool	Riffle	Run	Flat															
		100																
Instream Cover (%)																		
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks												
		<u>5</u>		<u>90</u>		Average Depth: (% Cover) <u>✓</u>												
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%																		
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) <u>aquatic submerged nitfoil, attached/floating algae</u>																		
Canopy Cover (% closed cover):				Types of Cover (% cover)														
100-90%	<input type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees <u>10</u>	Shrubs <u>30</u>	Man-made structures												
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses	Herbaceous	Other												
60-30%	<input checked="" type="checkbox"/>																	
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																		
Notes: (vegetation species, types of structures) <u>willow shrubs, dogwood</u>																		
Riparian Vegetation																		
Width of riparian vegetation: <u>L w/s 5m R w/s > 10m</u>																		
Description of vegetation community surrounding 30 m from watercourse: <u>down shrubs riparian, active agriculture & food</u>																		
Obstructions to Fish Passage																		
No Obstructions	<input checked="" type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier												
Description of Barrier:																		
Height of Barrier (m)			GPS Coordinates:															

Water Bodies Assessment Field Collection Form

AECOM

Date: Apr 26/2012

Land Parcel/Site ID: D20 U/C
GSH 2114

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Other General Comments Regarding the Study Area:

Channel moving slowly ~ well vegetated w/sub. veg + floating algae. Relatively good bank + riparian cover ups and very little d/s.

Downstream reach seems managed for veg. growth (cut grass laneway + hay field). no riparian shrubs

Additional UTM Coordinates:

Picture #	Description	Picture #	Description
122	page		
123	substrate / veg.		
124	overview		
125	aquatic veg		
126	algae		
127	d/s- / canopy cover		
128	substrate / veg.	see D20 GSH 211A d/s	
129	looking d/s-		
130	emergent veg / algae		

Water Bodies Assessment Field Collection Form

Study Area:

Jericho

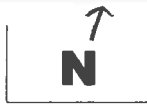
Goghen

Bluewater

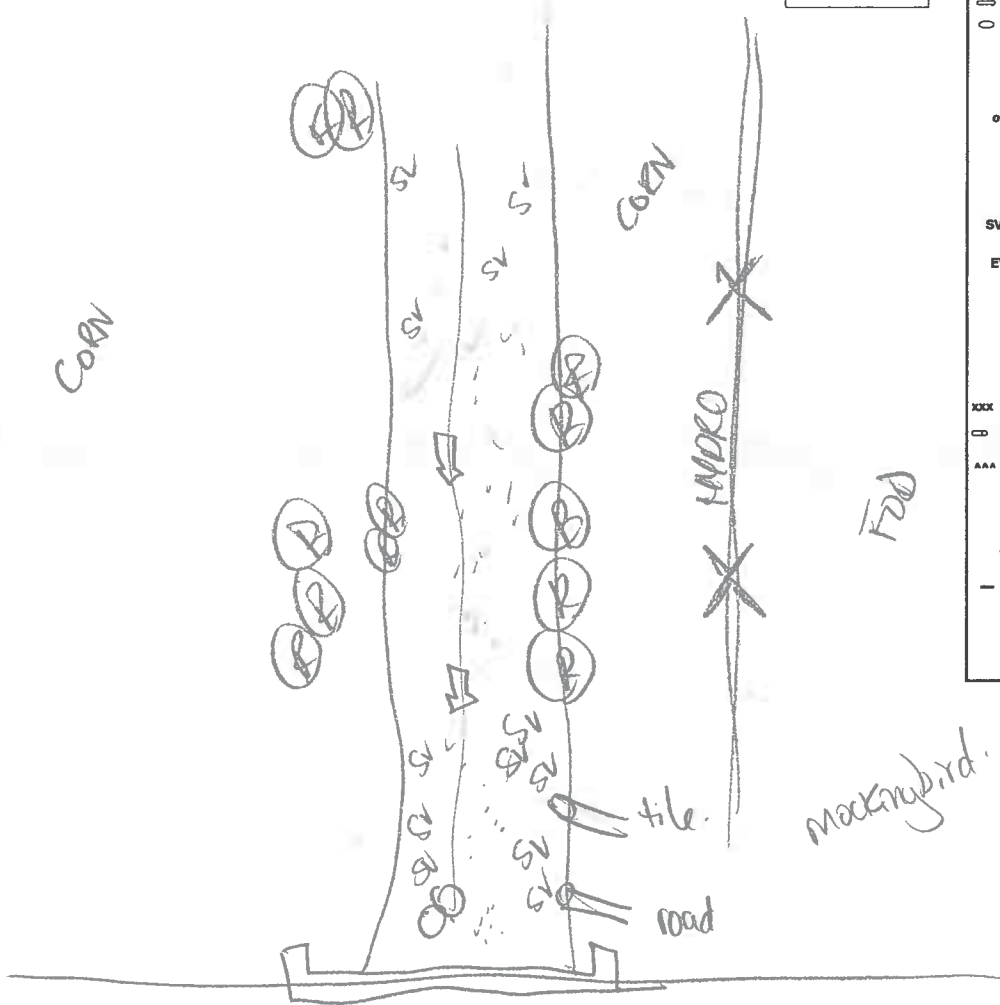
Land Parcel# GSH 2114

Site ID

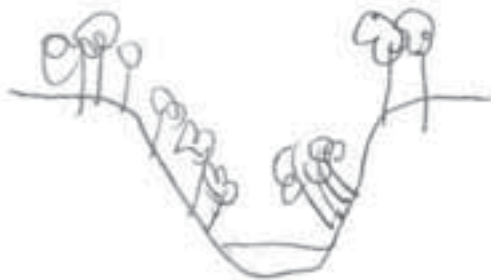
S20 W/S



LEGEND	
→	10d depth (cm) 6w width Riffle
○	Run/Glide
○	Pool
■	Island/Bar
□	Fine Substrate
##	Gravel Substrate
oOooO	Cobble/Boulder
***	Debris
CT	Cattail
SV/FV	Submerg/Float Veg
EV	Emergent Vegetation
W	Watercress
Fe	Iron Staining
	Eroded Bank
xxx	Riprap / Other Stabilization
⊖	Instream Log/Tree
***	Dam/Weir/ Obstruction
⊙	Riparian Tree
↳	Seep/Spring
—	Undercut Bank
—	Barrier to Fish Movement
-S-	Seasonal Barrier
-x-x-	Fence line
⌊	Culvert



Horizontal View of Channel



Initial QA/QC By:

L. Bentley

Date:

May 4, 2012

Technical QA/QC By:

NL

Date:

8th May 2012

Water Bodies Assessment Field Collection Form

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Page 1 of 4

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 6542124 Site ID: D20 D/S

Date: APR 26 / 2012 Start time: 11:18 End Time: 11:49

Weather Conditions: cloudy, light wind, 12°C Field Crew: SLOTTES SATTEN
Field Notes By: S. SATTEN

Site Location

GOSHEN, ALT 13 D20 KIRKTON RD ^{east of} Goshen _{Line}

UTM Co-ordinates (original on page 3 if necessary)

Easting: 0452184 Northing: 4795767 Description: @ KIRKTON

Easting: Northing: Description:

Easting: Northing: Description:

Easting: Northing: Description:

Surrounding Land Use

Type of Watercourse

Residential Meadow
Agriculture Wetland
Forest Livestock
Other
Description: hay/natural
roadway drainage @ crossing

Intermittent Channelized
Permanent Natural Channel
Ephemeral
Description: straightened channel,
generally wider than ups.

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

overland from sloping hayfield - roadway drainage

Is any portion of the water body underground or not as mapped? Y / N
If Yes describe:

GPS Coordinate: Easting - Northing - Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

gently slopes from meadow/pasture towards w/c.

In-Situ Water Quality

Bank Water and Seepage Indicators

WT (°C): 10.29 C AT (°C): 12°C
pH: 7.84 Cond (s/cm): 596
D.O. (mg/L) 13.02
Water Clarity: Clear Turbid

Watercress Bank Seepage
Iron Staining None
Bubbling
Other

Water Colour: brown

Details: mats of watercress

Notes:

Water Bodies Assessment Field Collection Form

Stream Morphology																				
Site Length (m): <u>250m</u>			Bank Stability:																	
Channel Dimensions			<table style="width: 100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>				Stable	Slightly unstable	Moderately unstable	Unstable	Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Stable	Slightly unstable	Moderately unstable	Unstable																
Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Mean Wetted Width (m): <u>3.0m</u>	Mean Wetted Depth (m): <u>0.4m</u>	Description: <u>banks vegetated + stable</u>																		
Mean Bankfull Width (m): <u>3.5m</u>	Mean Bankfull Depth (m): <u>0.8m</u>																			
Mean Top of Bank Width (m): <u>7.0m</u>	Mean Top of Bank Depth (m): <u>3.0m</u>																			
Flow Description: (high or low flow conditions, stagnant, etc) <u>low flow but visibly moving</u>																				
Habitat																				
Substrate (<=>)		Description		Morphological Structure (%)																
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus	<u>Si >> Bo.</u>		<table border="1" style="width: 100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td></td> <td><u>100%</u></td> <td></td> </tr> </table>		Pool	Riffle	Run	Flat			<u>100%</u>		Notes:							
Pool	Riffle	Run	Flat																	
		<u>100%</u>																		
Instream Cover (%)																				
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None															
		<u>5</u>		<u>70</u>																
Average Depth: _____ (% Cover)																				
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%																				
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) <u>floating & attached algae blooms; watercress</u>																				
Canopy Cover (% closed cover):			Types of Cover (% cover)																	
100-90%	<input type="checkbox"/>	30-1%	<input checked="" type="checkbox"/>	Trees	Shrubs <input checked="" type="checkbox"/>															
90-60%	<input type="checkbox"/>	0%	<input checked="" type="checkbox"/>	Grasses _____	Herbaceous _____															
60-30%	<input type="checkbox"/>				Man-made structures _____ Other _____															
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																				
Notes: (vegetation species, types of structures) <u>sparse small willow shrubs.</u>																				
Riparian Vegetation																				
Width of riparian vegetation: <u>L w/s 5m R w/s wooded</u>																				
Description of vegetation community surrounding 30 m from watercourse: <u>FOD & hay field under hydro line.</u>																				
Obstructions to Fish Passage																				
No Obstructions	<input checked="" type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>															
Description of Barrier:																				
Height of Barrier (m)			GPS Coordinates:																	

Water Bodies Assessment Field Collection Form

AECOM

Date: APR 26/2012

Land Parcel/Site ID:

D20 D/S
454 2124

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Other General Comments Regarding the Study Area:

Watercourse runs northwesterly under a hydro transmission line and is bordered on the east by deciduous forest and on the west by hay to the south and row crop to the north. Large mats of vegetation (watercress) slow the flow of water in the d/s reach, while the u/s

Additional UTM Coordinates:

reach is well shaded by overhanging shrubs + trees.

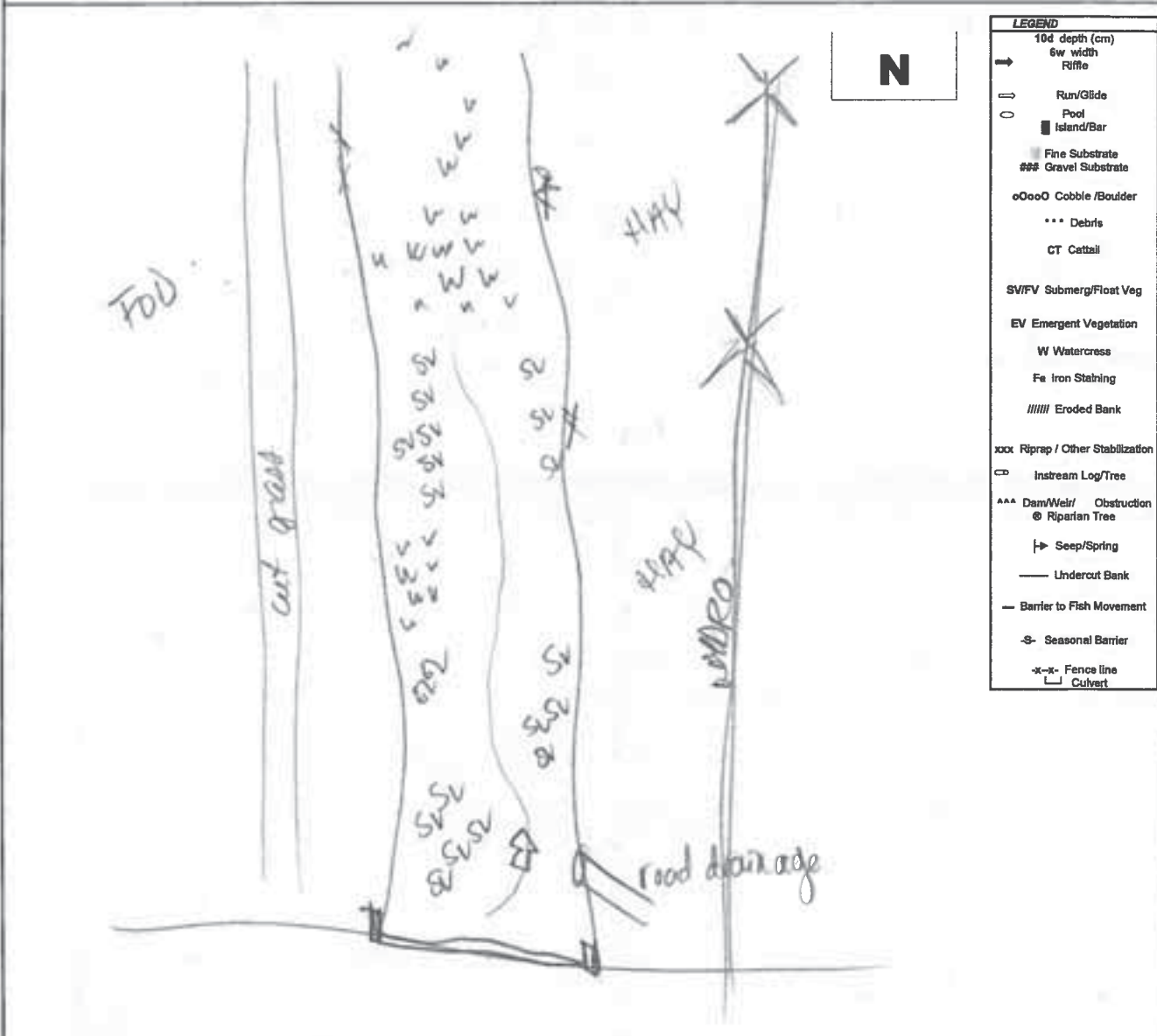
Picture #	Description	Picture #	Description
1	d/s canopy cover	(IMG 2907)	
2	substrate (veg)	(IMG 2908)	
3	looking d/s	(IMG 2909)	
4	emergent veg + algae	(IMG 2910)	

Water Bodies Assessment Field Collection Form

AECOM

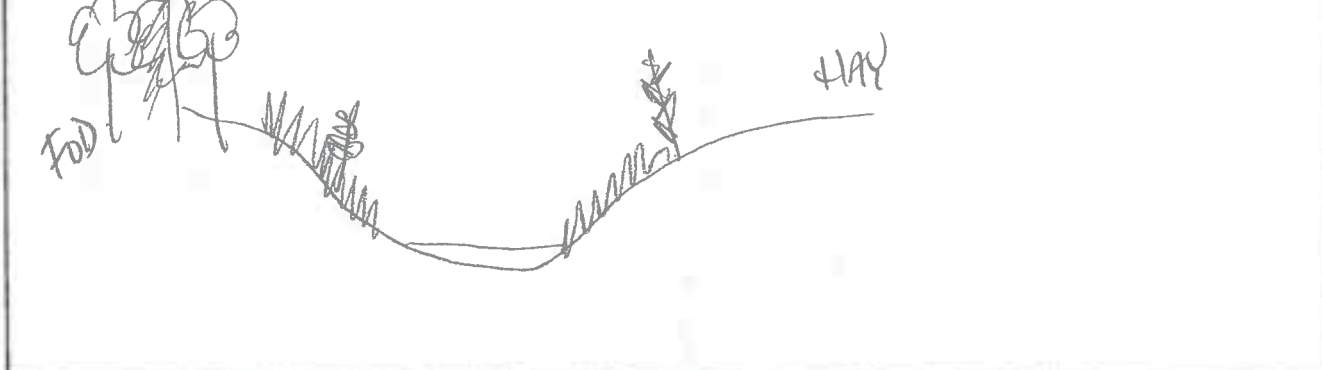
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Study Area: Jericho Goshen Bluewater Land Parcel# 6542124 Site ID D20 D/S



LEGEND	
→	10d depth (cm) 6w width Riffle
⇄	Run/Glide
○	Pool
■	Island/Bar
■	Fine Substrate
##	Gravel Substrate
o o o o	Cobble/Boulder
***	Debris
CT	Cattail
SV/FV	Submerg/Float Veg
EV	Emergent Vegetation
W	Watercress
Fe	Iron Staining
	Eroded Bank
xxx	Riprap / Other Stabilization
CD	Instream Log/Tree
***	Dam/Welr/ Obstruction
⊙	Riparian Tree
↳	Seep/Spring
—	Undercut Bank
-S-	Barrier to Fish Movement
-S-	Seasonal Barrier
-x-x-	Fence line
┌	Culvert

Horizontal View of Channel



Initial QA/QC By: L Bentley Date: May 4, 2012 Technical QA/QC By: NL Date: May 8th 2012

Water Bodies Assessment Field Collection Form

AECOM		Page 1 of 4	
General Information			
Study Area: Jericho <u>Goshen</u>		Bluewater Land Parcel# <u>2480/2867</u>	Site ID: <u>D23 North</u>
Date: <u>May 10 / 12</u>		Start time: <u>14:30</u>	End Time: <u>15:15</u>
Weather Conditions: <u>Sunny, 12°C</u>		Field Crew: <u>C. Boras, J. Epp</u>	
		Field Notes By: <u>C. Boras</u>	
Site Location			
<u>Airport Line, North of Crediton</u>			
UTM Co-ordinates (continue on page 3 if necessary)			
Easting: <u>459633</u>	Northing: <u>4795751</u>	Description: <u>D23N start</u>	
Easting: <u>459538</u>	Northing: <u>4795448</u>	Description: <u>D23N end</u>	
Easting: _____	Northing: _____	Description: _____	
Easting: _____	Northing: _____	Description: _____	
Surrounding Landuse		Type of Watercourse	
Residential <input checked="" type="checkbox"/>	Meadow <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Channelized <input checked="" type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>	Permanent <input checked="" type="checkbox"/>	Natural Channel <input type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>	Ephemeral <input type="checkbox"/>	_____ <input type="checkbox"/>
Other _____		Description: _____	
Description: <u>planted field - possibly corn.</u>		<u>Channelized</u>	
Notes: (Include any inputs into the system i.e. tile drainage, seepages, overland flow)			
<u>tile drains observed throughout - 1 rowing</u>			
Is any portion of the water body underground or not as mapped? Y / <u>N</u>			
If Yes describe:			
/ / /			
GPS Coordinate: Easting -	Northing -	Description -	
Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)			
<u>flat</u>			
In-Situ Water Quality		Ground Water and Seepage Indicators	
WT (°C): <u>20°C</u>	AT (°C): <u>12°C</u>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
pH: _____	Cond (s/cm): _____	Iron Staining <input type="checkbox"/>	None <input type="checkbox"/>
D.O. (mg/L) _____		Bubbling <input type="checkbox"/>	<u>water speedwell</u> <input checked="" type="checkbox"/>
Water Clarity: Clear <input checked="" type="checkbox"/>	Turbid <input type="checkbox"/>	Other <input type="checkbox"/>	
Water Colour: <u>n/a</u>		Details: <u>completely mats the watercourse until it hits the road.</u>	
Notes: <u>w/q meter not working</u>			

64-17
53

Water Bodies Assessment Field Collection Form

Stream Morphology				
Site Length (m): 200m			Bank Stability:	
Channel Dimensions			Stable	Slightly unstable
Mean Wetted Width (m): 0.9	Mean Wetted Depth (m): 1.1		Left Bank <input checked="" type="checkbox"/>	<input type="checkbox"/>
Mean Bankfull Width (m): 1.3	Mean Bankfull Depth (m): 0.35		Right Bank <input checked="" type="checkbox"/>	<input type="checkbox"/>
Mean Top of Bank Width (m): 3	Mean Top of Bank Depth (m): 1.75		Description: well vegetated	
Flow Description: (high or low flow conditions, stagnant, etc) no flow at start of watercourse, slow flow in ditch along road				
Habitat				
Substrate (<=>)		Morphological Structure (%)		
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus	Description <i>Si, Cl = mk</i>	Pool	Riffle	Run
		5		95
		Notes: 2 large pools at road culvert		
Instream Cover (%) 95				
Other	Woody Debrls	Boulders	Cobble	Aquatic Vegetation*
/	1	4	/	90
Average Depth: /				
(% Cover) /				
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%				
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) <i>water speedwell, algae (attached + filamentous) > grasses > pondweed</i>				
Canopy Cover (% closed cover):		Types of Cover (% cover)		
100-90% <input type="checkbox"/>	30-1% <input checked="" type="checkbox"/>	Trees	Shrubs 100	Man-made structures
90-60% <input type="checkbox"/>	0% <input type="checkbox"/>	Grasses	Herbaceous	Other
60-30% <input type="checkbox"/>				
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%				
Notes: (vegetation species, types of structures) <i>could not ID species</i>				
Riparian Vegetation				
Width of riparian vegetation: < 1m - grasses, herbaceous				
Description of vegetation community surrounding 30 m from watercourse: <i>agri. crop fields + one small section of residential</i>				
Obstructions to Fish Passage				
No Obstructions <input checked="" type="checkbox"/>	Man-Made <input type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>	
Description of Barrier:				
Height of Barrier (m) /				
GPS Coordinates: /				

Water Bodies Assessment Field Collection Form

AECOM

Date: May 10 / 12

Land Parcel/Site ID: 023 north
2480 / 2867

Page 3 of 4

Other General Comments Regarding the Study Area:

- watercourse is most likely buried and then pops out north of house
Mapping is accurate
 - Chimney crayfish homes noted at start of watercourse
 - schools of cyprinids observed along road side and pool at culvert
- Watercourse straight channelized - water speed well most entire watercourse until it reaches the road. It starts flowing and has high instream cover from algae, grasses, speedwell. Substrate silt.

Additional UTM Coordinates:

Photo log

Picture #	Description	Picture #	Description
1-2	Start of water course		
3	tile drain at start		
4	water course down/s of tile drain		
5-7	Chimney Crayfish homes		
8	water speedwell		
9-10	overview		
11-12	red speedwell		
13-14	overview		
15	culvert to south side		
16-20	S side overview		
21-22	culvert at road		
23-24	west side of Airport Ln.		

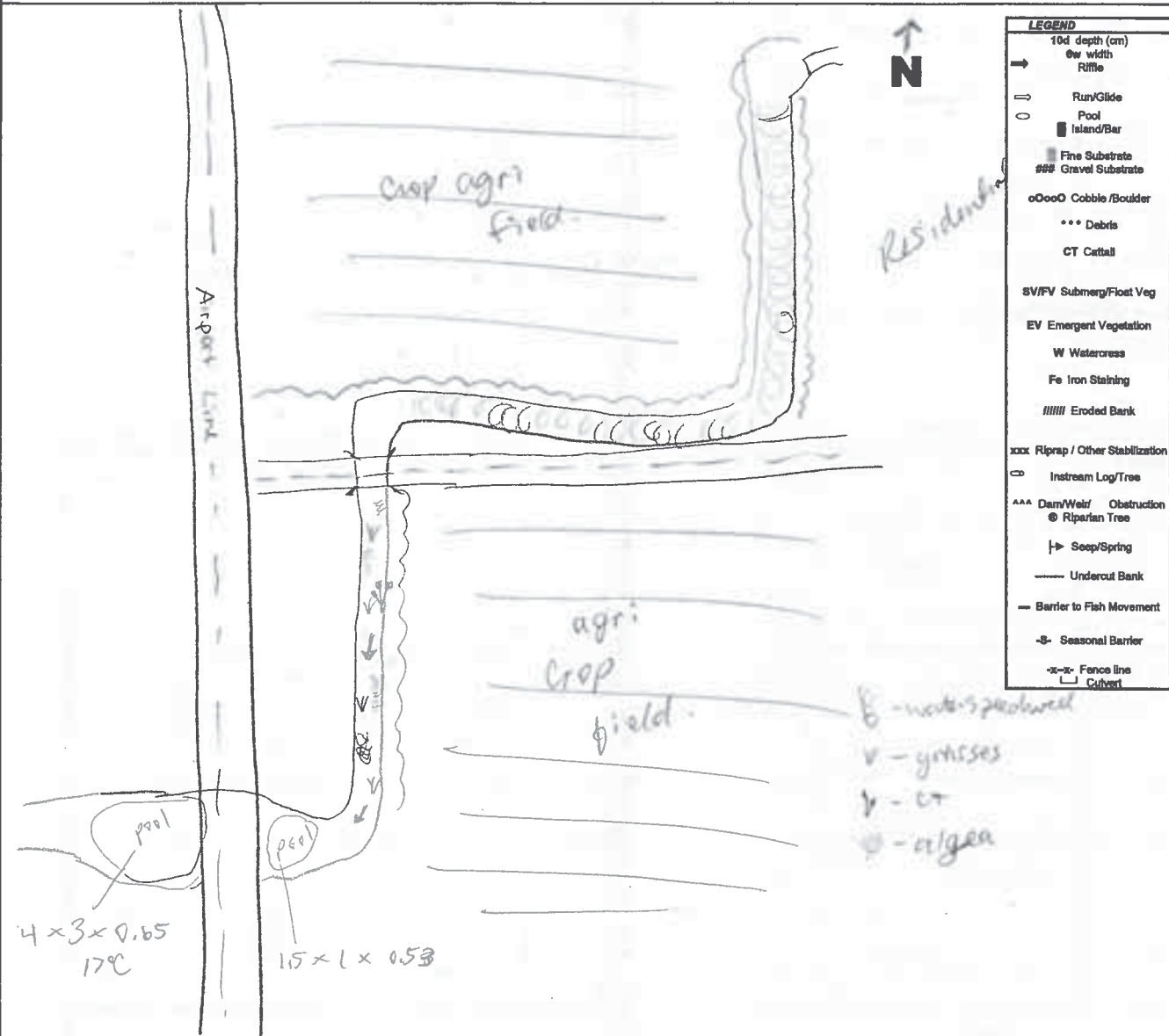
Water Bodies Assessment Field Collection Form

AECOM

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Watercourse Sketch

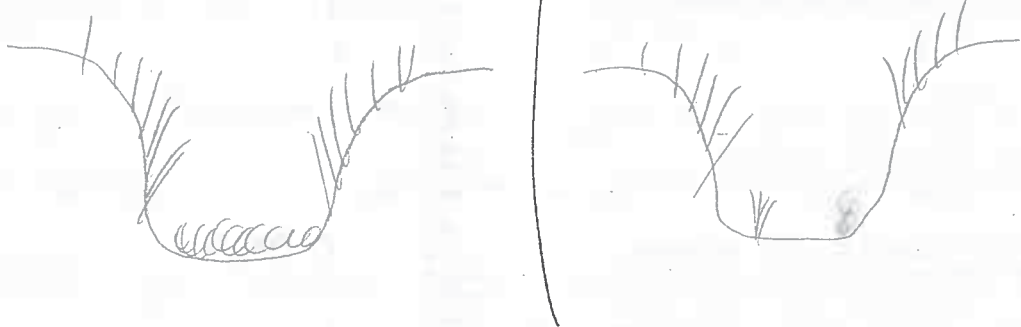
Study Area: Jericho Goshen Bluewater Land Parcel# 2480/2867 Site ID D23 North



Horizontal View of Channel

residential / crop

Roadside



Initial QA/QC By: L. Bentley

Date: May 16, 2012

Technical QA/QC By:

Date:

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# ASH 2933/ Site ID: D23

Date: Time 22/12 Start time: 12:30 ²⁹²⁸ End Time: 13:30

Weather Conditions:

Sunny, 20°C

Field Crew: C. Boros, J. BPP

Field Notes By: C. Boros

ASA
2927

Site Location

Credition Ln + Airport Road.

UTM Co-ordinates (continue on page 3 if necessary)

Easting: 459462 Northing: 4794864 Description: D23A

Easting: 459475 Northing: 4795113 Description: D23END

Easting: _____ Northing: _____ Description: _____

Easting: _____ Northing: _____ Description: _____

- Surrounding Landuse
- Residential
 - Agriculture
 - Forest
 - Other
 - Meadow
 - Wetland
 - Livestock

- Type of Watercourse
- Intermittent
 - Permanent
 - Ephemeral
 - Channelized
 - Natural Channel

Description:

agri field on east - soy
Residential on west

Description:

historically channelized but
naturalizing

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

Is any portion of the water body underground or not as mapped? Y / N
If Yes describe:

GPS Coordinate: Easting - _____ Northing - _____ Description - _____

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): 19.6 AT (°C): 20°C
pH: 7.86 Cond (µs/cm): 670
D.O. (mg/L): 6.62
Water Clarity: Clear Turbid

Water Colour: n/a

Notes: small pool north of convergence
area, water = 0.10m

Ground Water and Seepage Indicators

Watercress Bank Seepage
Iron Staining None
Bubbling water
Other Speedwell

Details:

small clumps throughout

Water Bodies Assessment Field Collection Form

Stream Morphology																		
Site Length (m): <u>280m</u>		Bank Stability:																
Channel Dimensions		<table style="width:100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>			Stable	Slightly unstable	Moderately unstable	Unstable	Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Stable	Slightly unstable	Moderately unstable	Unstable														
Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
Mean Wetted Width (m): <u>1m</u>	Mean Wetted Depth (m): <u>0.12</u>	Description: <u>some evidence of erosion</u>																
Mean Bankfull Width (m): <u>1.2</u>	Mean Bankfull Depth (m): <u>0.25</u>																	
Mean Top of Bank Width (m): <u>3</u>	Mean Top of Bank Depth (m): <u>2</u>	Flow Description: (high or low flow conditions, stagnant, etc)																
Habitat																		
Substrate (<=>)		Morphological Structure (%)																
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus Description: <u>Si=gr=sa > co</u>		<table border="1" style="width:100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td><u>10</u></td> <td><u>15</u></td> <td><u>10</u></td> <td><u>65</u></td> </tr> </table>		Pool	Riffle	Run	Flat	<u>10</u>	<u>15</u>	<u>10</u>	<u>65</u>							
Pool	Riffle	Run	Flat															
<u>10</u>	<u>15</u>	<u>10</u>	<u>65</u>															
Instream Cover (%) <u>70</u>		Notes:																
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks												
<u>/</u>	<u>10</u>	<u>10</u>	<u>35</u>	<u>15</u>	<u>/</u>	Average Depth: (% Cover) <u>/</u>												
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%																		
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)																		
<u>algae - attached > grasses</u>																		
Canopy Cover (% closed cover):			Types of Cover (% cover)															
100-90%	<input type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees	<u>80</u>	Shrubs	<u>15</u>	Man-made structures										
90-60%	<input checked="" type="checkbox"/>	0%	<input type="checkbox"/>	Grasses	<u>5</u>	Herbaceous		Other										
60-30%	<input type="checkbox"/>																	
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																		
Notes: (vegetation species, types of structures)																		
<u>haw thorn, black walnut, dogwood</u>																		
Riparian Vegetation																		
Width and Description of riparian vegetation:	LB - <u>23m - meadow w trees</u>	RB - <u>~10m - meadow w trees</u>																
Overhanging Vegetation Present	<u>81%</u>	% Overhanging Vegetation:	<u>7</u>															
Description of Overhanging Vegetation:	<u>some dogwood overhanging - covers entire stream width</u>																	
Obstructions to Fish Passage																		
None Observed	<input checked="" type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier	<input type="checkbox"/>											
Description of Barrier:																		
Height of Barrier (m)	GPS Coordinates:																	

Water Bodies Assessment Field Collection Form

AECOM

Date: June 22/12

Land Parcel/Site ID: D23 - GSH2933/2927

Page 3 of 4

Other General Comments Regarding the Study Area:

- minnows observed, stickleback
 → Main channel assessed
 Channelized stream that is naturalizing. Canopy cover dense due to large trees. small riffle, run, pool sections.

D23 Branch - previously surveyed east 100m → this visit confirmed west 100m is similar in nature
 Additional UTM Coordinates: to update other assessment field sheets.

G75H2927 → water course looks similar for 15m

ASA

Photo log			
Picture #	Description	Picture #	Description
1a	sheet		
1b	site overview		
2-9	Channel overview starting from south end		
10	convergence area		
11-14	east branch		
15-32	channel overview walking to north branch		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

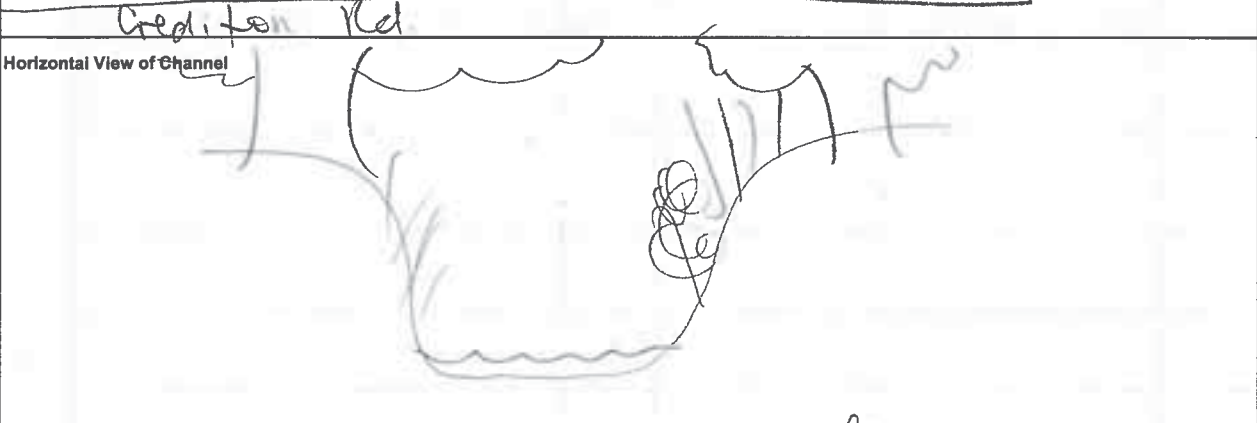
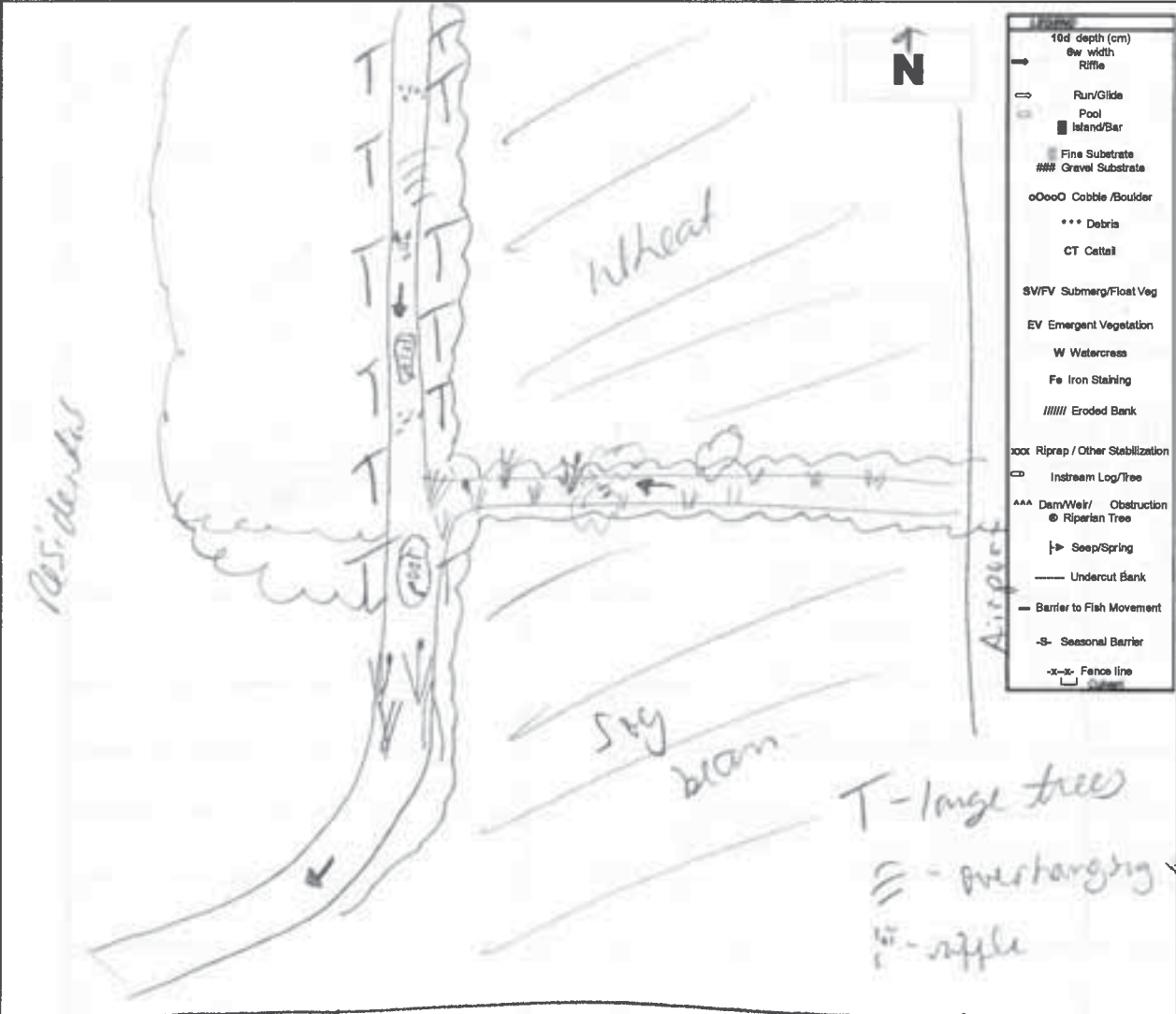
Bluewater

Land Parcel#

GOSH 2933/
2928

Site ID

023



Initial QA/QC By: *L. Bentley*

Date: *June 26, 2012*

Technical QA/QC By: *Stutson*

Date: *July 10/12*

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 65H2927 Site ID: 023
 Date: June 22/12 Start time: 13:30 End Time: 13:45
 Weather Conditions: Sunny, 20°C Field Crew: C. Boros, J. Epp
 Field Notes By: C. Boros

Site Location

East side of Airport line, north of Creaton Road Roadside Survey

UTM Co-ordinates (continue on page 3 if necessary)

Easting: 459537 Northing: 4795449 Description: 023 65H2927
 Easting: Northing: Description:
 Easting: Northing: Description:
 Easting: Northing: Description:

Surrounding Landuse

Residential Meadow
 Agriculture Wetland
 Forest Livestock
 Other

Type of Watercourse

Intermittent Channelized
 Permanent Natural Channel
 Ephemeral

Description:

corn + soy beans

Description:

straight

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

none observed

Is any portion of the water body underground or not as mapped? Y / N
 If Yes describe:

GPS Coordinate: Easting - Northing - Description -
 Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): AT (°C):
 pH: Cond (s/cm):
 D.O. (mg/L)
 Water Clarity: Clear Turbid
 Water Colour:

Ground Water and Seepage Indicators

Watercress Bank Seepage
 Iron Staining None
 Bubbling
 Other

Details:

Notes:

Water Bodies Assessment Field Collection Form

Stream Morphology														
Site Length (m):				Bank Stability:										
Channel Dimensions Mean Wetted Width (m): _____ Mean Wetted Depth (m): _____ Mean Bankfull Width (m): _____ Mean Bankfull Depth (m): _____ Mean Top of Bank Width (m): _____ Mean Top of Bank Depth (m): _____				Stable Slightly unstable Moderately unstable Unstable Left Bank <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Right Bank <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>										
Description:														
Flow Description: (high or low flow conditions, stagnant, etc)														
Habitat														
Substrate (< = >) Bo - Boulder Description Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus				Morphological Structure (%) <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			Pool	Riffle	Run	Flat				
Pool	Riffle	Run	Flat											
Notes:														
Instream Cover (%)														
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks								
						Average Depth: (% Cover)								
Note: Low = 0 - 30% ; Moderate = 30 - 75% ; High = 75 - 100% *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)														
Canopy Cover (% closed cover):				Types of Cover (% cover)										
100-90%	<input type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees	Shrubs	Man-made structures								
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses	Herbaceous	Other								
60-30%	<input type="checkbox"/>													
Note: Low = 0 - 30% ; Moderate = 30 - 60% ; High = 60 - 100% Notes: (vegetation species, types of structures)														
Riparian Vegetation														
Width and Description of riparian vegetation:			LB - _____ RB - _____											
Overhanging Vegetation Present Y / N			% Overhanging Vegetation: _____											
Description of Overhanging Vegetation: _____														
Obstructions to Fish Passage														
None Observed	<input type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier								
Description of Barrier: _____														
Height of Barrier (m)			GPS Coordinates: _____											

Water Bodies Assessment Field Collection Form

AECOM

Date: *June 22/12*

Land Parcel/Site ID:

*D23-
G8H2927*

Page 3 of 4

Other General Comments Regarding the Study Area:

All GSH 2867. year details

Additional UTM Coordinates:

Photo log			
Picture #	Description	Picture #	Description
<i>1-3</i>	<i>east side.</i>		
<i>4-6</i>	<i>west side.</i>		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# GSH2927 Site ID D23

N

LEGEND	
→	10d depth (cm) @w width Riffle
⇨	Run/Glide
□	Pool
■	Island/Bar
•	Fine Substrate
##	Gravel Substrate
oOooO	Cobble/Boulder
***	Debris
CT	Cattail
SV/FV	Submerg/Float Veg
EV	Emergent Vegetation
W	Watercress
Fe	Iron Staining
	Eroded Bank
xxx	Riprap / Other Stabilization
☐	Instream Log/Tree
AAA	Dem/Weir/ Obstruction
⊙	Riparian Tree
>	Seep/Spring
—	Undercut Bank
—	Barrier to Fish Movement
-S-	Seasonal Barrier
-x-x-	Fence line
□	Chart

Horizontal View of Channel

Initial QA/QC By: L. Bentley

Date: June 26, 2012

Technical QA/QC By: Stutker

Date: July 10/12

Water Bodies Assessment Field Collection Form

AECOM

Page 1 of 4

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2770/3130 Site ID: D26
 Date: May 1/12 Start time: 14:45 End Time: 15:25

Weather Conditions: Cloudy Field Crew: C. Boros, J. Harnden
 Field Notes By: C. Boros

Site Location

Crediton Rd, East of McTaggart Line

UTM Co-ordinates (continue on page 3 if necessary)

Easting: <u>0466025</u>	Northing: <u>4795748</u>	Description: <u>D26N - Start</u>
Easting: <u>0466040</u>	Northing: <u>4795566</u>	Description: <u>D26S. end.</u>
Easting:	Northing:	Description:
Easting:	Northing:	Description:

Surrounding Landuse Residential <input type="checkbox"/> Meadow <input type="checkbox"/> Agriculture <input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Forest <input type="checkbox"/> Livestock <input type="checkbox"/> Other <input type="checkbox"/>		Type of Watercourse Intermittent <input type="checkbox"/> Channelized <input checked="" type="checkbox"/> Permanent <input checked="" type="checkbox"/> Natural Channel <input type="checkbox"/> Ephemeral <input type="checkbox"/>
Description: <u>Crop fields</u>		Description: <u>potentially maintained channel</u>

Notes: (Include any inputs into the system i.e. tile drainage, seepages, overland flow)

tile drain inputs observed - v slow flow

Is any portion of the water body underground or not as mapped? Y / (N)
 If Yes describe:

GPS Coordinate: Easting - Northing - Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): <u>11.27</u>	AT (°C): <u>17.0</u>
pH: <u>7.92</u>	Cond (µs/cm): <u>485</u>
D.O. (mg/L) <u>15.9</u>	
Water Clarity: Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/>	

Water Colour: n/a

Notes:

algae observed

Ground Water and Seepage Indicators

Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
Bubbling <input type="checkbox"/>	
Other <input type="checkbox"/>	

Details:

Water Bodies Assessment Field Collection Form

AECOM

Date: May 1 / 12

Land Parcel/Site ID: 026
GSH 2770/3130

Page 3 of 4

Other General Comments Regarding the Study Area:

straight channelized stream, no canopy cover, low instream cover, soft bottom

- no bird nests observed under bridge
- red winged blackbird + robin observed

Additional UTM Coordinates:

Photo log

Picture #	Description	Picture #	Description
1a 1b	Sheet overview looking North		
2	overview looking South		
3	looking South to bridge		
4,5	Substrate		
6	Tile drain N side		
7,8	under bridge		
9	watercourse under bridge		
10	tile drain S side		
11	S side channel.		

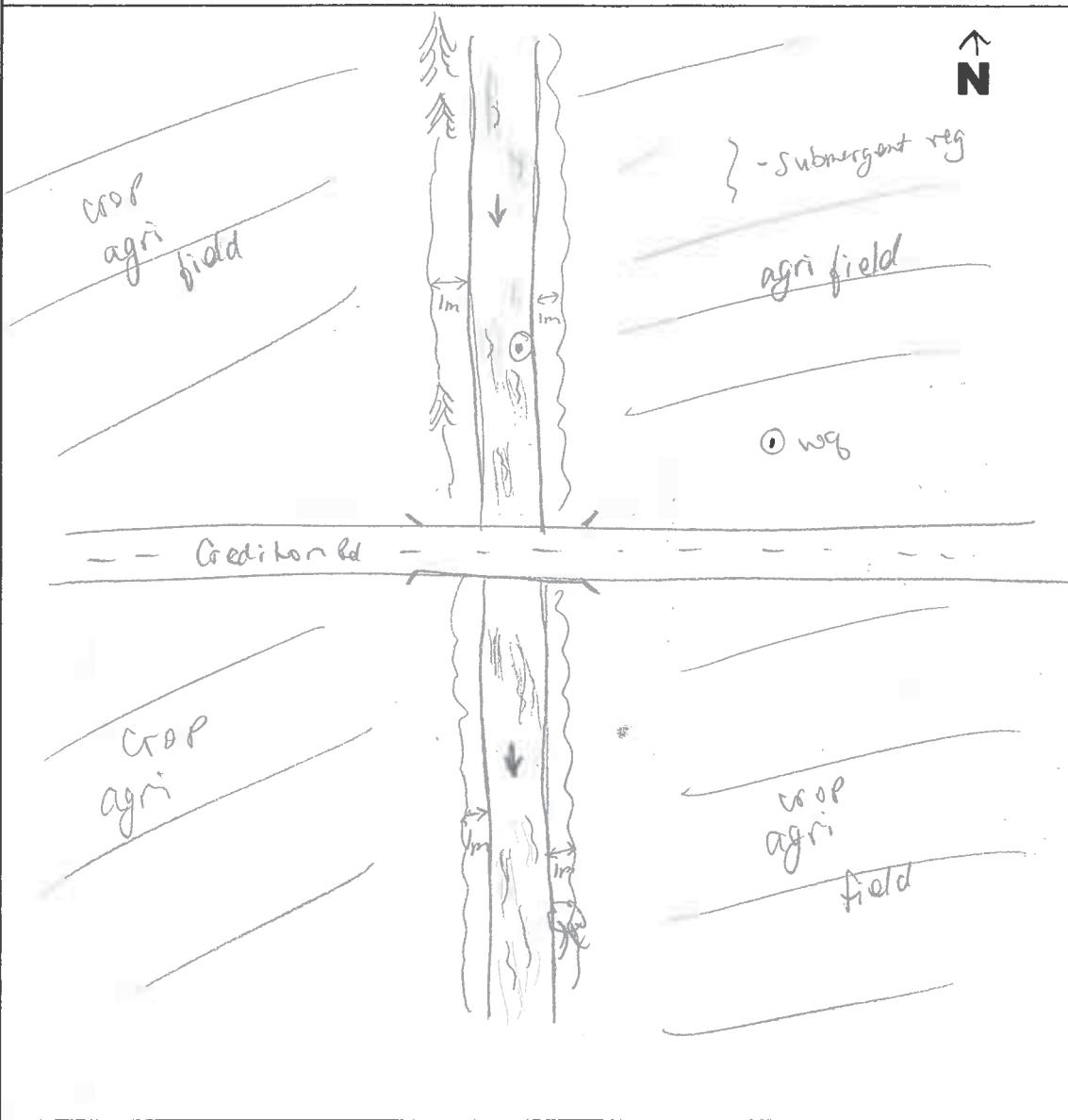
Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# 2770/3130 Site ID 026



Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: May 8, 2012

Technical QA/QC By: Sathen

Date: May 18/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2769 / 2768 Site ID: 027

Date: May 9 / 12 Start time: 14:10 End Time: 15:40

Weather Conditions: Cloudy, 14°C
Field Crew: C. Burns, J. Carr
Field Notes By: C. Burns

Site Location

Crediton Rd, West of Horn Ln.

Roadside Survey
for ASN 2768

UTM Co-ordinates (continue on page 3 if necessary)

Easting: 468851 Northing: 4795971 Description: 027 start

Easting: 468380 Northing: 4796066 Description: 027 wq

Easting: 468699 Northing: 4796200 Description: 027 end

Easting: Northing: Description:

Surrounding Landuse

- | | |
|---|------------------------------------|
| Residential <input type="checkbox"/> | Meadow <input type="checkbox"/> |
| Agriculture <input checked="" type="checkbox"/> | Wetland <input type="checkbox"/> |
| Forest <input type="checkbox"/> | Livestock <input type="checkbox"/> |
| Other <input type="checkbox"/> | |

Description: ploughed fields

Type of Watercourse

- | | |
|---|---|
| Intermittent <input type="checkbox"/> | Channelized <input checked="" type="checkbox"/> |
| Permanent <input checked="" type="checkbox"/> | Natural Channel <input checked="" type="checkbox"/> |
| Ephemeral <input type="checkbox"/> | |

Description: appears to be natural in forest area and naturalizing in channel adjacent to agri fields

Notes: (Include any inputs into the system i.e. tile drainage, seepages, overland flow)

tile drain inputs observed - no flowings, 4 not

Is any portion of the water body underground or not as mapped? Y (N)

If Yes describe:

GPS Coordinate: Easting - Northing - Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): 12.90	AT (°C): 14
pH: 8.17	Cond (µs/cm): 513
D.O. (mg/L) 23.69	
Water Clarity: Clear <input checked="" type="checkbox"/>	Turbid <input type="checkbox"/>

Water Colour: n/a

Notes: wq taken at edge of pool.

Ground Water and Seepage Indicators

- | | |
|--|---------------------------------------|
| Watercress <input checked="" type="checkbox"/> | Bank Seepage <input type="checkbox"/> |
| Iron Staining <input type="checkbox"/> | None <input type="checkbox"/> |
| Bubbling <input type="checkbox"/> | |
| Other <input type="checkbox"/> | |

Details: Sporadic, no mats or clumps
→ stopped seeing it close to forest

Water Bodies Assessment Field Collection Form

Stream Morphology																				
Site Length (m): <u>300m</u>			Bank Stability:																	
Channel Dimensions			<table style="width:100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>				Stable	Slightly unstable	Moderately unstable	Unstable	Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Stable	Slightly unstable	Moderately unstable	Unstable																
Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Mean Wetted Width (m): <u>1m</u>	Mean Wetted Depth (m): <u>0.18</u>	Description: <u>evidence of old slumping (e has happened in previous 3-5 years) but no evidence of new erosion or slumping</u> <u>Banks well vegetated</u>																		
Mean Bankfull Width (m): <u>2m</u>	Mean Bankfull Depth (m): <u>0.60</u>																			
Mean Top of Bank Width (m): <u>4</u>	Mean Top of Bank Depth (m): <u>2.5</u>																			
Flow Description: (high or low flow conditions, stagnant, etc) <u>slow flow</u>																				
Habitat																				
Substrate (<=>)			Morphological Structure (%)																	
Description Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus			<table border="1" style="width:100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td><u>10</u></td> <td><u>1</u></td> <td><u>1</u></td> <td><u>90</u></td> </tr> </table>			Pool	Riffle	Run	Flat	<u>10</u>	<u>1</u>	<u>1</u>	<u>90</u>							
Pool	Riffle	Run	Flat																	
<u>10</u>	<u>1</u>	<u>1</u>	<u>90</u>																	
<u>Sa > gr > Co > silt > cl.</u>			Notes: <u>pools a result of debris jam</u> <u>↳ waterfall/riffle area also present due to debris jam</u>																	
Instream Cover (%) <u>90</u>																				
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks														
	<u>TP</u>	<u>/</u>	<u>15</u>	<u>75</u>	<u>/</u>	Average Depth: (% Cover) <u>3</u>														
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%																				
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) <u>attached algae (submergent) >> grasses, reed, filamentous algae, watercress</u>																				
Canopy Cover (% closed cover):			Types of Cover (% cover)																	
100-90% <input type="checkbox"/>	30-1% <input type="checkbox"/>	Trees <u>70</u>	Shrubs <u>20</u>	Man-made structures																
90-60% <input checked="" type="checkbox"/>	0% <input type="checkbox"/>	Grasses <u>10</u>	Herbaceous	Other																
60-30% <input checked="" type="checkbox"/>																				
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																				
Notes: (vegetation species, types of structures) <u>Elms, dogwood, buckthorn</u>																				
Riparian Vegetation																				
Width of riparian vegetation: <u>2m - grasses > trees > shrubs</u>																				
Description of vegetation community surrounding 30 m from watercourse: <u>agri. field</u>																				
Obstructions to Fish Passage																				
No Obstructions <input checked="" type="checkbox"/>	Man-Made <input type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>																	
Description of Barrier:																				
Height of Barrier (m)			GPS Coordinates:																	

Water Bodies Assessment Field Collection Form

AECOM

Date: *May 9/12*

Land Parcel/Site ID: *027 GSH 2769/2768*

Page 3 of 4

Other General Comments Regarding the Study Area:

- schools of minnow observed
- muskrat observed at wq station
- onsite survey for north side of watercourse, roadside south
- watercourse straight channelized with high instream cover (algae) and mud canopy cover (grass, trees, shrubs). Substrate cobbly, gravelly sand. It starts to flow and meander more naturally as it enters and goes through the forest area - assessment not completed in forest

Additional UTM Coordinates:

Photo log

Picture #	Description	Picture #	Description
<i>1a 1-3</i>	<i>Sheet Roadside Survey downstream @ of culvert</i>		
<i>4</i>	<i>Site overview</i>		
<i>5</i>	<i>North Culvert @ up/s side</i>		
<i>6-9</i>	<i>channel overview</i>		
<i>10</i>	<i>log jam</i>		
<i>11-18</i>	<i>Channel overview</i>		
<i>19-20</i>	<i>Channel entering forest area</i>		

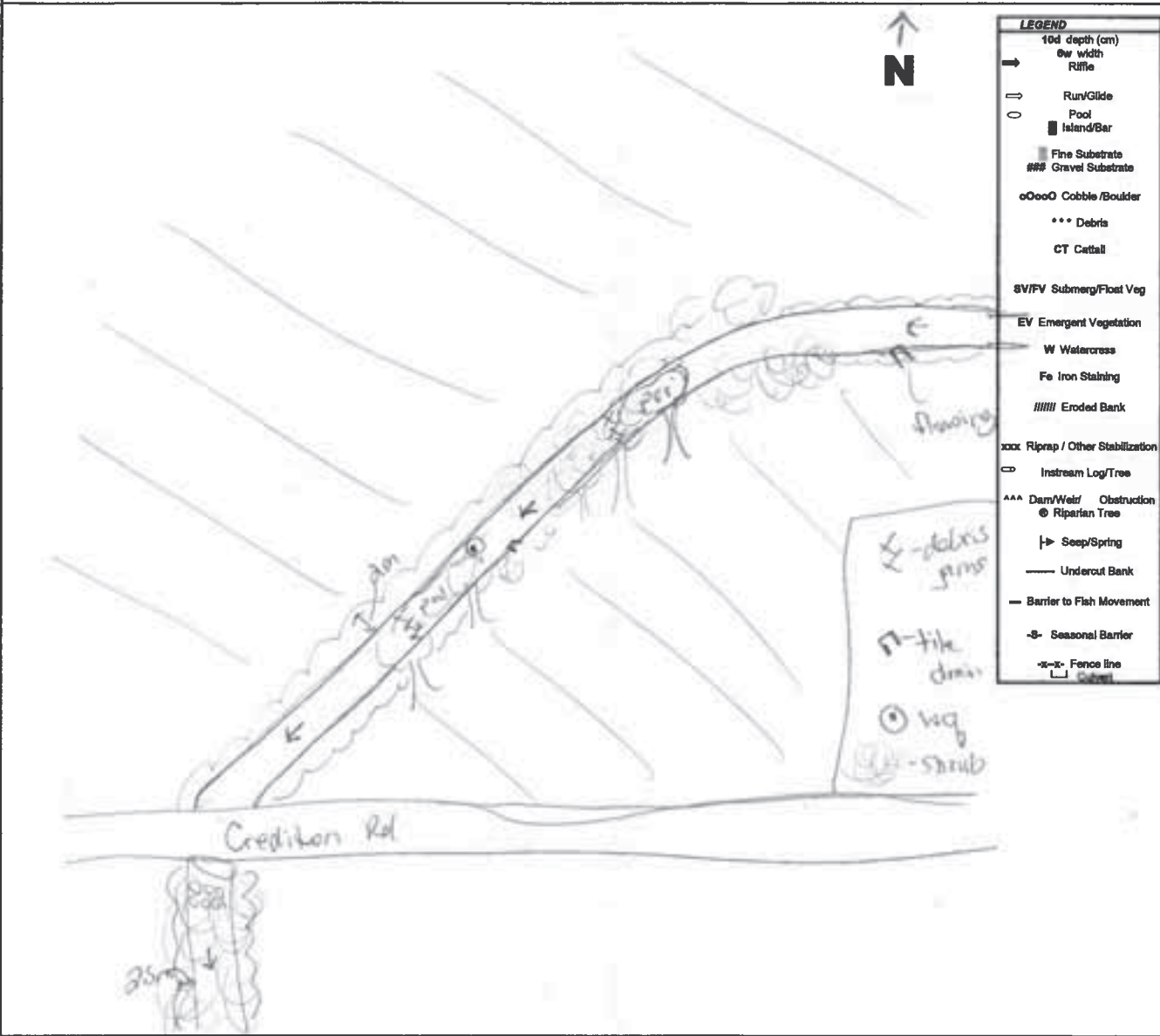
Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# 279 / 2768 Site ID D27



Horizontal View of Channel



Initial QA/QC By: Lentley

Date: May 16, 2012

Technical QA/QC By: Smith

Date: Aug 21, 12

**Assessment of Non-Water Body
(update to mapping required)**

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2623/3062 Site ID: D30
 Date: May 9/12 Start time: 13:25 End Time: 13:30

Weather Conditions: Cloudy, 15°C Field Crew: C. Boros, J. EPP
 Field Notes By: C. Boros

Site Location

Dump Rd / Kirkton Rd. west of Plugtown Ln.

*ASA
2623*

UTM Co-ordinates

Easting: 473265 Northing: 4798758 Description: Roadside
 Easting: _____ Northing: _____ Description: _____
 Easting: _____ Northing: _____ Description: _____
 Easting: _____ Northing: _____ Description: _____

Surrounding Landuse
 Residential Meadow
 Agriculture Wetland
 Forest Livestock
 Other _____
 Description: ploughed fields

Ground Water and Seepage Indicators
 Watercress Bank Seepage
 Iron Staining None
 Bubbling _____
 Details: _____

Feature Description

Is the mapped water body any of the below:

- 1) a grassed waterway? Y (N)
- 2) Temporary channel for surface drainage, that can be tilled or driven through? Y (N)
- 3) Rock chutes or spillways? Y / (N)
- 4) Roadside ditches that are not connected or do not contain a permanent or intermittent stream? Y / (N)
- 5) Temporarily ponded areas that are normally farmed? Y / (N)
- 6) Artificial bodies of water intended for storage, treatment for farming purposes? Y / (N)
- 8) Any other:

Description: (i.e. length of change, if it reappears, if there is evidence of water)

Farmer ploughs field - no evidence of defined channel but depression area observed. Could be buried → 2 gates observed where watercourse should have been along roadside
- no water body present

Photo log

Picture #	Description	Picture #	Description
1-2	overview		
1-2	overview		

Assessment of Non-Water Body
(update to mapping required)

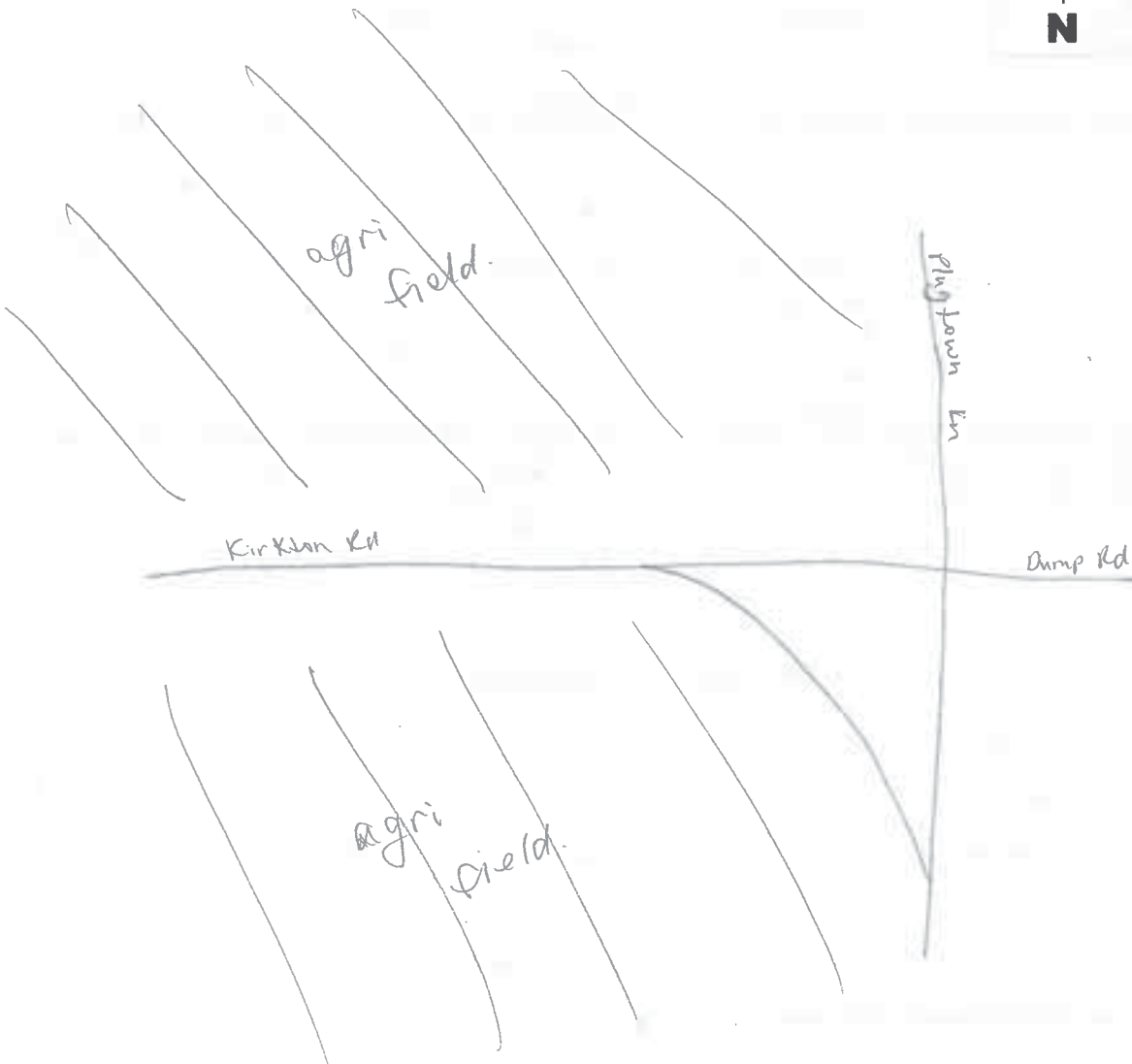
AECOM

Date: May 9/12

Land Parcel/Site ID: D30 GS#2623/3062

Page 2 of 2

Site Sketch



- no watercourse observed.

Initial QA/QC: L Bentley May 16, 2012
Technical QA/QC: Searken Aug 2/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2958 / 2441 Site ID: B031
 Date: May 9 / 12 Start time: 12:50 End Time: 13:20
 Weather Conditions: Cloudy, 13°C Field Crew: C. Boros, J. TPP
 Field Notes By: C. Boros

Site Location

Dump Rd. (Kirkton Rd) east Plugtown Ln Roadside Survey

UTM Co-ordinates (continue on page 3 if necessary)

Easting: <u>0473692</u>	Northing: <u>4798821</u>	Description: <u>Culvert at Road</u>
Easting:	Northing:	Description:
Easting:	Northing:	Description:
Easting:	Northing:	Description:

Surrounding Land Use

Type of Watercourse

Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Channelized <input checked="" type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>	Permanent <input checked="" type="checkbox"/>	Natural Channel <input type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>	Ephemeral <input type="checkbox"/>	<input type="checkbox"/>
Other <input type="checkbox"/>			
Description: <u>ploughed fields</u>		Description: <u>straight</u>	

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)
None observed

Is any portion of the water body underground or not as mapped? Y / (N)
 If Yes describe:

GPS Coordinate: Easting - Northing - Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat.

In-Situ Water Quality

Ground Water and Seepage Indicators

WT (°C): <u>18.86</u>	AT (°C): <u>13</u>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
pH: <u>8.18</u>	Cond (µs/cm): <u>551</u>	Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
D.O. (mg/L) <u>30.11</u>		Bubbling <input type="checkbox"/>	<input type="checkbox"/>
Water Clarity: Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/>		Other <input type="checkbox"/>	

Water Colour: n/a

Notes: Wqg at Culvert

Details:

Water Bodies Assessment Field Collection Form

Stream Morphology			
Site Length (m): <i>30m each side</i>		Bank Stability:	
Channel Dimensions		Stable	Slightly unstable
Mean Wetted Width (m): <i>1.5</i>	Mean Wetted Depth (m): <i>0.15</i>	Moderately unstable	Unstable
Mean Bankfull Width (m): <i>2</i>	Mean Bankfull Depth (m): <i>0.40</i>	Left Bank <input checked="" type="checkbox"/> Stable	<input type="checkbox"/> Slightly unstable
Mean Top of Bank Width (m): <i>6</i>	Mean Top of Bank Depth (m): <i>3</i>	Right Bank <input checked="" type="checkbox"/> Stable	<input type="checkbox"/> Slightly unstable
Flow Description: (high or low flow conditions, stagnant, etc)		Description: <i>vegetated but some bare spots</i>	
<i>slow flow, low gradient</i>			

Substrate (<=>)		Morphological Structure (%)			
Bo - Boulder	Description <i>Si = Sa ≠ Cl >> Co >> bo</i>	Pool	Riffle	Run	Flat
Co - Cobble			<i>5</i>		<i>95</i>
Gr - Gravel		Notes: <i>riffle right a culvert - farmer dumped rocks in stream</i>			
Sa - Sand					
Si - Silt					
Cl - Clay					
MK - Muck					
DT - Detritus					
Instream Cover (%) <i>50</i>					

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
<i>/</i>	<i>/</i>	<i>2</i>	<i>18</i>	<i>40</i>	<i>/</i>	<i>/</i>
						Average Depth: <i>/</i>
						(% Cover) <i>/</i>

Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%

*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)

Submerged algae - attached / filamentous > ~~floating~~ floating algae

Canopy Cover (% closed cover):			Types of Cover (% cover)		
100-90%	<input type="checkbox"/>	<i>30-1%</i> <input checked="" type="checkbox"/>	Trees	Shrubs <i>5</i>	Man-made structures
90-60%	<input type="checkbox"/>	0% <input type="checkbox"/>	Grasses <i>95</i>	Herbaceous	Other
60-30%	<input type="checkbox"/>				

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

red osier dogwood

Riparian Vegetation

Width of riparian vegetation: *North + south - grasses >>> shrubs*

Description of vegetation community surrounding 30 m from watercourse:

agri field

Obstructions to Fish Passage			
No Obstructions <input checked="" type="checkbox"/>	Man-Made <input type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>
Description of Barrier:			
Height of Barrier (m)		GPS Coordinates:	

Water Bodies Assessment Field Collection Form

AECOM

Date: May 9/12

Land Parcel/Site ID: 031
2958/2441

Page 3 of 4

Other General Comments Regarding the Study Area:

- fish observed - cyprinids (<10)
- frog observed
- watercourse surveyed by roadside - appears similar 20m up + down/s but could not see substrate
- Straight channelized stream, no cover, soft substrate

Additional UTM Coordinates:

Photo Log

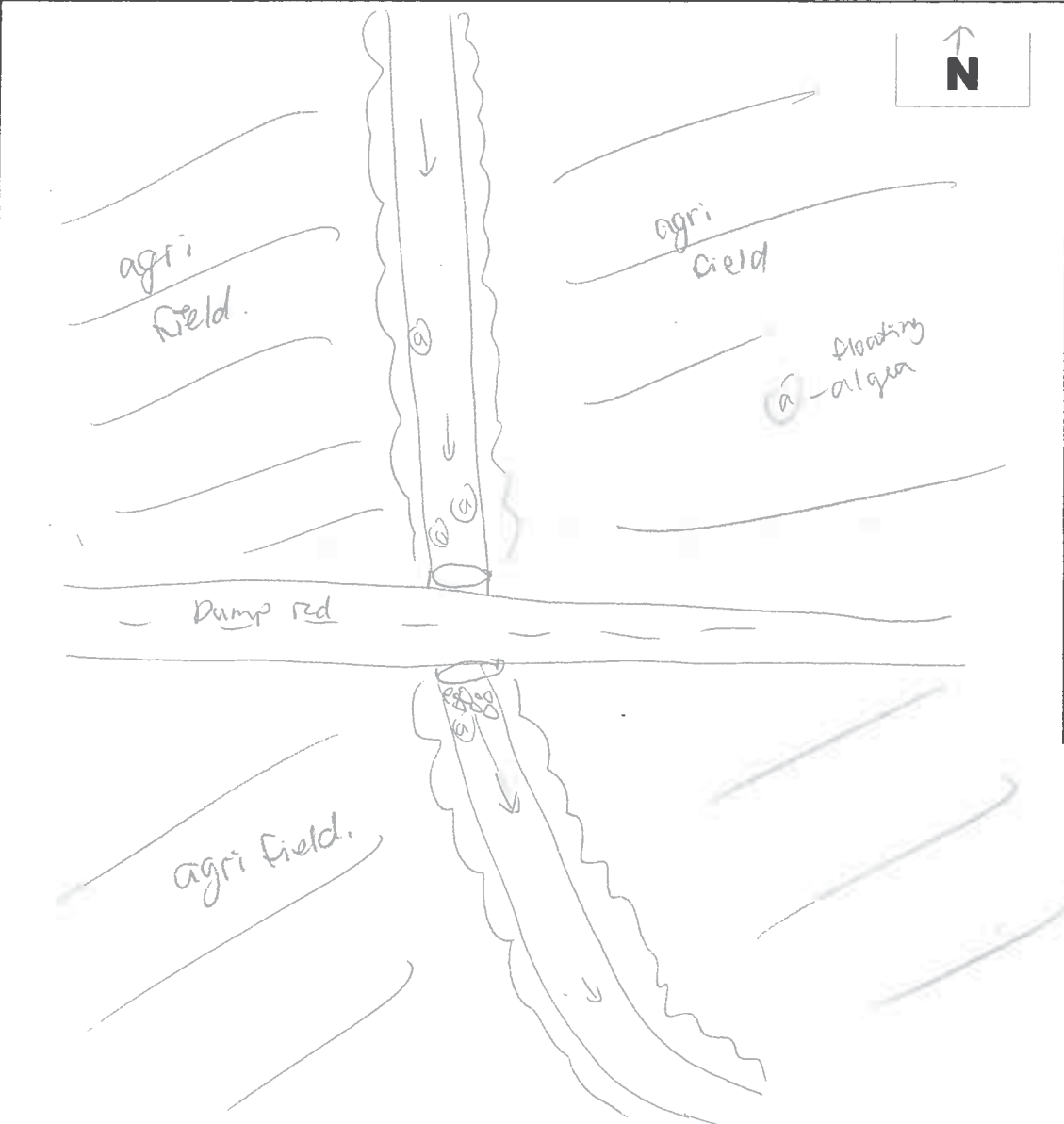
Picture #	Description	Picture #	Description
1a	Sheet		
1b-3	North side		
4-5	South side		

Water Bodies Assessment Field Collection Form

AECOM

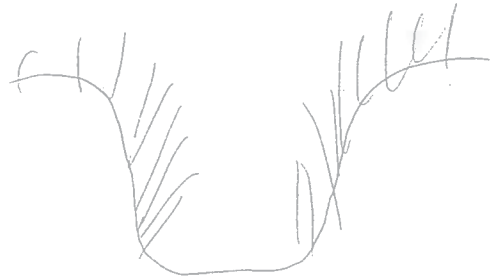
Page 4 of 4

Study Area: Jericho Goshen Bluewater Land Parcel# 2958 2441 Site ID B31



LEGEND	
10d depth (cm)	→
6w width	⇄
Riffle	○
Run/Glide	□
Pool	■
Island/Bar	■
Fine Substrate	■
Gravel Substrate	###
Cobble/Boulder	oOooO
Debris	***
Cattail	CT
Submerg/Float Veg	SV/FV
Emergent Vegetation	EV
Watercress	W
Iron Staining	Fe
Eroded Bank	
Riprap / Other Stabilization	xxx
Instream Log/Tree	☐
Dam/Weir / Obstruction	AAA
Riparian Tree	⊗
Seep/Spring	↳
Undercut Bank	—
Barrier to Fish Movement	—
Seasonal Barrier	-S-
Fence line	-x-x-
Culvert	□

Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: May 16, 2012

Technical QA/QC By: S. Antkowiak

Date: Aug 2/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2914/2587 Site ID: D32
 Date: May 9/12 Start time: ~~11:15~~ 11:15 End Time: 12:30
 Weather Conditions: Cloudy, 14°C Field Crew: C. Boros, J. Epp
 Field Notes By: C. Boros

Site Location

Dump Rd (Kirkland Rd) east of Plugs Line Roadside for GSH 2587 + 2441

UTM Co-ordinates (continue on page 3 if necessary)

Easting: <u>474 888</u>	Northing: <u>479 983</u>	Description: <u>D32 start</u>
Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____

Surrounding Landuse

- | | |
|---|------------------------------------|
| Residential <input type="checkbox"/> | Meadow <input type="checkbox"/> |
| Agriculture <input checked="" type="checkbox"/> | Wetland <input type="checkbox"/> |
| Forest <input checked="" type="checkbox"/> | Livestock <input type="checkbox"/> |
| Other <input type="checkbox"/> | |

Description: old corn field
deciduous forest

Type of Watercourse

- | | |
|---|---|
| Intermittent <input type="checkbox"/> | Channelized <input checked="" type="checkbox"/> |
| Permanent <input checked="" type="checkbox"/> | Natural Channel <input checked="" type="checkbox"/> |
| Ephemeral <input type="checkbox"/> | |

Description: appears to be naturalizing

Notes: (Include any inputs into the system i.e. tile drainage, seepages, overland flow)

~~tile drainage~~ one tile drain found - not flowing

Is any portion of the water body underground or not as mapped? **Y / N**
 If Yes describe: _____

GPS Coordinate: Easting - _____ Northing - _____ Description - _____

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

Slightly rolling

In-Situ Water Quality

WT (°C): <u>14.19</u>	AT (°C): <u>15°C</u>
pH: <u>6.64</u>	Cond (µs/cm): <u>562</u>
D.O. (mg/L) <u>17.33</u>	

Water Clarity: Clear Turbid

Water Colour: brown tinge

Notes: was taken in flat area

Ground Water and Seepage Indicators

- | | |
|--|--|
| Watercress <input type="checkbox"/> | Bank Seepage <input type="checkbox"/> |
| Iron Staining <input type="checkbox"/> | None <input checked="" type="checkbox"/> |
| Bubbling <input type="checkbox"/> | |
| Other <input type="checkbox"/> | |

Details: _____

Water Bodies Assessment Field Collection Form

Stream Morphology																				
Site Length (m): <i>within 60m; later channel 100m</i>				Bank Stability:																
Channel Dimensions				<table style="width: 100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>			Stable	Slightly unstable	Moderately unstable	Unstable	Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Stable	Slightly unstable	Moderately unstable	Unstable																
Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Mean Wetted Width (m): <i>3.5</i>	Mean Wetted Depth (m): <i>0.3</i>	Description: <i>slumping on north side up/s. → bank well veg by Bridge.</i>																		
Mean Bankfull Width (m): <i>4.2</i>	Mean Bankfull Depth (m): <i>0.65</i>																			
Mean Top of Bank Width (m): <i>7</i>	Mean Top of Bank Depth (m): <i>2</i>																			
Flow Description: (high or low flow conditions, stagnant, etc) <i>slow flow, low gradient</i>																				
Habitat																				
Substrate (<=>)			Morphological Structure (%)																	
Description Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus <i>Co >>> Bo > gr > sa, si</i> <i>→ cobble completely covered in algae</i>			<table border="1" style="width: 100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td><i>10</i></td> <td><i>10</i></td> <td><i>10</i></td> <td><i>70</i></td> </tr> </table>			Pool	Riffle	Run	Flat	<i>10</i>	<i>10</i>	<i>10</i>	<i>70</i>							
Pool	Riffle	Run	Flat																	
<i>10</i>	<i>10</i>	<i>10</i>	<i>70</i>																	
Notes:			<i>- Siltation started riffle run sequence</i> <i>- large pool by fence - max depth 0.4m</i>																	
Instream Cover (%) <i>80</i>																				
Other	Woody Debrls	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks														
<i>/</i>	<i>6</i>	<i>1</i>	<i>50</i>	<i>20</i>	<i>/</i>	Average Depth: <i>0.17m</i> (% Cover) <i>3</i>														
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%																				
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) <i>attached algae (to cobble) >> floating algae, water fly</i> <i>submergent</i>																				
Canopy Cover (% closed cover):			Types of Cover (% cover)																	
100-90%	<input type="checkbox"/>	30-1%	<input checked="" type="checkbox"/> <i>agri</i>	Trees <i>90 / 90</i>	Shrubs <i>10 / 1</i>	Man-made structures														
90-60%	<input checked="" type="checkbox"/> <i>brush</i>	0%	<input type="checkbox"/>	Grasses <i>10</i>	Herbaceous	Other														
60-30%	<input type="checkbox"/>			<i>agri</i>																
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																				
Notes: (vegetation species, types of structures) <i>grasses, willow trees on agri side</i>																				
Riparian Vegetation																				
Width of riparian vegetation: <i>agri side 3m, forest west - 10m into 730 east - 73m</i>																				
Description of vegetation community surrounding 30 m from watercourse: <i>agri - grasses, 3 willow trees, forest - deciduous (willows)</i>																				
Obstructions to Fish Passage																				
No Obstructions	<input type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier	<input type="checkbox"/>													
Description of Barrier: <i>None observed</i>																				
Height of Barrier (m)			GPS Coordinates:																	

Water Bodies Assessment Field Collection Form

AECOM

Date: *May 9/12*

Land Parcel/Site ID: *D32* *GS# 2914 12537* Page 3 of 4

Other General Comments Regarding the Study Area:

- fish observed - minnows (15), darter
- frog observed (green frog)
- crayfish observed in watercourse
- snail assessment completed for north side + roadside assessment completed for south side → watercourse similar on both sides

Additional UTM Coordinates:

Photo log			
Picture #	Description	Picture #	Description
<i>1a</i>	<i>sheet</i>		
<i>1-6</i>	<i>starting from Road moving up stream</i>		
<i>7</i>	<i>20m up/5 of start.</i>		
<i>8</i>	<i>Bridge</i>		
<i>9-11</i>	<i>looking downstream in forest</i>		

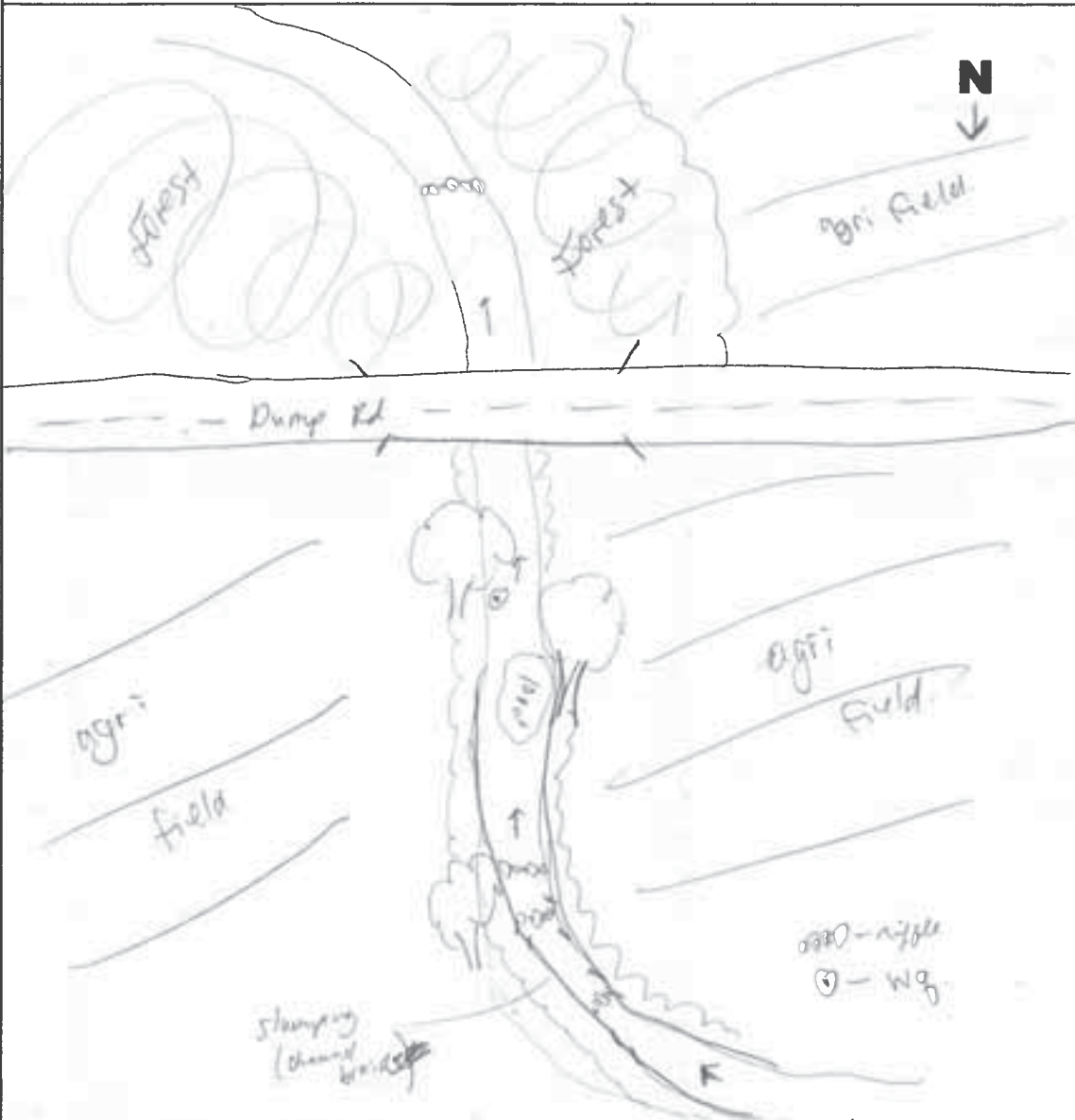
Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# 9814/2587 Site ID P32



LEGEND	
10d depth (cm)	→
0w width	⇌
Riffle	○
Run/Glide	■
Pool	■
Island/Bar	■
Fine Substrate	■
Gravel Substrate	■
Cobble/Boulder	○
Debris	•••
CT Cattail	CT
SV/FV Submerg/Float Veg	SV/FV
EV Emergent Vegetation	EV
W Watercress	W
Fe Iron Staining	Fe
Eroded Bank	
Riprap / Other Stabilization	xox
Instream Log/Tree	⊃
Dam/Weir Obstruction	AAA
Riparian Tree	⊙
Seep/Spring	↳
Undercut Bank	—
Barrier to Fish Movement	—
Seasonal Barrier	-S-
Fence line	-x-x-
Culvert	⌊

Horizontal View of Channel



Initial QA/QC By: Bentley

Date: May 16, 2012

Technical QA/QC By: Muthan

Date: Aug 9, 12

Water Bodies Assessment Field Collection Form

AECOM		Page 1 of 4	
General Information			
Study Area: Jericho <u>Goshen</u> Bluewater Land Parcel# <u>GS4 2588</u> Site ID: <u>D32</u>			
Date: <u>June 22/12</u> Start time: <u>8:40</u> End Time: <u>10:00</u>			
Weather Conditions: <u>Sunny, 18°C</u>		Field Crew: <u>C. Boros, J. Epp</u> Field Notes By: <u>C. Boros</u>	
Site Location			
<u>Dump Road, east of Kirkton</u>			
UTM Co-ordinates (continue on page 3 if necessary)			
Easting: <u>475204</u>	Northing: <u>4798812</u>	Description: <u>D32 start</u>	
Easting: <u>475078</u>	Northing: <u>4798868</u>	Description: <u>D32 wig</u>	
Easting: <u>475016</u>	Northing: <u>4798886</u>	Description: <u>D2588 end</u>	
Easting: <u>475198</u>	Northing: <u>4798844</u>	Description: <u>D32 rock</u>	
Surrounding Landuse		Type of Watercourse	
Residential <input type="checkbox"/>	Meadow <input checked="" type="checkbox"/>	Intermittent <input type="checkbox"/>	Channelized <input type="checkbox"/>
Agriculture <input type="checkbox"/>	Wetland <input type="checkbox"/>	Permanent <input checked="" type="checkbox"/>	Natural Channel <input checked="" type="checkbox"/>
Forest <input checked="" type="checkbox"/>	Livestock <input type="checkbox"/>	Ephemeral <input type="checkbox"/>	
Other <input type="checkbox"/>			
Description: <u>meadows, forest surrounding</u>		Description: <u>large meanders</u>	
Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)			
<u>none observed</u>			
Is any portion of the water body underground or not as mapped? <u>Y/N</u>			
If Yes describe:			
<u>/ / /</u>			
GPS Coordinate: Easting -		Northing -	
Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)			
<u>flat</u>			
In-Situ Water Quality		Ground Water and Seepage Indicators	
WT (°C): <u>21.1</u>	AT (°C): <u>18</u>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
pH: <u>7.79</u>	Cond (µs/cm): <u>572</u>	Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
D.O. (mg/L) <u>4.04</u>		Bubbling <input type="checkbox"/>	<input type="checkbox"/>
Water Clarity: Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/>		Other <input type="checkbox"/>	
Water Colour: <u>n/a</u>		Details:	
Notes: <u>taken in run, attached algae present</u>		<u>/</u>	

Water Bodies Assessment Field Collection Form

Stream Morphology						
Site Length (m): <u>150m</u>			Bank Stability:			
Channel Dimensions			Stable	Slightly unstable	Moderately unstable	Unstable
Mean Wetted Width (m): <u>3.5</u>	Mean Wetted Depth (m): <u>0.23</u>	Left Bank <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Mean Bankfull Width (m): <u>4.7</u>	Mean Bankfull Depth (m): <u>1.1</u>	Right Bank <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Mean Top of Bank Width (m): <u>—</u>	Mean Top of Bank Depth (m): <u>—</u>	Description: <u>well vegetated</u>				
Flow Description: (high or low flow conditions, stagnant, etc) <u>mod flow, moderate water level</u>						
Habitat						
Substrate (<=>)		Description		Morphological Structure (%)		
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus	<u>si = gr = sa > co > bo</u>		Pool	Riffle	Run	Flat
			<u>10</u>	<u>10</u>	<u>30</u>	<u>50</u>
			Notes: <u>riffle run pool sequence present -> 2 locations</u>			
Instream Cover (%) <u>85</u>						
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
	<u>5</u>	<u>10</u>	<u>20</u>	<u>40</u>		Average Depth: (% Cover) <u>10</u>
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%						
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) <u>algae - attached > pondweed, water lily, grasses.</u>						
Canopy Cover (% closed cover):			Types of Cover (% cover)			
100-90% <input type="checkbox"/>	30-1% <input type="checkbox"/>	Trees <u>85</u>	Shrubs <u>5</u>	Man-made structures		
90-60% <input type="checkbox"/>	0% <input type="checkbox"/>	Grasses <u>10</u>	Herbaceous	Other		
60-30% <input checked="" type="checkbox"/>						
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%						
Notes: (vegetation species, types of structures) <u>Basswood, ash, dogwood, willow</u>						
Width and Description of riparian vegetation: LB - <u>10m - forest</u>			Riparian Vegetation RB - <u>10m - forest</u>			
Overhanging Vegetation Present <input checked="" type="checkbox"/> <u>N</u>			% Overhanging Vegetation:			
Description of Overhanging Vegetation:						
Obstructions to Fish Passage						
None Observed <input checked="" type="checkbox"/>	Man-Made <input type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>			
Description of Barrier:						
Height of Barrier (m)			GPS Coordinates:			

Water Bodies Assessment Field Collection Form

AECOM

Date: June 22/12

Land Parcel/Site ID: 032 6812580

Page 3 of 4

Other General Comments Regarding the Study Area:

- cyprinids (~50), darters, yoy (~10)
- live mussel → giant floater.

Watercourse natural meandering system - moderate size.
 Instream cover high + diverse. Substrate mix of sand, gravel + silt. Canopy cover moderate - no overhanging shrubs.

Additional UTM Coordinates:

Photo log			
Picture #	Description	Picture #	Description
10a	sheet		
15-17	Channel overview starting at north walking + ending at south property line		
18-19	Rock pile 8m from watercourse		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

Bluewater

Land Parcel#

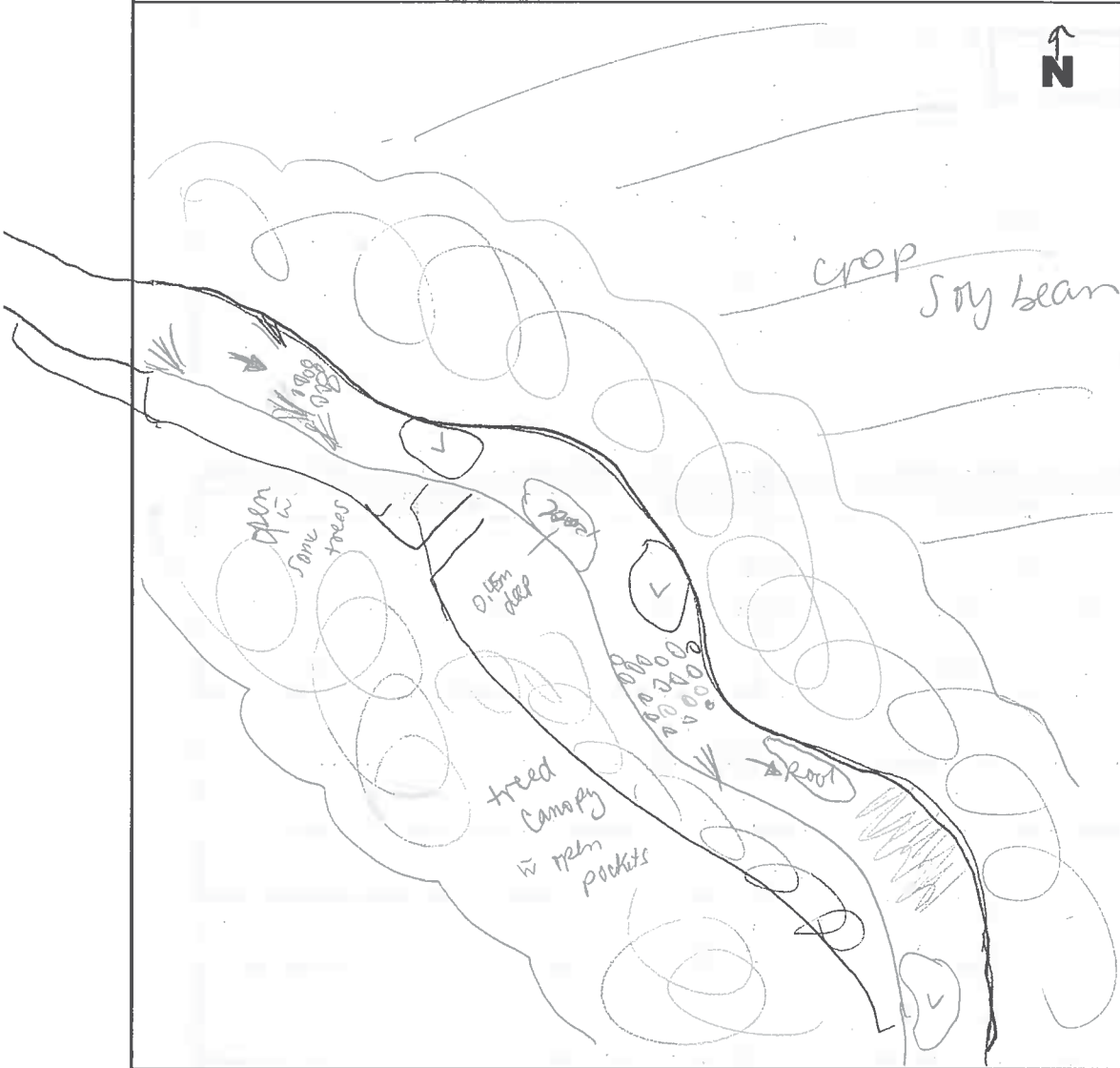
GSH 2588

Site ID

D32



LEGEND	
→	10d depth (cm) or width Riffle
⇨	Run/Glide
○	Pool
■	Island/Bar
	Fine Substrate
###	Gravel Substrate
oOooO	Cobble/Boulder
***	Debris
CT	Cattail
SW/FV	Submerg/Float Veg
EV	Emergent Vegetation
W	Watercress
Fe	Iron Staking
	Eroded Bank
xxx	Riprap / Other Stabilization
CD	Instream Log/Tree
AAA	Dam/Weir/ Obstruction
⊙	Riparian Tree
↳	Seep/Spring
—	Undercut Bank
—	Barrier to Fish Movement
-S-	Seasonal Barrier
-x-x-	Fence line
□	Chart



L - lily pads
 ~~~~~ - leaves + pedals creating b.l.m.  
 rrrr - riffle

Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: June 26/12

Technical QA/QC By: Rutken Date: July 9/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# POW Site ID: P35

Date: June 13/12 Start time: 11:10 End Time: 12:05

Weather Conditions:

Sunny 12°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Crediton Rd + McTaggart Ln

UTM Co-ordinates (continue on page 3 if necessary)

|                            |                              |                                   |
|----------------------------|------------------------------|-----------------------------------|
| Easting: <u>465770</u>     | Northing: <u>4795608</u>     | Description: <u>McTaggart</u>     |
| Easting: <u>465759</u>     | Northing: <u>4795730</u>     | Description: <u>McTaggart</u>     |
| Easting: <del>465748</del> | Northing: <del>4796003</del> | Description: <del>McTaggart</del> |
| Easting: <u>465635</u>     | Northing: <u>4796488</u>     | Description: <u>McTaggart</u>     |

Surrounding Landuse

|             |                                     |           |                          |
|-------------|-------------------------------------|-----------|--------------------------|
| Residential | <input type="checkbox"/>            | Meadow    | <input type="checkbox"/> |
| Agriculture | <input checked="" type="checkbox"/> | Wetland   | <input type="checkbox"/> |
| Forest      | <input type="checkbox"/>            | Livestock | <input type="checkbox"/> |
| Other       | <input checked="" type="checkbox"/> |           |                          |

Description:

roadside - west  
east - farm field

Type of Watercourse

|              |                                     |                 |                                     |
|--------------|-------------------------------------|-----------------|-------------------------------------|
| Intermittent | <input type="checkbox"/>            | Channelized     | <input checked="" type="checkbox"/> |
| Permanent    | <input checked="" type="checkbox"/> | Natural Channel | <input type="checkbox"/>            |
| Ephemeral    | <input type="checkbox"/>            |                 | <input type="checkbox"/>            |

Description:

straight ditch

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

Tile drains observed - not flowing

Is any portion of the water body underground or not as mapped? Y/N

If Yes describe:

GPS Coordinate Easting -

Northing -

Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

|                          |                          |
|--------------------------|--------------------------|
| WT (°C): <u>15.4</u>     | AT (°C): <u>12.0</u>     |
| pH: <u>6.93</u>          | Cond (µs/cm): <u>592</u> |
| D.O. (mg/L): <u>0.70</u> |                          |

Water Clarity: Clear  Turbid

Water Colour: n/a

Notes: water stagnant, bittercress mat  
width ~ 0.17m

Ground Water and Seepage Indicators

|               |                                     |                 |                                     |
|---------------|-------------------------------------|-----------------|-------------------------------------|
| Watercress    | <input checked="" type="checkbox"/> | Bank Seepage    | <input type="checkbox"/>            |
| Iron Staining | <input type="checkbox"/>            | None            | <input type="checkbox"/>            |
| Bubbling      | <input type="checkbox"/>            | Bittercress     | <input checked="" type="checkbox"/> |
| Other         | <input type="checkbox"/>            | water speedwell | <input checked="" type="checkbox"/> |

Details:

large mats of bittercress  
throughout  
- small clumps of water speedwell

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                     |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
|---------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------|-------------------------------------|------------------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Site Length (m): <u>1750m</u>                                                         |                                            |                                     |                                     | Bank Stability:                                |                                     |                                      |                                     |                                     |                                     |
| Channel Dimensions                                                                    |                                            |                                     |                                     | Stable                                         | Slightly unstable                   | Moderately unstable                  | Unstable                            |                                     |                                     |
| Mean Wetted Width (m):                                                                | <u>1.5</u>                                 | Mean Wetted Depth (m):              | <u>0.17</u>                         | Left Bank                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>            | <input type="checkbox"/>            |                                     |
| Mean Bankfull Width (m):                                                              | <u>2.5</u>                                 | Mean Bankfull Depth (m):            | <u>0.95</u>                         | Right Bank                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>             | <input type="checkbox"/>            | <input type="checkbox"/>            |                                     |
| Mean Top of Bank Width (m):                                                           | <u>5</u>                                   | Mean Top of Bank Depth (m):         | <u>2.5</u>                          | Description: <u>will vegetated</u>             |                                     |                                      |                                     |                                     |                                     |
| Flow Description: (high or low flow conditions, stagnant, etc)                        |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| <u>stagnant</u>                                                                       |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Habitat                                                                               |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Substrate (< = >)                                                                     |                                            |                                     |                                     | Morphological Structure (%)                    |                                     |                                      |                                     |                                     |                                     |
| Bo - Boulder                                                                          | Description<br><u>mk &gt; si = cl = sa</u> |                                     |                                     | Pool                                           | Riffle                              | Run                                  | Flat                                |                                     |                                     |
| Co - Cobble                                                                           |                                            |                                     |                                     | <input checked="" type="checkbox"/>            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Gr - Gravel                                                                           |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Sa - Sand                                                                             |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Si - Silt                                                                             |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Cl - Clay                                                                             |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| MK - Muck                                                                             |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| DT - Detritus                                                                         |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Notes: <u>straight.</u>                                                               |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Instream Cover (%) <u>90</u>                                                          |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Other                                                                                 | Woody Debris                               | Boulders                            | Cobble                              | Aquatic Vegetation*                            | None                                | Undercut Banks                       |                                     |                                     |                                     |
| <input checked="" type="checkbox"/>                                                   | <input checked="" type="checkbox"/>        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <u>90</u>                                      | <input checked="" type="checkbox"/> | Average Depth: <u>1</u><br>(% Cover) |                                     |                                     |                                     |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                            |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)                |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| <u>water bitter cress &gt;&gt;&gt; grasses, cattail &gt; duckweed, water plantain</u> |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Canopy Cover (% closed cover):                                                        |                                            |                                     |                                     | Types of Cover (% cover)                       |                                     |                                      |                                     |                                     |                                     |
| 100-90%                                                                               | <input type="checkbox"/>                   | 30-1%                               | <input checked="" type="checkbox"/> | Trees                                          | Shrubs                              | Man-made structures                  |                                     |                                     |                                     |
| 90-60%                                                                                | <input type="checkbox"/>                   | 0%                                  | <input type="checkbox"/>            | Grasses <u>100</u>                             | Herbaceous                          | Other                                |                                     |                                     |                                     |
| 60-30%                                                                                | <input type="checkbox"/>                   |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                            |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Notes: (vegetation species, types of structures)                                      |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| <u>grasses</u>                                                                        |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Riparian Vegetation                                                                   |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Width and Description of riparian vegetation:                                         | LB - <u>1.5m - tree rows + grass</u>       |                                     |                                     | RB - <u>1m - grasses (common Red-dominant)</u> |                                     |                                      |                                     |                                     |                                     |
| Overhanging Vegetation Present                                                        | <u>Y/N</u>                                 |                                     |                                     | % Overhanging Vegetation:                      |                                     |                                      |                                     |                                     |                                     |
| Description of Overhanging Vegetation:                                                |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Obstructions to Fish Passage                                                          |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| None Observed                                                                         | <input checked="" type="checkbox"/>        | Man-Made                            | <input type="checkbox"/>            | Natural                                        | <input type="checkbox"/>            | Low Flow Barrier                     | <input type="checkbox"/>            |                                     |                                     |
| Description of Barrier:                                                               |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| Height of Barrier (m)                                                                 |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |
| GPS Coordinates:                                                                      |                                            |                                     |                                     |                                                |                                     |                                      |                                     |                                     |                                     |

Water Bodies Assessment Field Collection Form

AECOM

Date: June 13/12

Land Parcel/Site ID: (GSH 3130)  
D35-ROU

Page 3 of 4

Other General Comments Regarding the Study Area:

Watercourse runs as road side ditch - it is straight and channelized. There is no water flow → high instream cover due to bitterness matting ~~large portion of~~ reach. Substrate mucky + soft. Very little canopy cover.

Additional UTM Coordinates:

Photo log

| Picture #           | Description                       | Picture # | Description |
|---------------------|-----------------------------------|-----------|-------------|
| 1a<br>1b            | Sheet review - South of Creighton |           |             |
| 2-12                | GSH 2381                          |           |             |
| 13- <del>23</del> 3 | ASH 2435                          |           |             |
| 24-31               | ASH 2432                          |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |
|                     |                                   |           |             |

# Water Bodies Assessment Field Collection Form

**AECOM**

Near GSH3130) Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

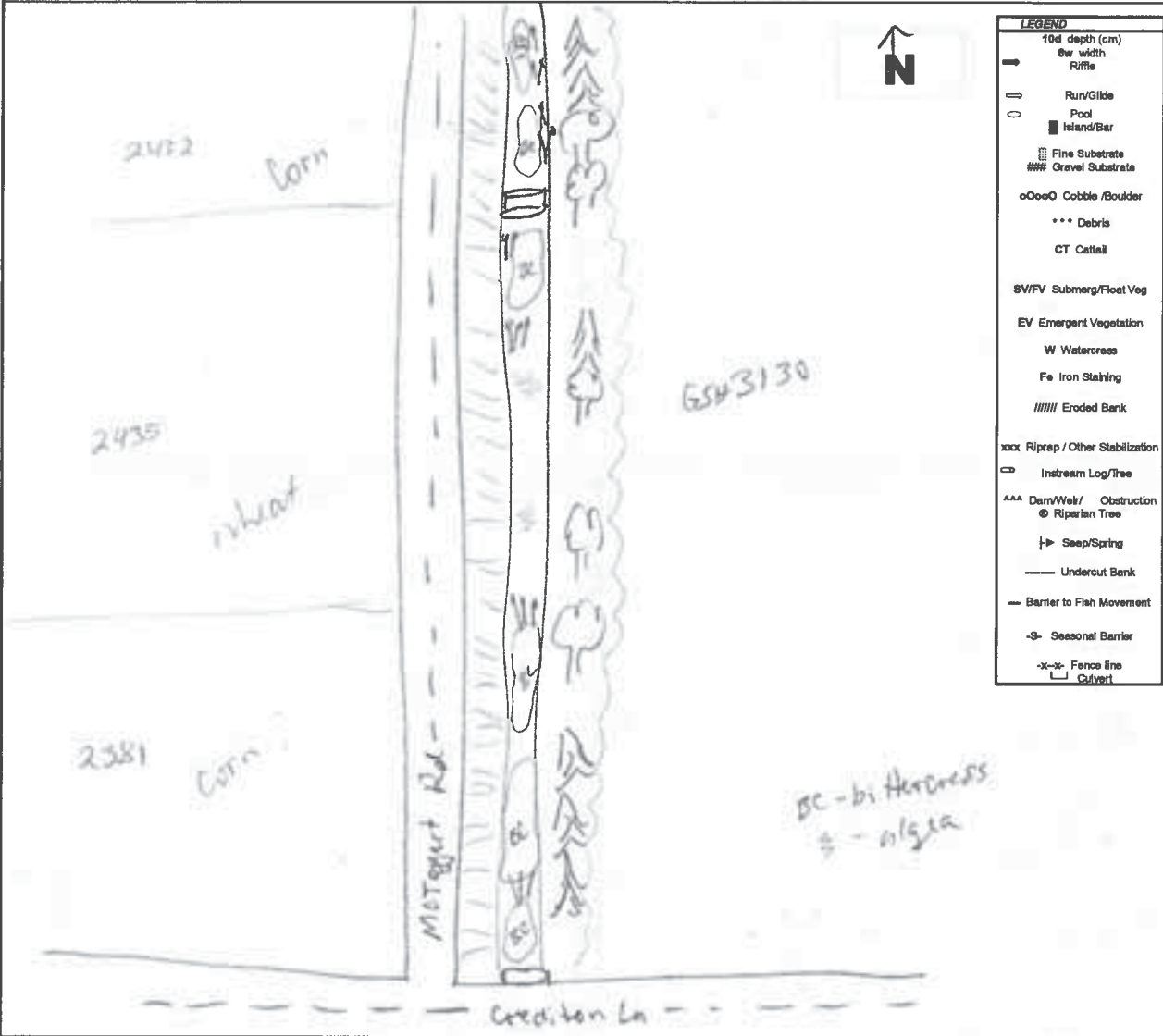
Goshen

Bluewater

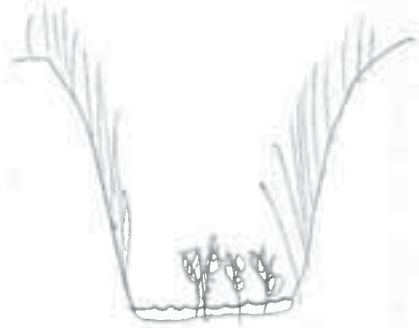
Land Parcel#

Site ID

035-RON



Horizontal View of Channel



Initial QA/QC By:

L. Bentley

Date:

June 26, 2012

Technical QA/QC By:

*[Signature]*

Date:

July 9, 12

Water Bodies Assessment Field Collection Form

AECOM

Page 1 of 4

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2770/330 Site ID: 035  
 Date: May 1/12 Start time: 15:30 End Time: 16:05  
 Weather Conditions: Cloudy Field Crew: C. Boros, J. Harnden  
 Field Notes By: C. Boros

Site Location

intersection (East side) Crediton Rd, McTaggart Ln.

UTM Co-ordinates (continue on page 3 if necessary)

|                         |                          |                           |
|-------------------------|--------------------------|---------------------------|
| Easting: <u>0465760</u> | Northing: <u>4795667</u> | Description: <u>035 N</u> |
| Easting: <u>0465774</u> | Northing: <u>4795528</u> | Description: <u>035 S</u> |
| Easting: _____          | Northing: _____          | Description: _____        |
| Easting: _____          | Northing: _____          | Description: _____        |

|                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surrounding Landuse<br>Residential <input type="checkbox"/> Meadow <input type="checkbox"/><br>Agriculture <input checked="" type="checkbox"/> Wetland <input type="checkbox"/><br>Forest <input type="checkbox"/> Livestock <input type="checkbox"/><br>Other _____ |  | Type of Watercourse<br>Intermittent <input type="checkbox"/> Channelized <input checked="" type="checkbox"/><br>Permanent <input checked="" type="checkbox"/> Natural Channel <input type="checkbox"/><br>Ephemeral <input type="checkbox"/> _____ <input type="checkbox"/> |
| Description: <u>roadside</u>                                                                                                                                                                                                                                         |  | Description: <u>starting to naturalize</u>                                                                                                                                                                                                                                  |

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

tile drains observed - not flowing

Is any portion of the water body underground or not as mapped? Y  N   
 If Yes describe:

GPS Coordinate: Easting - \_\_\_\_\_ Northing - \_\_\_\_\_ Description - \_\_\_\_\_

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): 16.29 AT (°C): 13  
 pH: 7.65 Cond (µm/cm): 513  
 D.O. (mg/L) 13.83  
 Water Clarity: Clear  Turbid

Water Colour: n/a

Notes: algae observed

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling  \_\_\_\_\_   
 Other

Details: multiple mats observed on N side

water speedwell

**Water Bodies Assessment Field Collection Form**

|                                 |                                 |                                                |                          |
|---------------------------------|---------------------------------|------------------------------------------------|--------------------------|
| <b>Stream Morphology</b>        |                                 |                                                |                          |
| Site Length (m): 120m           |                                 | Bank Stability:                                |                          |
| <b>Channel Dimensions</b>       |                                 | Stable                                         | Slightly unstable        |
| Mean Wetted Width (m): 1.9      | Mean Wetted Depth (m): 0.195    | Moderately unstable                            | Unstable                 |
| Mean Bankfull Width (m): 2.5    | Mean Bankfull Depth (m): 0.5    | Left Bank <input checked="" type="checkbox"/>  | <input type="checkbox"/> |
| Mean Top of Bank Width (m): 4.5 | Mean Top of Bank Depth (m): 2.5 | Right Bank <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                 |                                 | Description: veg banks                         |                          |

**Flow Description: (high or low flow conditions, stagnant, etc)**  
 visible only in 2 spots, wv. slow, low gradient

| <b>Substrate (&lt;=&gt;)</b>                                                                                    |                     | <b>Habitat</b>                                                                                                                                                                                                                                                   |      |                             |  |  |  |      |        |     |      |  |  |  |     |
|-----------------------------------------------------------------------------------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------------------|--|--|--|------|--------|-----|------|--|--|--|-----|
| Bo - Boulder<br>Co - Cobble<br>Gr - Gravel<br>Sa - Sand<br>Si - Silt<br>Cl - Clay<br>MK - Muck<br>DT - Detritus | Description: si, cl | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="4">Morphological Structure (%)</th> </tr> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td></td> <td></td> <td>100</td> </tr> </table> |      | Morphological Structure (%) |  |  |  | Pool | Riffle | Run | Flat |  |  |  | 100 |
| Morphological Structure (%)                                                                                     |                     |                                                                                                                                                                                                                                                                  |      |                             |  |  |  |      |        |     |      |  |  |  |     |
| Pool                                                                                                            | Riffle              | Run                                                                                                                                                                                                                                                              | Flat |                             |  |  |  |      |        |     |      |  |  |  |     |
|                                                                                                                 |                     |                                                                                                                                                                                                                                                                  | 100  |                             |  |  |  |      |        |     |      |  |  |  |     |
|                                                                                                                 |                     | Notes: n meanders                                                                                                                                                                                                                                                |      |                             |  |  |  |      |        |     |      |  |  |  |     |

| Instream Cover (%)   |              |          |        |                     |      |                  |
|----------------------|--------------|----------|--------|---------------------|------|------------------|
| Other <i>inverte</i> | Woody Debris | Boulders | Cobble | Aquatic Vegetation* | None | Undercut Banks   |
| 10                   |              |          |        | 70                  |      | Average Depth: / |
|                      |              |          |        |                     |      | (% Cover) /      |

Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%  
 \*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)  
 algae, watercress, grasses, cattails

|                                       |                          |       |                                     |                                 |                  |                               |
|---------------------------------------|--------------------------|-------|-------------------------------------|---------------------------------|------------------|-------------------------------|
| <b>Canopy Cover (% closed cover):</b> |                          |       |                                     | <b>Types of Cover (% cover)</b> |                  |                               |
| 100-90%                               | <input type="checkbox"/> | 30-1% | <input checked="" type="checkbox"/> | Trees                           | Shrubs <i>20</i> | Man-made structures <i>10</i> |
| 90-60%                                | <input type="checkbox"/> | 0%    | <input type="checkbox"/>            | Grasses <i>70</i>               | Herbaceous       | Other                         |
| 60-30%                                | <input type="checkbox"/> |       |                                     |                                 |                  |                               |

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%  
 Notes: (vegetation species, types of structures)  
 bank grasses, cattails, shrubs, inverte

**Riparian Vegetation**  
 Width of riparian vegetation: 15m  
 Description of vegetation community surrounding 30 m from watercourse: grasses, tree row, agrifield.

| Obstructions to Fish Passage                        |                                   |                                  |                                           |
|-----------------------------------------------------|-----------------------------------|----------------------------------|-------------------------------------------|
| No Obstructions <input checked="" type="checkbox"/> | Man-Made <input type="checkbox"/> | Natural <input type="checkbox"/> | Low Flow Barrier <input type="checkbox"/> |
| Description of Barrier:                             |                                   |                                  |                                           |
| Height of Barrier (m)                               |                                   | GPS Coordinates:                 |                                           |



Water Bodies Assessment Field Collection Form

D35

AECOM

Date: May 1 / 12

Land Parcel/Site ID: G5H 2770/3130 Page 3 of 4

Other General Comments Regarding the Study Area:

- Straight channelized watercourse, roadside ditch, low canopy  
 algae blooms, watercress mats, cattail clumps throughout  
 depth bottom → algae covered  
 → 50m upstream + downstream from study area similar

Additional UTM Coordinates:

| Picture # |                                   | Photo log |             |
|-----------|-----------------------------------|-----------|-------------|
| Picture # | Description                       | Picture # | Description |
| 1a        | sheet                             |           |             |
| 1b        | preview looking N                 |           |             |
| 2         | preview looking S                 |           |             |
| 3         | culvert N side                    |           |             |
| 4-5       | channel N side.                   |           |             |
| 6         | culvert south side                |           |             |
| 7         | <del>channel</del> channel S side |           |             |
|           |                                   |           |             |
|           |                                   |           |             |
|           |                                   |           |             |
|           |                                   |           |             |
|           |                                   |           |             |
|           |                                   |           |             |
|           |                                   |           |             |
|           |                                   |           |             |

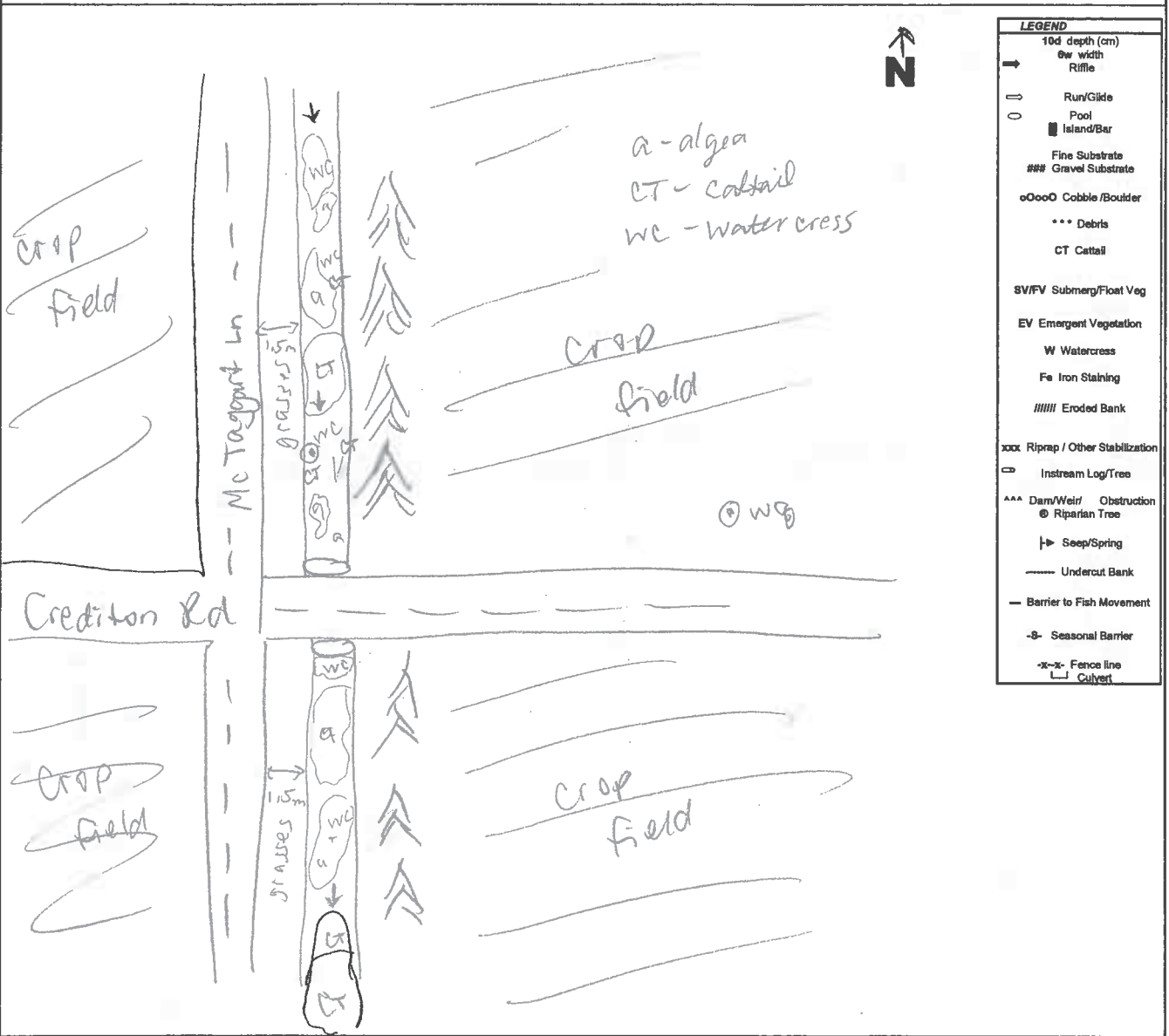
# Water Bodies Assessment Field Collection Form

**AECOM**

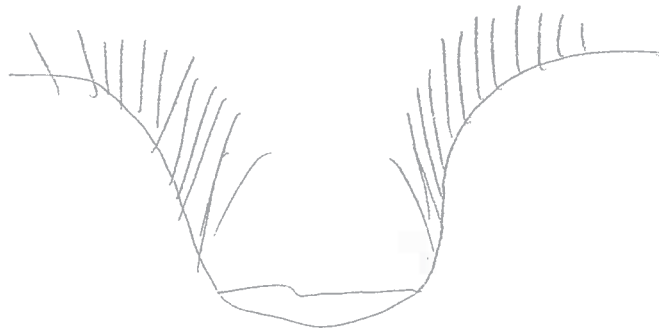
Page 4 of 4

## Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# 2770/3130 Site ID D35



### Horizontal View of Channel



Initial QA/QC By: L Bentley

Date: May 8, 2012

Technical QA/QC By: SAT Ken Date: May 18, 12

Water Bodies Assessment Field Collection Form

AECOM

Page 1 of 4

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# GSH2717 Site ID: 036

Date: June 13 / 12 Start time: 8:35 End Time: 9:40

Weather Conditions:

Sunny 10°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Ansable Line, south of Kirkton Rd.

UTM Co-ordinates (continue on page 3 if necessary)

|                         |                          |                                     |
|-------------------------|--------------------------|-------------------------------------|
| Eastings: <u>457166</u> | Northing: <u>4795011</u> | Description: <u>036 wig</u>         |
| Eastings: <u>457131</u> | Northing: <u>4794882</u> | Description: <u>036 south (end)</u> |
| Eastings: _____         | Northing: _____          | Description: _____                  |
| Eastings: _____         | Northing: _____          | Description: _____                  |

Surrounding Landuse

Residential   
 Agriculture   
 Forest   
 Other   
 Meadow   
 Wetland   
 Livestock

Type of Watercourse

Intermittent   
 Permanent   
 Ephemeral   
 Channelized   
 Natural Channel

Description:

Watercourse in forest corridor

Description:

Ansable River

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

None observed

Is any portion of the water body underground or not as mapped? Y / N  
 If Yes describe:

GPS Coordinate: Easting - \_\_\_\_\_ Northing - \_\_\_\_\_ Description - \_\_\_\_\_

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

in a slightly sloping valley

In-Situ Water Quality

WT (°C): 20.2 AT (°C): 10°C  
 pH: 7.49 Cond (µs/cm): 553  
 D.O. (mg/L): 3.95  
 Water Clarity: Clear  Turbid

Water Colour: brown

Notes: taken at bank edge.

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling   
 Other

Details:

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                                               |                                        |                                      |                                                                                |                                                |                             |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------|-----------------------------|
| Site Length (m): <u>150m</u>                                                                                    |                                        | not wadeable.<br>could not determine |                                                                                | Bank Stability:                                |                             |
| <b>Channel Dimensions</b>                                                                                       |                                        |                                      |                                                                                | Stable                                         | Slightly unstable           |
| Mean Wetted Width (m): <u>7m</u>                                                                                | Mean Wetted Depth (m): <u>CND</u>      |                                      |                                                                                | Left Bank <input checked="" type="checkbox"/>  | <input type="checkbox"/>    |
| Mean Bankfull Width (m): <u>8.25</u>                                                                            | Mean Bankfull Depth (m): <u>CND</u>    |                                      |                                                                                | Right Bank <input checked="" type="checkbox"/> | <input type="checkbox"/>    |
| Mean Top of Bank Width (m): <u>15m</u>                                                                          | Mean Top of Bank Depth (m): <u>CND</u> |                                      |                                                                                | Description:                                   |                             |
| Flow Description: (high or low flow conditions, stagnant, etc)                                                  |                                        |                                      |                                                                                |                                                |                             |
| <u>slow flow, moderate WL</u>                                                                                   |                                        |                                      |                                                                                |                                                |                             |
| Habitat                                                                                                         |                                        |                                      |                                                                                |                                                |                             |
| Substrate (<=>)                                                                                                 |                                        | Description                          |                                                                                | Morphological Structure (%)                    |                             |
| Bo - Boulder<br>Co - Cobble<br>Gr - Gravel<br>Sa - Sand<br>Si - Silt<br>Cl - Clay<br>MK - Muck<br>DT - Detritus | <u>Si = Cl = Sa &gt; MK</u>            |                                      |                                                                                |                                                |                             |
|                                                                                                                 |                                        |                                      |                                                                                | Pool                                           | Riffle                      |
|                                                                                                                 |                                        |                                      |                                                                                | <u>/</u>                                       | <u>/</u>                    |
|                                                                                                                 |                                        |                                      |                                                                                | Run                                            | Flat                        |
|                                                                                                                 |                                        |                                      |                                                                                | <u>/</u>                                       | <u>100</u>                  |
|                                                                                                                 |                                        |                                      |                                                                                | Notes:                                         |                             |
|                                                                                                                 |                                        |                                      |                                                                                | <u>deep water</u>                              |                             |
| Instream Cover (%)                                                                                              |                                        |                                      |                                                                                |                                                |                             |
| Other                                                                                                           | Woody Debris                           | Boulders                             | Cobble                                                                         | Aquatic Vegetation*                            | None                        |
|                                                                                                                 | <u>2</u>                               | <u>?</u>                             | <u>?</u>                                                                       | <u>?</u>                                       |                             |
|                                                                                                                 |                                        |                                      |                                                                                |                                                | Undercut Banks              |
|                                                                                                                 |                                        |                                      |                                                                                |                                                | Average Depth: <u>0.30m</u> |
|                                                                                                                 |                                        |                                      |                                                                                |                                                | (% Cover) <u>10</u>         |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                      |                                        |                                      |                                                                                |                                                |                             |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)                                          |                                        |                                      |                                                                                |                                                |                             |
| <u>*hard to assess due to turbidity</u>                                                                         |                                        |                                      |                                                                                |                                                |                             |
| Canopy Cover (% closed cover):                                                                                  |                                        |                                      | Types of Cover (% cover)                                                       |                                                |                             |
| 100-90%                                                                                                         | <input type="checkbox"/>               | 30-1%                                | <input type="checkbox"/>                                                       | Trees                                          | <u>70</u>                   |
| 90-60%                                                                                                          | <input type="checkbox"/>               | 0%                                   | <input type="checkbox"/>                                                       | Shrubs                                         | <u>30</u>                   |
| 60-30%                                                                                                          | <input checked="" type="checkbox"/>    |                                      |                                                                                | Man-made structures                            |                             |
|                                                                                                                 |                                        |                                      | Grasses <u>          </u> Herbaceous <u>          </u> Other <u>          </u> |                                                |                             |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                      |                                        |                                      |                                                                                |                                                |                             |
| Notes: (vegetation species, types of structures)                                                                |                                        |                                      |                                                                                |                                                |                             |
| <u>willow</u>                                                                                                   |                                        |                                      |                                                                                |                                                |                             |
| Riparian Vegetation                                                                                             |                                        |                                      |                                                                                |                                                |                             |
| Width and Description of riparian vegetation:                                                                   | LB - <u>7-15m - meadows, forest</u>    |                                      |                                                                                | RB - <u>15m - forest</u>                       |                             |
| Overhanging Vegetation Present                                                                                  | <u>0</u> / N                           |                                      |                                                                                | % Overhanging Vegetation:                      | <u>10</u>                   |
| Description of Overhanging Vegetation:                                                                          |                                        |                                      |                                                                                |                                                |                             |
| <u>willow + dogwood line the banks + overhang but not very far in (average 1m)</u>                              |                                        |                                      |                                                                                |                                                |                             |
| Obstructions to Fish Passage                                                                                    |                                        |                                      |                                                                                |                                                |                             |
| None Observed                                                                                                   | <input checked="" type="checkbox"/>    | Man-Made                             | <input type="checkbox"/>                                                       | Natural                                        | <input type="checkbox"/>    |
|                                                                                                                 |                                        |                                      |                                                                                | Low Flow Barrier                               | <input type="checkbox"/>    |
| Description of Barrier:                                                                                         |                                        |                                      |                                                                                |                                                |                             |
| Height of Barrier (m)                                                                                           |                                        |                                      | GPS Coordinates:                                                               |                                                |                             |

Water Bodies Assessment Field Collection Form

AECOM

Date: June 13/12

Land Parcel/Site ID: GSH2717 D36 Page 3 of 4

Other General Comments Regarding the Study Area:

Watercourse is a wide slow moving system that has turbid water. There is overhanging shrubs lining the banks and then forest area behind. Watercourse was too deep to wade however at edge substrate was silty, sandy + clayey. It has a natural meander.

→ Garter snake observed in grasses → concrete bridge + pieces ~ 10m away

Additional UTM Coordinates:

Photo log

| Picture # | Description                       | Picture # | Description |
|-----------|-----------------------------------|-----------|-------------|
| 1a        | Sheet                             |           |             |
| 1-3       | Channel overview in forest area   |           |             |
| 4-f       | watercourse from bridge crossing. |           |             |
|           |                                   |           |             |
|           |                                   |           |             |
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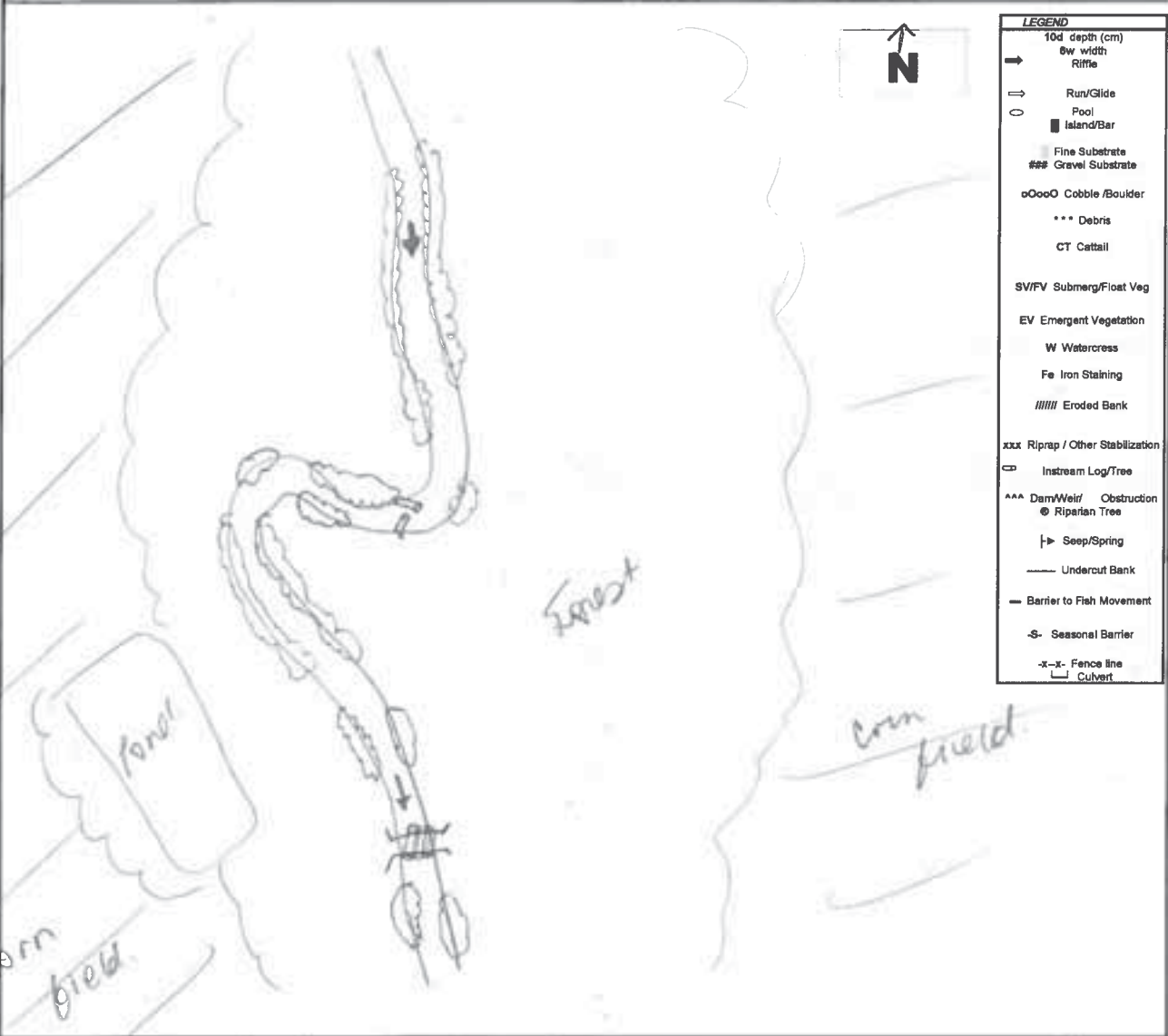
# Water Bodies Assessment Field Collection Form

**AECOM**

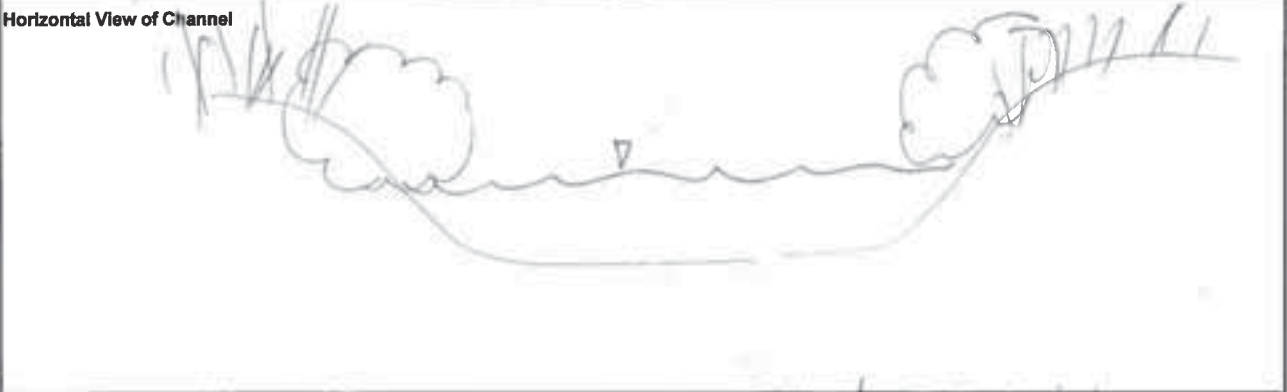
Page 4 of 4

## Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# 6342717 Site ID D36



| LEGEND                       |       |
|------------------------------|-------|
| 10d depth (cm)               | →     |
| 0w width                     | ⇨     |
| Riffle                       | ○     |
| Run/Glide                    | □     |
| Pool                         | ■     |
| Island/Bar                   | ○     |
| Fine Substrate               | •••   |
| Gravel Substrate             | •••   |
| Cobble/Boulder               | •••   |
| Debris                       | •••   |
| Cattail                      | CT    |
| Submerg/Floater Veg          | SV/FV |
| Emergent Vegetation          | EV    |
| Watercress                   | W     |
| Iron Staining                | Fe    |
| Eroded Bank                  |       |
| Riprap / Other Stabilization | xxx   |
| Instream Log/Tree            | ⊃     |
| Dam/Weir / Obstruction       | ^^^   |
| Riparian Tree                | ⊙     |
| Seep/Spring                  | ↳     |
| Undercut Bank                | —     |
| Barrier to Fish Movement     | —     |
| Seasonal Barrier             | -S-   |
| Fence line                   | -x-x- |
| Culvert                      | ⌊     |



Initial QA/QC By: L. Bentley Date: June 26, 2012 Technical QA/QC By: Autken Date: July 19, 12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2370 Site ID: 037  
 Date: June 13/12 Start time: 9:50 End Time: 11:00

Weather Conditions: Sunny, 12°C Field Crew: C. Barros, J. Epp  
 Field Notes By: C. Barros

Site Location

London Rd, North of Crediton

ASA  
2369

UTM Co-ordinates (continue on page 3 if necessary)

|                        |                          |                               |
|------------------------|--------------------------|-------------------------------|
| Easting: <u>460956</u> | Northing: <u>4795742</u> | Description: <u>037 start</u> |
| Easting: <u>461015</u> | Northing: <u>4795677</u> | Description: <u>037 wq</u>    |
| Easting: <u>461037</u> | Northing: <u>4795570</u> | Description: <u>037 end</u>   |
| Easting:               | Northing:                | Description:                  |

| Surrounding Landuse                                                                |                                            | Type of Watercourse                           |                                                 |
|------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------|-------------------------------------------------|
| Residential <input type="checkbox"/>                                               | Meadow <input checked="" type="checkbox"/> | Intermittent <input type="checkbox"/>         | Channelized <input checked="" type="checkbox"/> |
| Agriculture <input checked="" type="checkbox"/>                                    | Wetland <input type="checkbox"/>           | Permanent <input checked="" type="checkbox"/> | Natural Channel <input type="checkbox"/>        |
| Forest <input type="checkbox"/>                                                    | Livestock <input type="checkbox"/>         | Ephemeral <input type="checkbox"/>            |                                                 |
| Other <input type="checkbox"/>                                                     |                                            |                                               |                                                 |
| Description: <u>meadow - west - till train tracks</u><br><u>agri: wheat - east</u> |                                            | Description: <u>straight</u>                  |                                                 |

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)  
Tile drains - some flowing

Is any portion of the water body underground or not as mapped? Y/N  
 If Yes describe:

GPS Coordinate: Easting - Northing - Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): 16.4 AT (°C): 12  
 pH: 7.84 Cond (µs/cm): 539  
 D.O. (mg/L) 7.61  
 Water Clarity: Clear  Turbid   
 Water Colour: n/a  
 Notes: wq taken in small pool  
w depth ~

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling  water   
 Other  speedwell  
 Details: small sporadic clumps

### Water Bodies Assessment Field Collection Form

| Stream Morphology                                                                                                                         |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-------------------------------|--------------------------|-------------------|---------------------|----------|-----------|--------------------------|-------------------------------------|--------------------------|--------------------------|------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| Site Length (m): 150 m                                                                                                                    |                                     |                                     | Bank Stability:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Channel Dimensions                                                                                                                        |                                     |                                     | <table style="width: 100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> |                          |                          |                               | Stable                   | Slightly unstable | Moderately unstable | Unstable | Left Bank | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Right Bank | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                           | Stable                              | Slightly unstable                   | Moderately unstable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Unstable                 |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Left Bank                                                                                                                                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Right Bank                                                                                                                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Mean Wetted Width (m): 1.75                                                                                                               | Mean Wetted Depth (m): 0.25         |                                     | Description:<br>some areas of erosion + bare soil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Mean Bankfull Width (m): 3                                                                                                                | Mean Bankfull Depth (m): 1          |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Mean Top of Bank Width (m): 6                                                                                                             | Mean Top of Bank Depth (m): 3       |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Flow Description: (high or low flow conditions, stagnant, etc)<br>moderate flow                                                           |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Habitat                                                                                                                                   |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Substrate (<=>)                                                                                                                           |                                     |                                     | Morphological Structure (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Description<br>Bo - Boulder<br>Co - Cobble<br>Gr - Gravel<br>Sa - Sand<br>Si - Silt<br>Cl - Clay<br>MK - Muck<br>DT - Detritus            |                                     |                                     | <table border="1" style="width: 100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td>10</td> <td>7</td> <td>3</td> <td>80</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                           |                          |                          | Pool                          | Riffle                   | Run               | Flat                | 10       | 7         | 3                        | 80                                  |                          |                          |            |                          |                                     |                          |                          |
| Pool                                                                                                                                      | Riffle                              | Run                                 | Flat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| 10                                                                                                                                        | 7                                   | 3                                   | 80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Clay packed bottom w thin layer of sand + silt on top w present                                                                           |                                     |                                     | Notes:<br>multiple run pool sequences present                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Instream Cover (%) 29                                                                                                                     |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Other                                                                                                                                     | Woody Debris                        | Boulders                            | Cobble                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Aquatic Vegetation*      | None                     | Undercut Banks                |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| /                                                                                                                                         | /                                   | /                                   | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 20                       | /                        | Average Depth:<br>(% Cover) / |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                                                |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)<br>algae - attached, filamentous > grasses, w/c, + water speedwell |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Canopy Cover (% closed cover):                                                                                                            |                                     |                                     | Types of Cover (% cover)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| 100-90%                                                                                                                                   | <input type="checkbox"/>            | 30-1%                               | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Trees                    | Shrubs 10                | Man-made structures           |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| 90-60%                                                                                                                                    | <input type="checkbox"/>            | 0%                                  | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Grasses 90               | Herbaceous               | Other                         |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| 60-30%                                                                                                                                    | <input type="checkbox"/>            |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                                                |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Notes: (vegetation species, types of structures)<br>willow                                                                                |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Riparian Vegetation                                                                                                                       |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Width and Description of riparian vegetation:                                                                                             |                                     |                                     | Riparian Vegetation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| LB - 1 m - grasses                                                                                                                        |                                     |                                     | RB - 15m - meadow + grasses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Overhanging Vegetation Present Y/N                                                                                                        |                                     |                                     | % Overhanging Vegetation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Description of Overhanging Vegetation:                                                                                                    |                                     |                                     | /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Obstructions to Fish Passage                                                                                                              |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| None Observed                                                                                                                             | <input checked="" type="checkbox"/> | Man-Made                            | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Natural                  | <input type="checkbox"/> | Low Flow Barrier              | <input type="checkbox"/> |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Description of Barrier:                                                                                                                   |                                     |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |
| Height of Barrier (m)                                                                                                                     |                                     |                                     | GPS Coordinates:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                          |                               |                          |                   |                     |          |           |                          |                                     |                          |                          |            |                          |                                     |                          |                          |



Water Bodies Assessment Field Collection Form

AECOM

Date: June 18/12

Land Parcel/Site ID:

6542370 037  
2369 12371 Page 3 of 4

Other General Comments Regarding the Study Area:

- Cyprinids, yoy darters (2), yoy schools  
(n75)

It is a straight channelized watercourse that has a hard clay packed bottom + little instream cover. Little canopy cover as well. Riffle, run, pool sequences present however no meandering.

Additional UTM Coordinates:

Watercourse looks similar 30m upls + downls from study area

Photo log

| Picture # | Description                      | Picture # | Description |
|-----------|----------------------------------|-----------|-------------|
| 1a        | sheet                            |           |             |
| 1-3       | 6542369 from bridge              |           |             |
| 4-5       | at bridge looking at 2370        |           |             |
| 6-10      | walking upls to study end (2370) |           |             |
|           |                                  |           |             |
|           |                                  |           |             |
|           |                                  |           |             |
|           |                                  |           |             |
|           |                                  |           |             |
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|           |                                  |           |             |
|           |                                  |           |             |

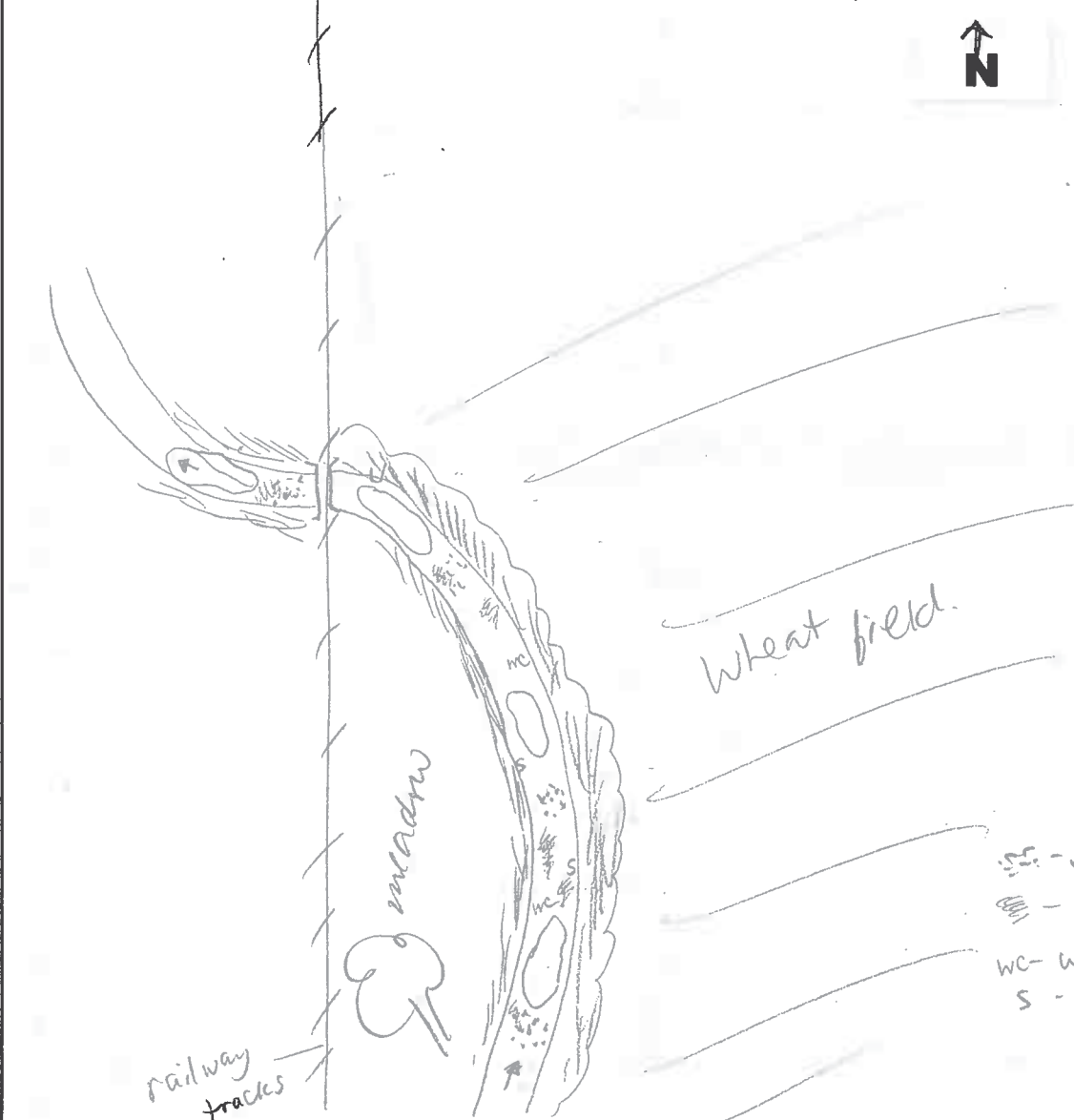
# Water Bodies Assessment Field Collection Form

**AECOM**

Page 4 of 4

## Watercourse Sketch

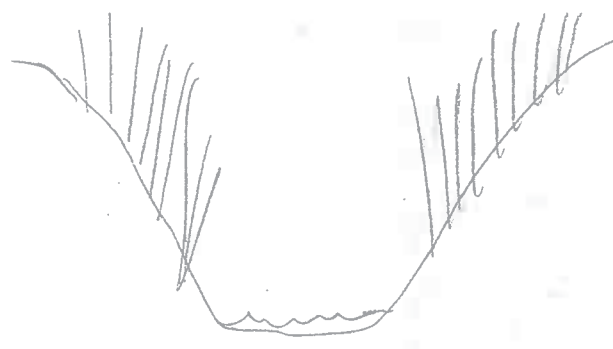
Study Area: Jericho Gosben Bluewater Land Parcel# ASH 2370 / 2369/2371 Site ID D37



| LEGEND                       |       |
|------------------------------|-------|
| 10d depth (cm)               | →     |
| 0w width                     | ⇌     |
| Rifle                        | ⇌     |
| Run/Glide                    | ⇌     |
| Pool                         | ○     |
| Island/Bar                   | ■     |
| Fine Substrate               | ###   |
| Gravel Substrate             | ###   |
| Cobble/Boulder               | oOooO |
| Debris                       | ***   |
| Cattail                      | CT    |
| Submerg/Float Veg            | SV/FV |
| Emergent Vegetation          | EV    |
| Watercress                   | W     |
| Iron Staining                | Fe    |
| Eroded Bank                  |       |
| Riprap / Other Stabilization | xxxx  |
| Instream Log/Tree            | ⊃     |
| Dam/Weir/ Obstruction        | AAA   |
| Riparian Tree                | ⊙     |
| Seep/Spring                  | ↳     |
| Undercut Bank                | —     |
| Barrier to Fish Movement     | -     |
| Seasonal Barrier             | -B-   |
| Fence line                   | -x-x- |
| Culvert                      | ⌊     |

~~~~~ - ripple  
 ~~~~~ - algae  
 WC - watercress  
 S - water speedway

### Horizontal View of Channel



Initial QA/QC By: L Bentley

Date: June 26, 2012

Technical QA/QC By: Stutem

Date: July 9/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2485 Site ID: D38

Date: July 12/12 Start time: 14:44 <sup>2555</sup> End Time: 15:10

Weather Conditions:

Sunny

Field Crew: S. Aitken, br. Ferris

Field Notes By: S. Aitken

ASA  
2555

Site Location

located east of London Rd, north of Creighton  
ASA on GOSH 2555

UTM Co-ordinates (continue on page 3 if necessary)

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Surrounding Landuse

Residential  Meadow   
Agriculture  Wetland   
Forest  Livestock   
Other

Type of Watercourse

Intermittent  Channelized   
Permanent  Natural Channel   
Ephemeral

Description:

meadow surrounded by  
agricultural fields - Soybeans

Description:

- appears to be naturalizing

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

- none observed  
- D39

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - \_\_\_\_\_ Northing - \_\_\_\_\_ Description - \_\_\_\_\_

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

Sloping towards water body

In-Situ Water Quality

WT (°C): 22.56 AT (°C): 33  
pH: 8.27 Cond (µs/cm): 457  
D.O. (mg/L) 10.83  
Water Clarity: Clear  Turbid

Water Colour: greyish colour

Notes: WT, taken d/s of confluence  
to D39

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
Iron Staining  None   
Bubbling  \_\_\_\_\_   
Other

Details:

Small pockets of  
watercress

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                                                             |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------|---------------------|---------------------------------------------------|------|
| Site Length (m): <u>~50m</u>                                                                                                  |                                         |                                                                                                                                                                                                          | Bank Stability:                           |                             |                     |                                                   |      |
| Channel Dimensions                                                                                                            |                                         |                                                                                                                                                                                                          | Stable                                    | Slightly unstable           | Moderately unstable | Unstable                                          |      |
| Mean Wetted Width (m): <u>1.5</u>                                                                                             | Mean Wetted Depth (m): <u>0.08</u>      | Left Bank <input type="checkbox"/> Stable <input type="checkbox"/> Slightly unstable <input checked="" type="checkbox"/> Moderately unstable <input type="checkbox"/> Unstable <input type="checkbox"/>  |                                           |                             |                     |                                                   |      |
| Mean Bankfull Width (m): <u>2.10</u>                                                                                          | Mean Bankfull Depth (m): <u>0.90</u>    | Right Bank <input type="checkbox"/> Stable <input type="checkbox"/> Slightly unstable <input checked="" type="checkbox"/> Moderately unstable <input type="checkbox"/> Unstable <input type="checkbox"/> |                                           |                             |                     |                                                   |      |
| Mean Top of Bank Width (m): <u>6.00</u>                                                                                       | Mean Top of Bank Depth (m): <u>2.40</u> | Description: <u>signs of erosion &amp; undercut banks</u>                                                                                                                                                |                                           |                             |                     |                                                   |      |
| Flow Description: (high or low flow conditions, stagnant, etc)<br><u>low flow conditions, banks on RB - gradual, steep LB</u> |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Habitat                                                                                                                       |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Substrate (<=>)                                                                                                               |                                         | Description                                                                                                                                                                                              |                                           | Morphological Structure (%) |                     |                                                   |      |
| Bo - Boulder                                                                                                                  | Co - Cobble                             | Gr - Gravel                                                                                                                                                                                              | Sa - Sand                                 | Si - Silt                   | Cl - Clay           |                                                   |      |
| MK - Muck                                                                                                                     | DT - Detritus                           | <u>Si &gt; Gr &gt; Co</u>                                                                                                                                                                                |                                           | Pool                        | Riffle              | Run                                               | Flat |
|                                                                                                                               |                                         |                                                                                                                                                                                                          |                                           | 10                          | 90                  | Notes:                                            |      |
| Instream Cover (%)                                                                                                            |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Other                                                                                                                         | Woody Debris                            | Boulders                                                                                                                                                                                                 | Cobble                                    | Aquatic Vegetation*         | None                | Undercut Banks                                    |      |
|                                                                                                                               |                                         |                                                                                                                                                                                                          | 15                                        | 10                          |                     | Average Depth: <u>0.10m</u><br>(% Cover) <u>5</u> |      |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                                    |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)<br><u>Watercress</u>                                   |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Canopy Cover (% closed cover):                                                                                                |                                         |                                                                                                                                                                                                          | Types of Cover (% cover)                  |                             |                     |                                                   |      |
| 100-90%                                                                                                                       | <input type="checkbox"/>                | 30-1%                                                                                                                                                                                                    | <input type="checkbox"/>                  | Trees                       | Shrubs              | Man-made structures                               |      |
| 90-60%                                                                                                                        | <input type="checkbox"/>                | 0%                                                                                                                                                                                                       | <input type="checkbox"/>                  | Grasses <u>40</u>           | Herbaceous          | Other                                             |      |
| 60-30%                                                                                                                        | <input checked="" type="checkbox"/>     |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                                    |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Notes: (vegetation species, types of structures)<br><u>grasses</u>                                                            |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Riparian Vegetation                                                                                                           |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Width and Description of riparian vegetation: LB - <u>&gt;20m meadow</u>                                                      |                                         |                                                                                                                                                                                                          | RB - <u>&gt;20m meadow</u>                |                             |                     |                                                   |      |
| Overhanging Vegetation Present <input checked="" type="checkbox"/> (N)                                                        |                                         |                                                                                                                                                                                                          | % Overhanging Vegetation:                 |                             |                     |                                                   |      |
| Description of Overhanging Vegetation:                                                                                        |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Obstructions to Fish Passage                                                                                                  |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| None Observed <input checked="" type="checkbox"/>                                                                             | Man-Made <input type="checkbox"/>       | Natural <input type="checkbox"/>                                                                                                                                                                         | Low Flow Barrier <input type="checkbox"/> |                             |                     |                                                   |      |
| Description of Barrier:                                                                                                       |                                         |                                                                                                                                                                                                          |                                           |                             |                     |                                                   |      |
| Height of Barrier (m)                                                                                                         |                                         |                                                                                                                                                                                                          | GPS Coordinates:                          |                             |                     |                                                   |      |

**Water Bodies Assessment Field Collection Form**

**AECOM**

Date: July 12/12

Land Parcel/Site ID: GSH 2485  
GSH 2555

D3B  
Page 3 of 4

**Other General Comments Regarding the Study Area:**

- channelized waterbody w steep banks on left side
- was flowing at time of investigation

**Additional UTM Coordinates:**

| Photo log |                            |           |             |
|-----------|----------------------------|-----------|-------------|
| Picture # | Description                | Picture # | Description |
| 34        | watercross                 |           |             |
| 35        | substrates                 |           |             |
| 36        | facing downstream          |           |             |
| 37        | overview facing upstream   |           |             |
| 38        | overview facing downstream |           |             |
|           |                            |           |             |
|           |                            |           |             |
|           |                            |           |             |
|           |                            |           |             |
|           |                            |           |             |
|           |                            |           |             |
|           |                            |           |             |
|           |                            |           |             |
|           |                            |           |             |

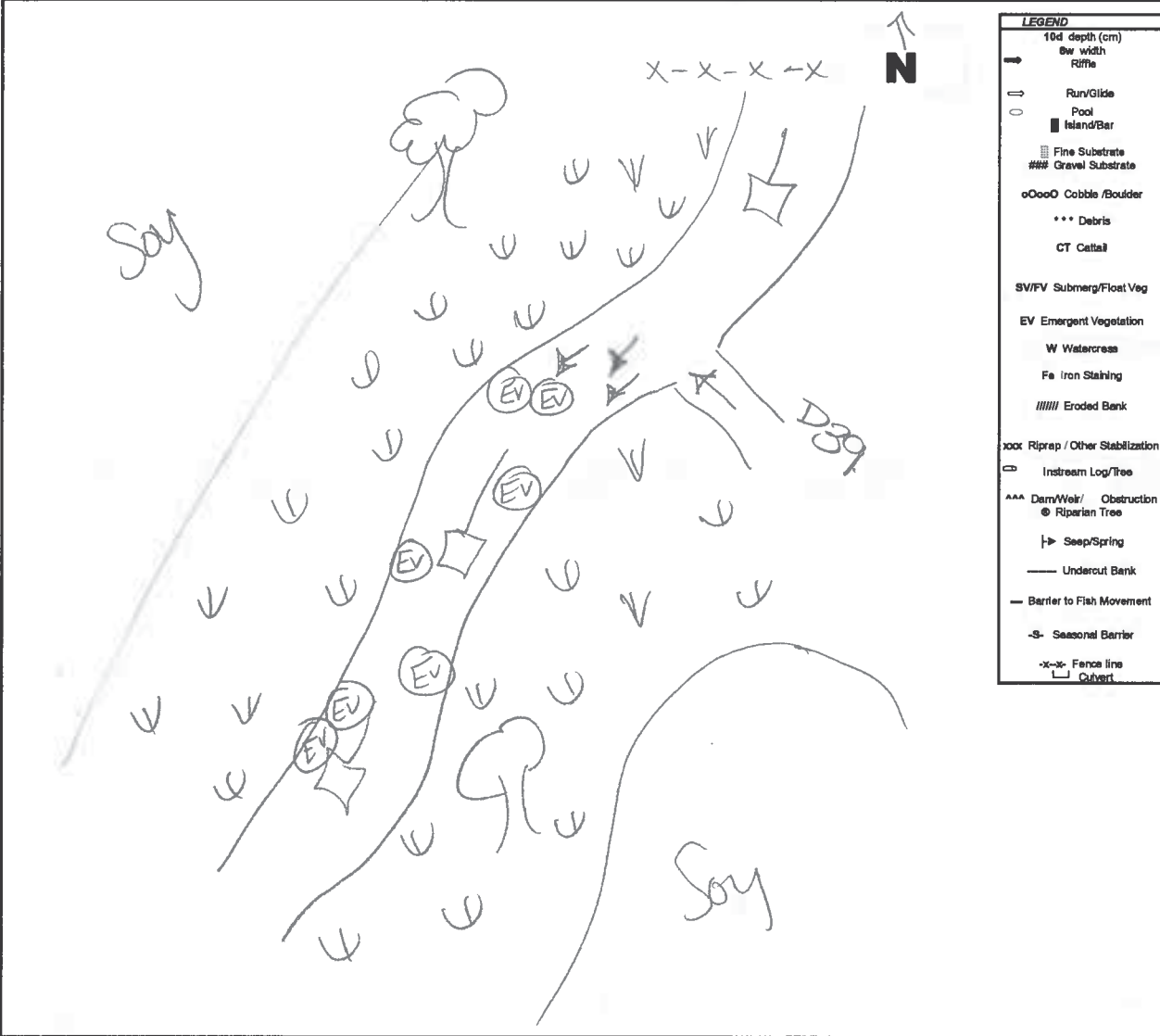
# Water Bodies Assessment Field Collection Form

**AECOM**

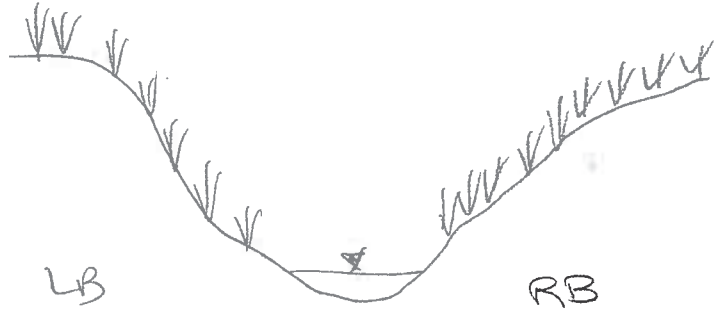
Page 4 of 4

## Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# 2485 Site ID D38  
2555



**Horizontal View of Channel**



Initial QA/QC By: L. Bentley Date: Aug. 2, 2012 Technical QA/QC By: J. Lane Date: 2nd Aug 2012

**Water Bodies Assessment Field Collection Form**

**AECOM**

Page 1 of 4

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# GSH 2548/ Site ID: 039  
 Date: June 25 / 12 Start time: 9:00 2485 End Time: 10:20  
 Weather Conditions: Sunny 12°C Field Crew: C. Barros, J. EPP  
 Field Notes By: C. Barros

**ASA  
2485**

**Site Location**

Morrison Cree, North of Crediton

**UTM Co-ordinates (continue on page 3 if necessary)**

|                        |                          |                               |
|------------------------|--------------------------|-------------------------------|
| Easting: <u>462687</u> | Northing: <u>4795814</u> | Description: <u>039 start</u> |
| Easting: <u>462657</u> | Northing: <u>4795840</u> | Description: <u>039 wq</u>    |
| Easting: <u>462611</u> | Northing: <u>4795863</u> | Description: <u>039 end</u>   |
| Easting: <u>462594</u> | Northing: <u>4795965</u> | Description: <u>038</u>       |

**Surrounding Landuse**

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other

**Type of Watercourse**

Intermittent  Channelized   
 Permanent  Natural Channel   
 Ephemeral

Description:

begins in

Description:

Historically channelized - in forest naturalizing

**Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)**

Tile drains - headwater ones not flowing, midway tiles + seeps flowing

Is any portion of the water body underground or not as mapped? **Y / N**

If Yes describe:

GPS Coordinate: Easting - \_\_\_\_\_ Northing - \_\_\_\_\_ Description - \_\_\_\_\_

**Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)**

flat

**In-Situ Water Quality**

WT (°C): 9.1 AT (°C): 12  
 pH: 6.78 Cond (µs/cm): 519  
 D.O. (mg/L): 4.72  
 Water Clarity: Clear  Turbid

Water Colour: n/a

Notes: wq. taken in shallow riffle

**Ground Water and Seepage indicators**

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling    
 Other

Details:

potential bank seepage but could be buried tile drains

Water Bodies Assessment Field Collection Form

\* Assessment done for Channel in forest

| Stream Morphology             |                                 |                                     |                                     |
|-------------------------------|---------------------------------|-------------------------------------|-------------------------------------|
| Site Length (m): 100m         |                                 | Bank Stability:                     |                                     |
| Channel Dimensions            |                                 | Stable                              | Slightly unstable                   |
| Mean Wetted Width (m): 1m     | Mean Wetted Depth (m): 0.08     | Left Bank <input type="checkbox"/>  | <input checked="" type="checkbox"/> |
| Mean Bankfull Width (m): 3    | Mean Bankfull Depth (m): 0.30   | Right Bank <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Mean Top of Bank Width (m): 4 | Mean Top of Bank Depth (m): 1.5 | Description: Evidence of erosion    |                                     |

Flow Description: (high or low flow conditions, stagnant, etc)  
 slow flow, low water level

| Substrate (<=>) |                                       | Morphological Structure (%)                |        |     |      |
|-----------------|---------------------------------------|--------------------------------------------|--------|-----|------|
| Bo - Boulder    | Description<br>Si = Cl = Sa = Co > Bo | Pool                                       | Riffle | Run | Flat |
| Co - Cobble     |                                       | 5                                          | 25     | 20  | 50   |
| Gr - Gravel     |                                       | Notes: not a sequence of riffle, run, pool |        |     |      |
| Sa - Sand       |                                       |                                            |        |     |      |
| Si - Silt       |                                       |                                            |        |     |      |
| Cl - Clay       |                                       |                                            |        |     |      |
| MK - Muck       |                                       |                                            |        |     |      |
| DT - Detritus   |                                       |                                            |        |     |      |

| Instream Cover (%) 80 |              |          |        |                     |      |                                    |
|-----------------------|--------------|----------|--------|---------------------|------|------------------------------------|
| Other                 | Woody Debris | Boulders | Cobble | Aquatic Vegetation* | None | Undercut Banks                     |
|                       | 25           | 10       | 40     |                     |      | Average Depth: 0.25<br>(% Cover) 5 |

Note: Low = 0 - 30% ; Moderate = 30 - 75% ; High = 75 - 100%  
 \*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)

| Canopy Cover (% closed cover): |                                     |       |                          | Types of Cover (% cover) |    |                     |    |
|--------------------------------|-------------------------------------|-------|--------------------------|--------------------------|----|---------------------|----|
| 100-90%                        | <input checked="" type="checkbox"/> | 30-1% | <input type="checkbox"/> | Trees                    | 90 | Shrubs              | 12 |
| 90-60%                         | <input type="checkbox"/>            | 0%    | <input type="checkbox"/> | Grasses                  |    | Herbaceous          |    |
| 60-30%                         | <input type="checkbox"/>            |       |                          |                          |    | Man-made structures |    |
|                                |                                     |       |                          |                          |    | Other               |    |

Note: Low = 0 - 30% ; Moderate = 30 - 60% ; High = 60 - 100%  
 Notes: (vegetation species, types of structures)  
 oak, sugar maple, dogwood

| Riparian Vegetation                                           |                 |
|---------------------------------------------------------------|-----------------|
| Width and Description of riparian vegetation: LB - 15m forest | RB - 15m forest |

Overhanging Vegetation Present  / N % Overhanging Vegetation: 2  
 Description of Overhanging Vegetation: dogwood overhanging at property line

| Obstructions to Fish Passage                          |                          |                  |                                     |
|-------------------------------------------------------|--------------------------|------------------|-------------------------------------|
| None Observed                                         | <input type="checkbox"/> | Man-Made         | <input type="checkbox"/>            |
| Natural                                               | <input type="checkbox"/> | Low Flow Barrier | <input checked="" type="checkbox"/> |
| Description of Barrier: no water from start up to 50m |                          |                  |                                     |
| Height of Barrier (m)                                 |                          | GPS Coordinates: |                                     |



Water Bodies Assessment Field Collection Form

AECOM

Date: June 25/12

Land Parcel/Site ID:

GSH 2548/2485

Page 3 of 4

D39

Other General Comments Regarding the Study Area:

D39 is a permanent channel feature but is tile drain fed and at time of investigation the headwater area up to 50m was dry - tile drains were not flowing. 50m to edge of forest was a slow, low water level watercourse in stream cover high of cobbles + woody debris, potential seeps + tile drains feeding stream.

D39 on GSH 2485 appeared channelized and had dense grasses

Additional UTM Coordinates:

on banks, could not see watercourse past 5m

ASA

D38 -> could not see from GSH 2548

| Photo log        |                                         |           |             |
|------------------|-----------------------------------------|-----------|-------------|
| Picture #        | Description                             | Picture # | Description |
| 1a               | sheet                                   |           |             |
| 1-b              | headwater area                          |           |             |
| 7-14             | channel overview after tile + seep feed |           |             |
| 15               | ASA for 2485                            |           |             |
| <del>16-18</del> | <del>XXXXXXXXXXXXXXXX</del>             |           |             |
|                  |                                         |           |             |
|                  |                                         |           |             |
| D38              |                                         |           |             |
| 1                | map                                     |           |             |
| 2                | ASA D38                                 |           |             |
|                  |                                         |           |             |
|                  |                                         |           |             |
|                  |                                         |           |             |

Water Bodies Assessment Field Collection Form

AECOM

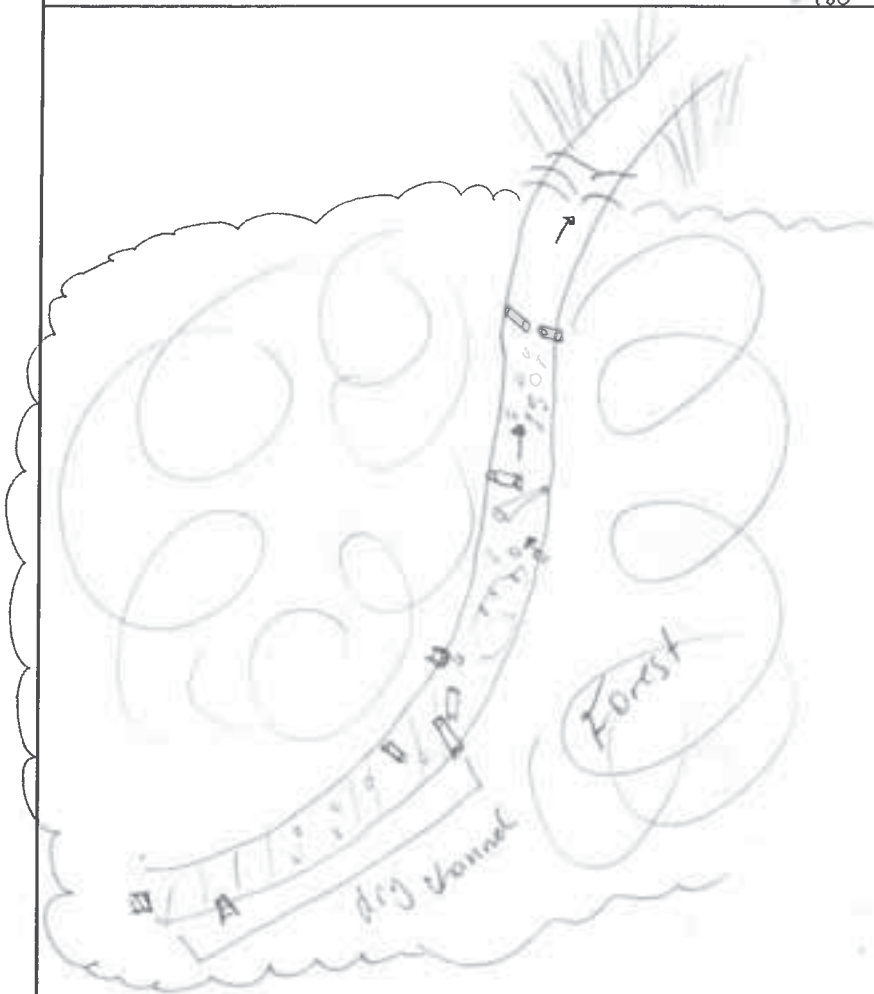
Page 4 of 4

Watercourse Sketch

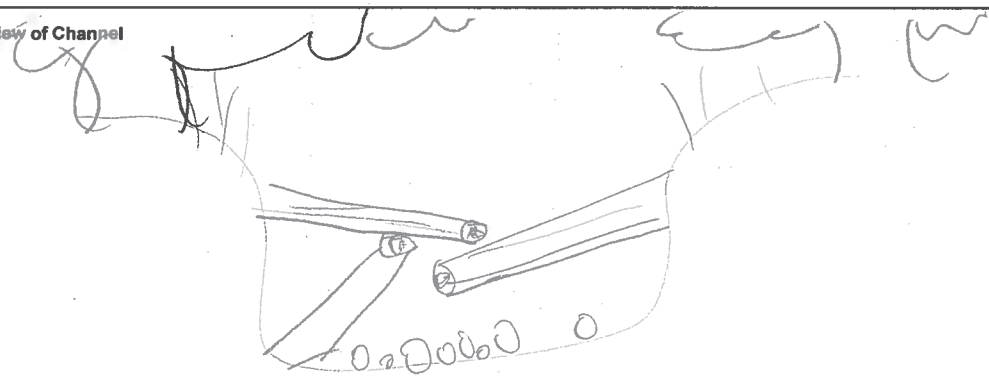
Study Area: Jericho Goshen Bluewater Land Parcel# 6SH 2548 Site ID 039  
2485

N →

| LEGEND |                              |
|--------|------------------------------|
| →      | 10d depth (cm)               |
| →      | Bw width                     |
| →      | Riffle                       |
| ⇨      | Run/Glide                    |
| ○      | Pool                         |
| ■      | Island/Bar                   |
| □      | Fine Substrate               |
| ###    | Gravel Substrate             |
| oOooO  | Cobble /Boulder              |
| ***    | Debris                       |
| CT     | Cattail                      |
| SV/FV  | Submerg/Float Veg            |
| EV     | Emergent Vegetation          |
| W      | Watercress                   |
| Fe     | Iron Staining                |
|        | Eroded Bank                  |
| xxx    | Riprap / Other Stabilization |
| ☐      | Instream Log/Tree            |
| AAA    | Dam/Weir/ Obstruction        |
| ⊙      | Riparian Tree                |
| ↳      | Seep/Spring                  |
| —      | Undercut Bank                |
| —      | Barrier to Fish Movement     |
| -S-    | Seasonal Barrier             |
| -x-x-  | Fence line                   |
| ⌊      | Culvert                      |



Horizontal View of Channel



Initial QA/QC By: L Bentley

Date: June 26, 2012

Technical QA/QC By: Stutka

Date: July 10/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2485 Site ID: D39

Date: ~~11:30~~ July 10/12 Start time: 14:30 End Time: 1440

Weather Conditions:

Sunny

Field Crew: S. Aitken, G. Ferris

Field Notes By: S. Aitken

Site Location

located east of London Rd, north of Credition

UTM Co-ordinates (continue on page 3 if necessary)

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Surrounding Landuse

- Residential
- Agriculture
- Forest
- Other
- Meadow
- Wetland
- Livestock

Description:

meadow is surrounded by soy bean crops

Type of Watercourse

- Intermittent
- Permanent
- Ephemeral
- Channelized
- Natural Channel

Description:

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

none observed

Is any portion of the water body underground or not as mapped? Y N

If Yes describe:

GPS Coordinate: Easting - \_\_\_\_\_ Northing - \_\_\_\_\_ Description - \_\_\_\_\_

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): \_\_\_\_\_ AT (°C): \_\_\_\_\_  
 pH: \_\_\_\_\_ Cond ( s/cm): \_\_\_\_\_  
 D.O. (mg/L) \_\_\_\_\_  
 Water Clarity: Clear  Turbid

Water Colour:

water not deep enough

Notes:

Ground Water and Seepage Indicators

- Watercress
- Iron Staining
- Bubbling
- Other
- Bank Seepage
- None

Details:

none observed

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                                               |                                         |                                                |                                                      |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------|------------------------------------------------------|
| Site Length (m): <u>N 30m</u>                                                                                   |                                         | Bank Stability:                                |                                                      |
| Channel Dimensions                                                                                              |                                         | Stable                                         | Slightly unstable                                    |
| Mean Wetted Width (m): <u>0.50</u>                                                                              | Mean Wetted Depth (m): <u>0.06</u>      | Left Bank <input checked="" type="checkbox"/>  | <input type="checkbox"/>                             |
| Mean Bankfull Width (m): <u>1.8</u>                                                                             | Mean Bankfull Depth (m): <u>0.60</u>    | Right Bank <input checked="" type="checkbox"/> | <input type="checkbox"/>                             |
| Mean Top of Bank Width (m): <u><del>6.00</del> 3.20</u>                                                         | Mean Top of Bank Depth (m): <u>0.20</u> | Description: <u>well vegetated</u>             |                                                      |
| Flow Description: (high or low flow conditions, stagnant, etc)<br><u>low flow conditions, steep banks</u>       |                                         |                                                |                                                      |
| Substrate (<=>)                                                                                                 |                                         | Habitat                                        |                                                      |
| Bo - Boulder<br>Co - Cobble<br>Gr - Gravel<br>Sa - Sand<br>Si - Silt<br>Cl - Clay<br>MK - Muck<br>DT - Detritus | Description<br><u>Cl &gt; Si</u>        | Morphological Structure (%)                    |                                                      |
|                                                                                                                 |                                         | Pool                                           | Riffle                                               |
|                                                                                                                 |                                         | Run                                            | Flat                                                 |
|                                                                                                                 |                                         |                                                | <u>100</u>                                           |
|                                                                                                                 |                                         | Notes:                                         |                                                      |
| Instream Cover (%)                                                                                              |                                         |                                                |                                                      |
| Other                                                                                                           | Woody Debris                            | Boulders                                       | Cobble                                               |
|                                                                                                                 |                                         |                                                | Aquatic Vegetation* <u>100</u>                       |
|                                                                                                                 |                                         |                                                | None                                                 |
|                                                                                                                 |                                         |                                                | Undercut Banks                                       |
|                                                                                                                 |                                         |                                                | Average Depth: (% Cover)                             |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                      |                                         |                                                |                                                      |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)<br><u>choked w grasses</u>               |                                         |                                                |                                                      |
| Canopy Cover (% closed cover):                                                                                  |                                         | Types of Cover (% cover)                       |                                                      |
| 100-90% <input checked="" type="checkbox"/>                                                                     | 30-1% <input type="checkbox"/>          | Trees                                          | Shrubs                                               |
| 90-60% <input type="checkbox"/>                                                                                 | 0% <input type="checkbox"/>             | Grasses <u>100</u>                             | Herbaceous                                           |
| 60-30% <input type="checkbox"/>                                                                                 |                                         |                                                | Man-made structures                                  |
|                                                                                                                 |                                         |                                                | Other                                                |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                      |                                         |                                                |                                                      |
| Notes: (vegetation species, types of structures)                                                                |                                         |                                                |                                                      |
| Riparian Vegetation                                                                                             |                                         |                                                |                                                      |
| Width and Description of riparian vegetation:                                                                   | LB - <u>&gt;20 meadow</u>               | RB - <u>&gt;20 meadow</u>                      |                                                      |
| Overhanging Vegetation Present <input checked="" type="checkbox"/> N                                            | % Overhanging Vegetation:               |                                                |                                                      |
| Description of Overhanging Vegetation:                                                                          | <u>grasses</u>                          |                                                |                                                      |
| Obstructions to Fish Passage                                                                                    |                                         |                                                |                                                      |
| None Observed <input type="checkbox"/>                                                                          | Man-Made <input type="checkbox"/>       | Natural <input type="checkbox"/>               | Low Flow Barrier <input checked="" type="checkbox"/> |
| Description of Barrier:                                                                                         |                                         |                                                |                                                      |
| Height of Barrier (m)                                                                                           |                                         | GPS Coordinates:                               |                                                      |

**Water Bodies Assessment Field Collection Form**

**AECOM**

Date: July 12/12

Land Parcel/Site ID: 2485 D39 Page 3 of 4

**Other General Comments Regarding the Study Area:**

- Channel is choked w/ grasses
- little flow
- Where D39 flows into D38 is grassed channel

**Additional UTM Coordinates:**

| Photo log |             |           |             |
|-----------|-------------|-----------|-------------|
| Picture # | Description | Picture # | Description |
| 30        | facing v/s  |           |             |
| 31        | facing d/s  |           |             |
|           |             |           |             |
|           |             |           |             |
|           |             |           |             |
|           |             |           |             |
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|           |             |           |             |
|           |             |           |             |
|           |             |           |             |

Water Bodies Assessment Field Collection Form

AECOM

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Watercourse Sketch

Study Area:

Jericho

Goshen

Bluewater

Land Parcel#

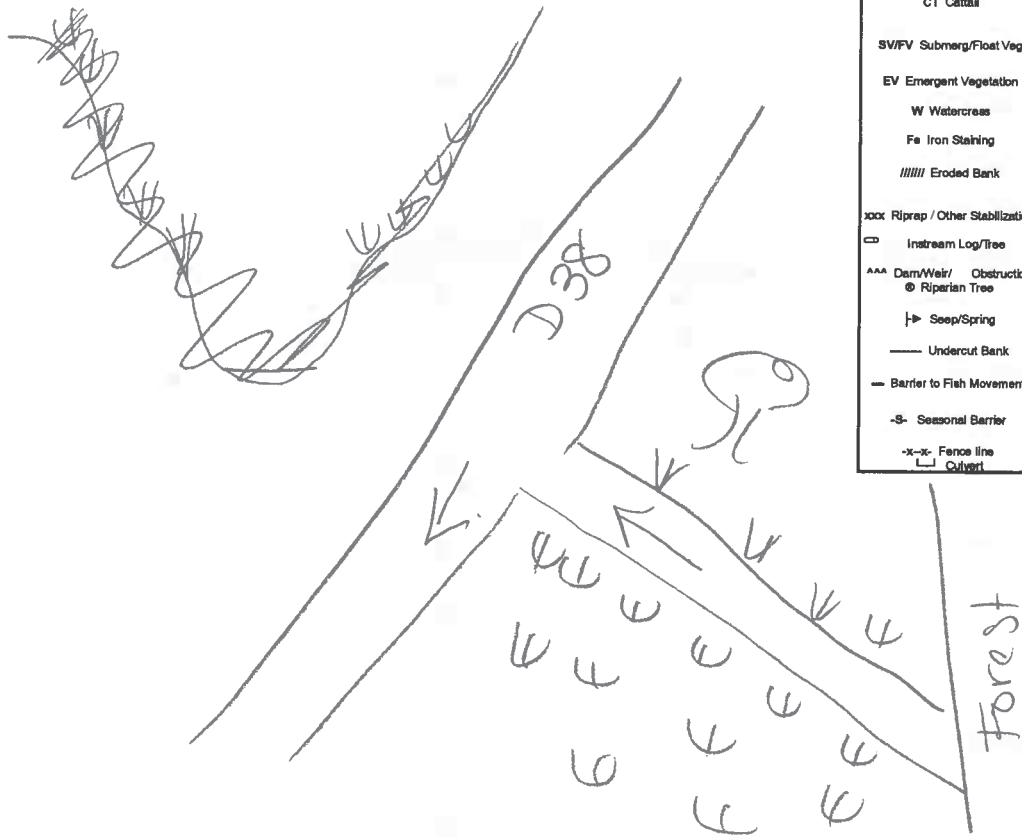
2485

Site ID

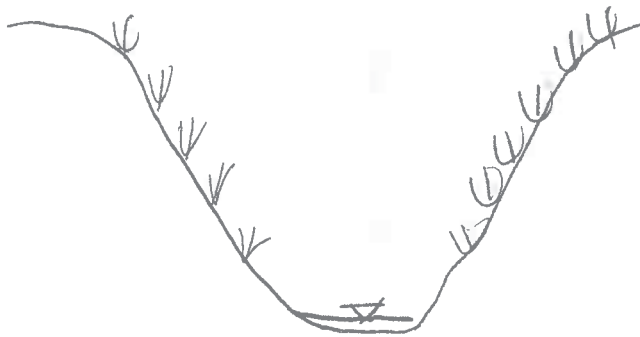
D39



| LEGEND |                              |
|--------|------------------------------|
| →      | 10d depth (cm)               |
| ⇌      | 8w width                     |
| ⇌      | Riffle                       |
| ⇌      | Run/Glide                    |
| ○      | Pool                         |
| ■      | Island/Bar                   |
| ▨      | Fine Substrate               |
| ###    | Gravel Substrate             |
| ○●○○○  | Cobble/Boulder               |
| ***    | Debris                       |
| CT     | Cattail                      |
| SW/FV  | Submerg/Float Veg            |
| EV     | Emergent Vegetation          |
| W      | Watercress                   |
| Fe     | Iron Staining                |
|        | Eroded Bank                  |
| xxx    | Riprap / Other Stabilization |
| ☐      | Instream Log/Tree            |
| AAA    | Dam/Weir/ Obstruction        |
| ⊙      | Riparian Tree                |
| ↳      | Seep/Spring                  |
| —      | Undercut Bank                |
| —      | Barrier to Fish Movement     |
| -S-    | Seasonal Barrier             |
| -x-x-  | Fence line                   |
| □      | Culvert                      |



Horizontal View of Channel



Initial QA/QC By: *L. Bentley*

Date: *Aug. 2, 2012* Technical QA/QC By: *Almer*

Date: *2nd August 2012*

Water Bodies Assessment Field Collection Form

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# GSH 2399 Site ID: D40

Date: June 22/12 Start time: 11:00 End Time: 12:15

**Weather Conditions:**

Sunny, 20°C

Field Crew: C. Barros, J. Epp

Field Notes By: C. Barros

**Site Location**

~~Sunny~~ Sunshine Line, just north of Crediton

ASA  
3068

**UTM Co-ordinates (continue on page 3 if necessary)**

|                        |                          |                            |
|------------------------|--------------------------|----------------------------|
| Easting: <u>472518</u> | Northing: <u>4796570</u> | Description: <u>D40S</u>   |
| Easting: <u>472515</u> | Northing: <u>4796581</u> | Description: <u>D41W9</u>  |
| Easting: <u>472441</u> | Northing: <u>4796766</u> | Description: <u>D40END</u> |

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

**Surrounding Landuse**

|                                                 |                                    |
|-------------------------------------------------|------------------------------------|
| Residential <input type="checkbox"/>            | Meadow <input type="checkbox"/>    |
| Agriculture <input checked="" type="checkbox"/> | Wetland <input type="checkbox"/>   |
| Forest <input type="checkbox"/>                 | Livestock <input type="checkbox"/> |
| Other <input type="checkbox"/>                  |                                    |

**Type of Watercourse**

|                                               |                                                 |
|-----------------------------------------------|-------------------------------------------------|
| Intermittent <input type="checkbox"/>         | Channelized <input checked="" type="checkbox"/> |
| Permanent <input checked="" type="checkbox"/> | Natural Channel <input type="checkbox"/>        |
| Ephemeral <input type="checkbox"/>            |                                                 |

**Description:**

Soy bean

**Description:**

straight

**Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)**

Tile drain inputs - flowing

Is any portion of the water body underground or not as mapped? Y / N  
If Yes describe:

GPS Coordinate: Easting - \_\_\_\_\_ Northing - \_\_\_\_\_ Description - \_\_\_\_\_

**Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)**

flat

**In-Situ Water Quality**

|                                                                                          |                          |
|------------------------------------------------------------------------------------------|--------------------------|
| WT (°C): <u>19.8</u>                                                                     | AT (°C): <u>20</u>       |
| pH: <u>7.93</u>                                                                          | Cond (µs/cm): <u>581</u> |
| D.O. (mg/L) <u>3.53</u>                                                                  |                          |
| Water Clarity: Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> |                          |

Water Colour: n/a

Notes: Water speed well + watercress present ~ 0.25 m deep

**Ground Water and Seepage Indicators**

|                                                |                                                            |
|------------------------------------------------|------------------------------------------------------------|
| Watercress <input checked="" type="checkbox"/> | Bank Seepage <input type="checkbox"/>                      |
| Iron Staining <input type="checkbox"/>         | None <input type="checkbox"/>                              |
| Bubbling <input type="checkbox"/>              | <u>Bitterness</u> <input checked="" type="checkbox"/>      |
| Other <input type="checkbox"/>                 | <u>Water speedwell</u> <input checked="" type="checkbox"/> |

**Details:**

Mats covering entire watercourse for most of reach - mix of all sp.

### Water Bodies Assessment Field Collection Form

| Stream Morphology                                                                                      |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------|-----------------------------------------------|-----------------------------|-------------------------------------|------------------------------------|--------------------------|--------------------------|
| Site Length (m): 120m                                                                                  |                                                        |                             | Bank Stability:                               |                             |                                     |                                    |                          |                          |
| Channel Dimensions                                                                                     |                                                        |                             | Stable                                        | Slightly unstable           | Moderately unstable                 | Unstable                           |                          |                          |
| Mean Wetted Width (m):                                                                                 | 3                                                      | Mean Wetted Depth (m):      | 0.45                                          | Left Bank                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> |
| Mean Bankfull Width (m):                                                                               | 3.75                                                   | Mean Bankfull Depth (m):    | 0.7                                           | Right Bank                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> |
| Mean Top of Bank Width (m):                                                                            | 5                                                      | Mean Top of Bank Depth (m): | 3                                             | Description: will vegetated |                                     |                                    |                          |                          |
| Flow Description: (high or low flow conditions, stagnant, etc)                                         |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| slow flow, moderate water level                                                                        |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Habitat                                                                                                |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Substrate (< = >)                                                                                      |                                                        |                             | Morphological Structure (%)                   |                             |                                     |                                    |                          |                          |
| Bo - Boulder                                                                                           | Description<br>si = sa = mk top layer to gravel bottom |                             | Pool                                          | Riffle                      | Run                                 | Flat                               |                          |                          |
| Co - Cobble                                                                                            |                                                        |                             |                                               |                             |                                     | 100                                |                          |                          |
| Gr - Gravel                                                                                            |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Sa - Sand                                                                                              |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Si - Silt                                                                                              |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Cl - Clay                                                                                              |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| MK - Muck                                                                                              |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| DT - Detritus                                                                                          |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Notes: no meanders                                                                                     |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Instream Cover (%) 70                                                                                  |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Other                                                                                                  | Woody Debris                                           | Boulders                    | Cobble                                        | Aquatic Vegetation*         | None                                | Undercut Banks                     |                          |                          |
|                                                                                                        |                                                        |                             |                                               | 80                          |                                     | Average Depth: 0.2m<br>(% Cover) 5 |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                             |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)                                 |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| pondweed > bitter melon, water speedwell, w.c., grasses > arrowhead, water plantain, Cocksfoot, sedges |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Canopy Cover (% closed cover):                                                                         |                                                        |                             | Types of Cover (% cover)                      |                             |                                     |                                    |                          |                          |
| 100-90%                                                                                                | <input type="checkbox"/>                               | 30-1%                       | <input type="checkbox"/>                      | Trees                       | Shrubs                              | Man-made structures                |                          |                          |
| 90-60%                                                                                                 | <input checked="" type="checkbox"/>                    | 0%                          | <input type="checkbox"/>                      | Grasses                     | Herbaceous                          | Other                              |                          |                          |
| 60-30%                                                                                                 | <input type="checkbox"/>                               |                             |                                               | 90                          | 10                                  |                                    |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                             |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Notes: (vegetation species, types of structures)                                                       |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| grasses in stream                                                                                      |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Riparian Vegetation                                                                                    |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Width and Description of riparian vegetation:                                                          |                                                        |                             | Width and Description of riparian vegetation: |                             |                                     |                                    |                          |                          |
| LB - 1m - meadow                                                                                       |                                                        |                             | RB - 1m - meadow                              |                             |                                     |                                    |                          |                          |
| Overhanging Vegetation Present <input checked="" type="checkbox"/> N                                   |                                                        |                             | % Overhanging Vegetation: 8                   |                             |                                     |                                    |                          |                          |
| Description of Overhanging Vegetation:                                                                 |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| some dogwood overhanging just bankside - not over entire stream                                        |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Obstructions to Fish Passage                                                                           |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| None Observed                                                                                          | <input checked="" type="checkbox"/>                    | Man-Made                    | <input type="checkbox"/>                      | Natural                     | <input type="checkbox"/>            | Low Flow Barrier                   | <input type="checkbox"/> |                          |
| Description of Barrier:                                                                                |                                                        |                             |                                               |                             |                                     |                                    |                          |                          |
| Height of Barrier (m)                                                                                  |                                                        |                             | GPS Coordinates:                              |                             |                                     |                                    |                          |                          |



**Water Bodies Assessment Field Collection Form**

**AECOM**

Date: June 22/12

Land Parcel/Site ID:

GSH 2399/  
3068

040  
Page 3 of 4

**Other General Comments Regarding the Study Area:**

- green frog heard calling
- school of fish observed by culvert (in pool), 4M observed in channel - in pondweed

Watercourse straight channelized stream w stable banks.  
Vegetation mats <sup>almost entire</sup> cover watercourse. Substrate a mix of sand, silt + gravel.

**Additional UTM Coordinates:**

Could not see actual watercourse on GSH3068 but could see channel corridor + it look similar width + veg.

ASA

**Photo log**

| Picture # | Description      | Picture # | Description |
|-----------|------------------|-----------|-------------|
| 1a        | Sheet            |           |             |
| 1b        | ASA 3068         |           |             |
| 2-15      | channel overview |           |             |
|           |                  |           |             |
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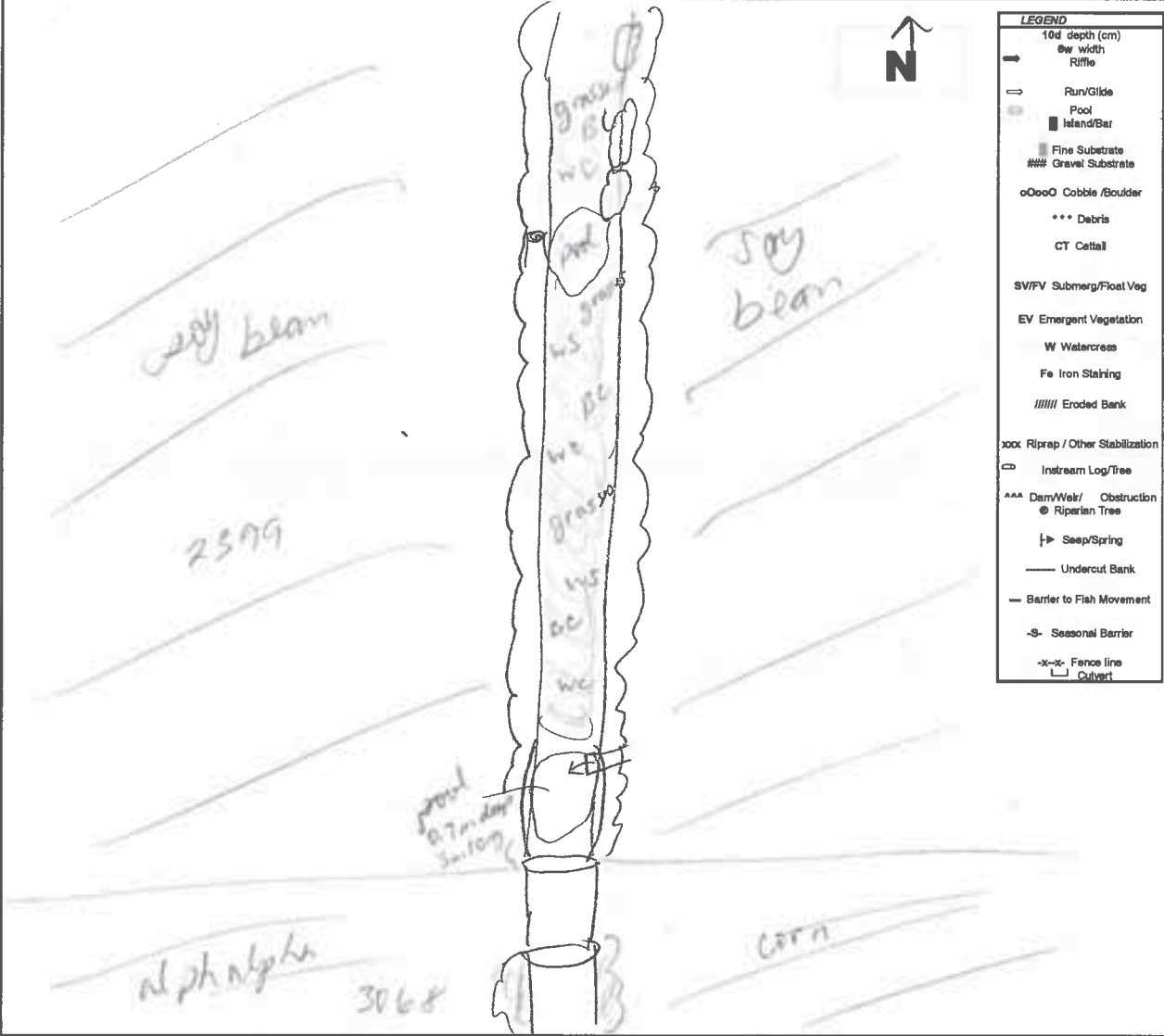
# Water Bodies Assessment Field Collection Form

**AECOM**

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## Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# 65W 2399/3068 Site ID D40



Initial QA/QC By: L Bentley Date: June 26, 2012 Technical QA/QC By: [Signature] Date: July 7, 12

**Assessment of Non-Water Body  
(update to mapping required)**

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# GSH 2399/3068 Site ID: D41  
 Date: June 22/12 Start time: 11:30 End Time: 12:15

Weather Conditions: Sunny 25°C Field Crew: C. Boros, S. Epp  
 Field Notes By: J. Epp

Site Location  
Sunshine Line, East of end of Crediton Rd.

**UTM Co-ordinates**

|                        |                          |                                              |
|------------------------|--------------------------|----------------------------------------------|
| Easting: <u>472649</u> | Northing: <u>4796588</u> | Description: <u>D41</u>                      |
| Easting: <u>472808</u> | Northing: <u>4796799</u> | Description: <u>D41 Snake - gutter</u>       |
| Easting: <u>472810</u> | Northing: <u>4796717</u> | Description: <u>D41 END (edge of forest)</u> |

**Surrounding Landuse**

|                                                 |                                    |
|-------------------------------------------------|------------------------------------|
| Residential <input type="checkbox"/>            | Meadow <input type="checkbox"/>    |
| Agriculture <input checked="" type="checkbox"/> | Wetland <input type="checkbox"/>   |
| Forest <input checked="" type="checkbox"/>      | Livestock <input type="checkbox"/> |
| Other <input type="checkbox"/>                  |                                    |

Description: soybeans - GSH 2399  
corn - GSH 3068  
Forest at edge

**Ground Water and Seepage Indicators**

|                                        |                                          |
|----------------------------------------|------------------------------------------|
| Watercress <input type="checkbox"/>    | Bank Seepage <input type="checkbox"/>    |
| Iron Staining <input type="checkbox"/> | None <input checked="" type="checkbox"/> |
| Bubbling <input type="checkbox"/>      |                                          |

Details: None observed

**Feature Description**

- Is the mapped water body any of the below:
- 1) a grassed waterway? Y / N
  - 2) Temporary channel for surface drainage, that can be tilled or driven through? Y / N
  - 3) Rock chutes or spillways? Y / N
  - 4) Roadside ditches that are not connected or do not contain a permanent or intermittent stream? Y / N
  - 5) Temporarily ponded areas that are normally farmed? Y / N
  - 6) Artificial bodies of water intended for storage, treatment for farming purposes? Y / N
  - 8) Any other:

Description: (i.e. length of change, if it reappears, if there is evidence of water)  
Possibly tile drained, at edge of forest running water could be heard. But could not see on GSH ~~2399~~ due to rock piles ~ 7 ft high. Ploughed through.

**Photo log**

| Picture #  | Description               | Picture # | Description |
|------------|---------------------------|-----------|-------------|
| <u>10</u>  | <u>sheet</u>              |           |             |
| <u>1b</u>  | <u>looking south</u>      |           |             |
| <u>2-3</u> | <u>looking Northeast.</u> |           |             |
| <u>4-5</u> | <u>Edge of forest</u>     |           |             |

ASA  
 3068  
 29102

Assessment of Non-Water Body  
(update to mapping required)

AECOM

Date: June 22/12

Land Parcel/Site ID:

GSH2399/3068/2962

Page 2 of 2

D41

Site Sketch



SOY Bean

ROCK  
PILE

D41 - DOES NOT EXIST

Watercourse may exist  
in forest, heard  
running water

lane way

CORN

FOREST

Initial QA/QC: L. Bentley June 26, 2012  
Technical QA/QC: S. Sullivan Aug 2/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Gosher Bluewater Land Parcel# GSH2255 Site ID: WMA 0173 043

Date: June 11/12 Start time: 15:40 End Time: 16:30

Weather Conditions:

Cloudy, 30°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Crediton Rd, west of Parr Line

UTM Co-ordinates (continue on page 3 if necessary)

|                        |                          |                                   |
|------------------------|--------------------------|-----------------------------------|
| Easting: <u>454850</u> | Northing: <u>4794053</u> | Description: <u>043 start</u>     |
| Easting: <u>454865</u> | Northing: <u>4793886</u> | Description: <u>043 mid</u>       |
| Easting: <u>454829</u> | Northing: <u>4793807</u> | Description: <u>043 pophuckle</u> |
| Easting: <u>454777</u> | Northing: <u>4793665</u> | Description: <u>043 end</u>       |

Surrounding Landuse

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other

Description:

soy bean fields

Type of Watercourse

Intermittent  Channelized   
 Permanent  Natural Channel   
 Ephemeral

Description:

does not meander

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

Tile drains observed - one flowing

Is any portion of the water body underground or not as mapped? Y (N)  
 If Yes describe:

GPS Coordinate Easting - Northing - Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat.

In-Situ Water Quality

WT (°C): 20.7 AT (°C): 30°C  
 pH: 7.35 Cond (µm/cm): 675  
 D.O. (mg/L): 5.80  
 Water Clarity: Clear  Turbid St.

Water Colour: brown when in turbid area  
9 slower moving

Notes:

Water depth 0.2 m - dead cattail  
+ submerged veg present

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling  water   
 Other  speed well

Details:

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                                                              |                                     |                                  |                                                |                          |                          |                               |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------|------------------------------------------------|--------------------------|--------------------------|-------------------------------|
| Site Length (m): 200m                                                                                                          |                                     |                                  | Bank Stability:                                |                          |                          |                               |
| Channel Dimensions                                                                                                             |                                     |                                  | Stable                                         | Slightly unstable        | Moderately unstable      | Unstable                      |
| Mean Wetted Width (m): 1.7                                                                                                     | Mean Wetted Depth (m): 0.15         |                                  | Left Bank <input checked="" type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      |
| Mean Bankfull Width (m): 2.5                                                                                                   | Mean Bankfull Depth (m): 0.5        |                                  | Right Bank <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      |
| Mean Top of Bank Width (m): 4                                                                                                  | Mean Top of Bank Depth (m): 2.5     |                                  | Description: well vegetated                    |                          |                          |                               |
| Flow Description: (high or low flow conditions, stagnant, etc)<br>slow flow, low water level                                   |                                     |                                  |                                                |                          |                          |                               |
| Habitat                                                                                                                        |                                     |                                  |                                                |                          |                          |                               |
| Substrate (<=>)                                                                                                                |                                     |                                  | Morphological Structure (%)                    |                          |                          |                               |
| Bo - Boulder                                                                                                                   | Description                         |                                  | Pool                                           | Riffle                   | Run                      | Flat                          |
| Co - Cobble                                                                                                                    | mk = s <sub>1</sub> = 21 > sa       |                                  | 5                                              |                          |                          | 95                            |
| Gr - Gravel                                                                                                                    |                                     |                                  | Notes: small pools observed                    |                          |                          |                               |
| Sa - Sand                                                                                                                      |                                     |                                  |                                                |                          |                          |                               |
| Si - Silt                                                                                                                      |                                     |                                  |                                                |                          |                          |                               |
| Cl - Clay                                                                                                                      |                                     |                                  |                                                |                          |                          |                               |
| MK - Muck                                                                                                                      |                                     |                                  |                                                |                          |                          |                               |
| DT - Detritus                                                                                                                  |                                     |                                  |                                                |                          |                          |                               |
| Instream Cover (%) 85                                                                                                          |                                     |                                  |                                                |                          |                          |                               |
| Other                                                                                                                          | Woody Debris                        | Boulders                         | Cobble                                         | Aquatic Vegetation*      | None                     | Undercut Banks                |
| 30                                                                                                                             | /                                   | /                                | /                                              | 55                       | /                        | Average Depth: /<br>(% Cover) |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                                     |                                     |                                  |                                                |                          |                          |                               |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)<br>cattails > grasses, water speedwell > algae - blooms |                                     |                                  |                                                |                          |                          |                               |
| Canopy Cover (% closed cover):                                                                                                 |                                     |                                  | Types of Cover (% cover)                       |                          |                          |                               |
| 100-90%                                                                                                                        | <input type="checkbox"/>            | 30-1%                            | <input type="checkbox"/>                       | Trees 10                 | Shrubs 40                | Man-made structures           |
| 90-60%                                                                                                                         | <input type="checkbox"/>            | 0%                               | <input type="checkbox"/>                       | Grasses 50               | Herbaceous               | Other                         |
| 60-30%                                                                                                                         | <input checked="" type="checkbox"/> |                                  |                                                |                          |                          |                               |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                                     |                                     |                                  |                                                |                          |                          |                               |
| Notes: (vegetation species, types of structures)<br>cattail > shrubs - dog wood, willow, grasses - emergent                    |                                     |                                  |                                                |                          |                          |                               |
| Riparian Vegetation                                                                                                            |                                     |                                  |                                                |                          |                          |                               |
| Width and Description of riparian vegetation:                                                                                  |                                     |                                  | Riparian Vegetation                            |                          |                          |                               |
| LB - < 0.5m - meadow                                                                                                           |                                     |                                  | RB - < 0.5 - meadow                            |                          |                          |                               |
| Overhanging Vegetation Present <input checked="" type="checkbox"/> N                                                           |                                     |                                  | % Overhanging Vegetation: 7                    |                          |                          |                               |
| Description of Overhanging Vegetation: dogwood + willow - dense cover sporadically                                             |                                     |                                  |                                                |                          |                          |                               |
| Obstructions to Fish Passage                                                                                                   |                                     |                                  |                                                |                          |                          |                               |
| None Observed <input checked="" type="checkbox"/>                                                                              | Man-Made <input type="checkbox"/>   | Natural <input type="checkbox"/> | Low Flow Barrier <input type="checkbox"/>      |                          |                          |                               |
| Description of Barrier:                                                                                                        |                                     |                                  |                                                |                          |                          |                               |
| Height of Barrier (m)                                                                                                          |                                     |                                  | GPS Coordinates:                               |                          |                          |                               |

dead cattails

Water Bodies Assessment Field Collection Form

AECOM

Date: June 11/12

Land Parcel/Site ID:

RSH 2255

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~~12#~~ 043

Other General Comments Regarding the Study Area:

Watercourse is a straight channelized feature, there is high instream cover due to veg debris, cattail + water speedwell. The substrate is soft. Canopy cover is moderate

- Snapping turtle observed.

Additional UTM Coordinates:

Photo log

| Picture # | Description      | Picture # | Description |
|-----------|------------------|-----------|-------------|
| 1a        | Sheet            |           |             |
| 1-2       | road culvert     |           |             |
| 3-14      | Channel overview |           |             |
| 15        | Snapping turtle  |           |             |
| 16-17     | Channel overview |           |             |
|           |                  |           |             |
|           |                  |           |             |
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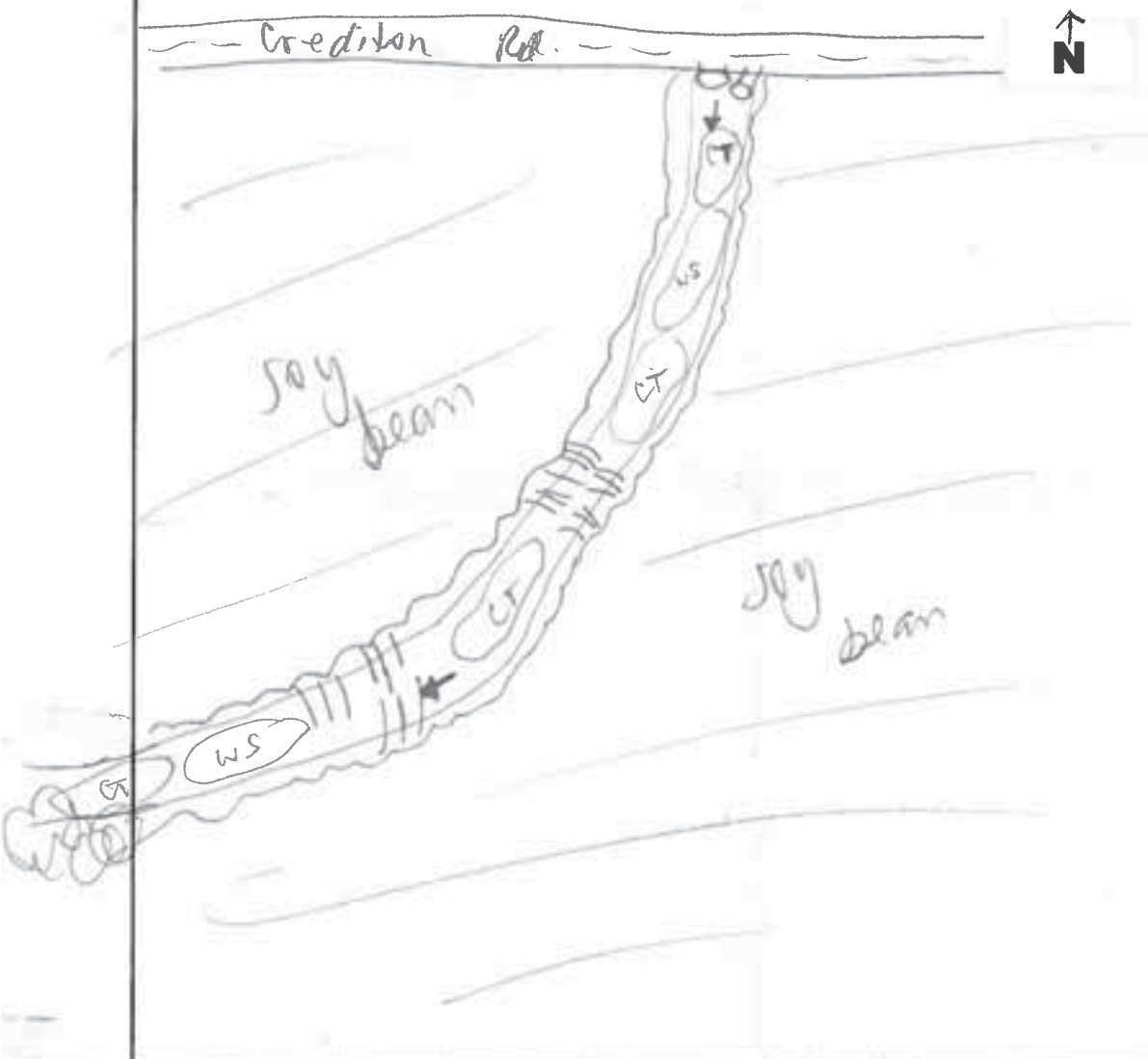
# Water Bodies Assessment Field Collection Form

**AECOM**

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## Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# SH 2255 Site ID 2299 D43



| LEGEND                       |       |
|------------------------------|-------|
| 10d depth (cm)               | →     |
| 8w width                     | ⇨     |
| Riffle                       | ⇨     |
| Run/Glide                    | ⇨     |
| Pool                         | ○     |
| Island/Bar                   | ■     |
| Fine Substrate               | ▨     |
| Gravel Substrate             | ###   |
| Cobble/Boulder               | oOooO |
| Debris                       | ***   |
| Cattail                      | CT    |
| Submerg/Floet Veg            | SV/FV |
| Emergent Vegetation          | EV    |
| Watercress                   | W     |
| Iron Staining                | Fe    |
| Eroded Bank                  |       |
| Riprap / Other Stabilization | xxx   |
| Instream Log/Tree            | ☐     |
| Dam/Weir/ Obstruction        | AAA   |
| Riparian Tree                | ⊙     |
| Seep/Spring                  | ⊥     |
| Undercut Bank                | —     |
| Barrier to Fish Movement     | - -   |
| Seasonal Barrier             | -S-   |
| Fence line                   | -X-X- |
| Culvert                      | ⊃     |

### Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: June 20, 2012

Technical QA/QC By: [Signature]

Date: July 9/12



Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater Land Parcel# 658 1068 Site ID: Turbine 63 (D44)  
 Date: April 18/12 Start time: 11:20 End Time: 12:20  
 Weather Conditions: Sunny, 10°C Field Crew: C. Bores, S. Lohnes  
 Field Notes By: C. Bores

Site Location

Turbine 63 Duffer area  
 → Accessed by ~~XXXXXX~~ Greenway dr.

Co-ordinates (reference on page 2 if necessary)

|                  |                    |                        |
|------------------|--------------------|------------------------|
| Easting: 0438374 | Northing: 478 7766 | Description: East end  |
| Easting: 0438288 | Northing: 478 7779 | Description: Rock pile |
| Easting: 0438289 | Northing: 478 7857 | Description: North end |
| Easting:         | Northing:          | Description:           |

Surrounding Landuse

Type of Watercourse

|                                                 |                                    |                                               |                                                 |
|-------------------------------------------------|------------------------------------|-----------------------------------------------|-------------------------------------------------|
| Residential <input type="checkbox"/>            | Meadow <input type="checkbox"/>    | Intermittent <input type="checkbox"/>         | Channelized <input checked="" type="checkbox"/> |
| Agriculture <input checked="" type="checkbox"/> | Wetland <input type="checkbox"/>   | Permanent <input checked="" type="checkbox"/> | Natural Channel <input type="checkbox"/>        |
| Forest <input type="checkbox"/>                 | Livestock <input type="checkbox"/> | Ephemeral <input type="checkbox"/>            |                                                 |
| Other <input type="checkbox"/>                  |                                    |                                               |                                                 |

Description: ~~XXXXXX~~ follow/crop  
 Description: straight

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

- none observed

Is any portion of the water body underground or not as mapped? Y / (N)  
 If Yes describe:

GPS Coordinate: Easting - Northing - Description -  
 Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In Situ Water Quality

Ground Water and Seepage Indicators

WT (°C): 12.5 AT (°C): 10°C  
 pH: 7.8 Cond (s/cm): 624  
 D.O. (mg/L): ~~11.3~~ 11.3  
 Water Clarity: Clear  Turbid

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling   
 Other

Water Colour: clear

Details:

Notes:

## Water Bodies Assessment Field Collection Form

| <b>Site Length (m):</b> <i>40m</i>                                                                                                                               |                                      | <b>Bank Stability:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------|-------------------|----------------------------------|----------|-----------------------------------------------|--------------------------|--------------------------|-------------------------------|------------------------------------------------|--------------------------|--------------------------|--------------------------|
| <b>Channel Dimensions</b>                                                                                                                                        |                                      | <table style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">Stable</td> <td style="width: 25%;">Slightly unstable</td> <td style="width: 25%;">Moderately unstable</td> <td style="width: 25%;">Unstable</td> </tr> <tr> <td>Left Bank <input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank <input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> |                                 | Stable              | Slightly unstable | Moderately unstable              | Unstable | Left Bank <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>      | Right Bank <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Stable                                                                                                                                                           | Slightly unstable                    | Moderately unstable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Unstable                        |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Left Bank <input checked="" type="checkbox"/>                                                                                                                    | <input type="checkbox"/>             | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/>        |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Right Bank <input checked="" type="checkbox"/>                                                                                                                   | <input type="checkbox"/>             | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/>        |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Mean Wetted Width (m): <i>0.8</i>                                                                                                                                | Mean Wetted Depth (m): <i>0.05</i>   | Description: <i>veg bank</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Mean Bankfull Width (m): <i>1.3</i>                                                                                                                              | Mean Bankfull Depth (m): <i>0.5</i>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Mean Top of Bank Width (m): <i>4.5</i>                                                                                                                           | Mean Top of Bank Depth (m): <i>2</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <b>Flow Description: (high or low flow conditions, stagnant, etc)</b><br><i>- no flow observed, stagnant</i>                                                     |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <b>Habitat</b>                                                                                                                                                   |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <b>Substrate (&lt;=&gt;)</b>                                                                                                                                     |                                      | <b>Morphological Structure (%)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Bo - Boulder<br>Co - Cobble<br>Gr - Gravel<br>Sa - Sand<br>Si - Silt<br>Cl - Clay<br>MK - Muck<br>DT - Detritus                                                  | Description<br><br><i>si, sand</i>   | <table border="1" style="width: 100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td></td> <td></td> <td><i>100</i></td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                           | Pool                            | Riffle              | Run               | Flat                             |          |                                               |                          | <i>100</i>               | Notes:<br><br><i>Straight</i> |                                                |                          |                          |                          |
| Pool                                                                                                                                                             | Riffle                               | Run                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Flat                            |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
|                                                                                                                                                                  |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <i>100</i>                      |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <b>Instream Cover (%)</b> <i>75</i>                                                                                                                              |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Other debris <i>debris</i>                                                                                                                                       | Woody Debris                         | Boulders                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cobble                          | Aquatic Vegetation* | None              | Undercut Banks                   |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <i>30%</i>                                                                                                                                                       | <i>10%</i>                           | <i>/</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <i>/</i>                        | <i>35%</i>          | <i>/</i>          | Average Depth (% Cover) <i>/</i> |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                                                                       |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <b>*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)</b><br><i>Phragmites, cattails, wC, algae, grasses</i>                                 |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <b>Canopy Cover (% closed cover):</b>                                                                                                                            |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Types of Cover (% cover)</b> |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| 100-90% <input type="checkbox"/>                                                                                                                                 | 30-1% <input type="checkbox"/>       | Trees <i>35</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 | Shrubs <i>50</i>    |                   | Man-made structures              |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| 90-60% <input checked="" type="checkbox"/>                                                                                                                       | 0% <input type="checkbox"/>          | Grasses <i>15</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 | Herbaceous          |                   | Other                            |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| 60-30% <input type="checkbox"/>                                                                                                                                  |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                                                                       |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Notes: (vegetation species, types of structures)<br><br><i>deciduous</i>                                                                                         |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <b>Riparian Vegetation</b>                                                                                                                                       |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Width of riparian vegetation: <i>1m</i>                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Description of vegetation community surrounding 30 m from watercourse:<br><br><i>deciduous trees, shrubs, grass</i>                                              |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| <b>Obstructions to Fish Passage</b>                                                                                                                              |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| No Obstructions <input checked="" type="checkbox"/> Man-Made <input type="checkbox"/> Natural <input type="checkbox"/> Low Flow Barrier <input type="checkbox"/> |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Description of Barrier:                                                                                                                                          |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |
| Height of Barrier (m)                                                                                                                                            |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | GPS Coordinates:                |                     |                   |                                  |          |                                               |                          |                          |                               |                                                |                          |                          |                          |

Water Bodies Assessment Field Collection Form

D44

AECOM

Date: April 18/12

Land Parcel/Site ID: GST 1068  
Turbine 63

Page 3 of 4

Other General Comments Regarding the Study Area:

- Rock pile at corner [5m x 3m x 0.75m]
- minnows observed.

Watercourse is channelized and ~~highly~~ <sup>moderately</sup> vegetated  
w/ cattail + phragmites followed by grasses + algae.  
Canopy cover is high and a mix of trees + shrubs  
silty sand bottom.

Additional UTM Coordinates:

Photo log

| Picture # | Description       | Picture # | Description |
|-----------|-------------------|-----------|-------------|
| 1-3       | overview          |           |             |
| 4-5       | East channel.     |           |             |
| 6         | Substrate         |           |             |
| 7         | North overview    |           |             |
| 8         | Rock piles        |           |             |
| 9         | elbow             |           |             |
| 10-11     | North branch      |           |             |
| 12        | North - Substrate |           |             |
|           |                   |           |             |
|           |                   |           |             |
|           |                   |           |             |
|           |                   |           |             |

# Water Bodies Assessment Field Collection Form

**AECOM**

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

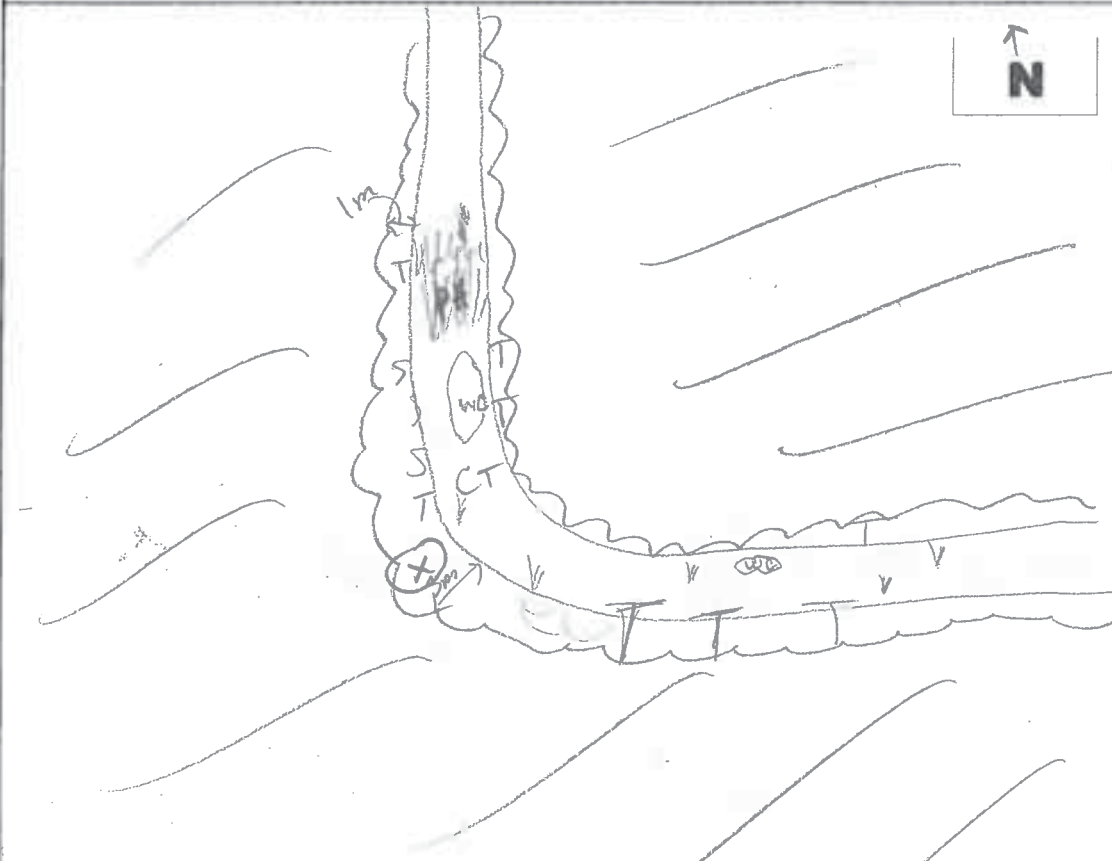
Bluewater

Land Parcel# GS41068

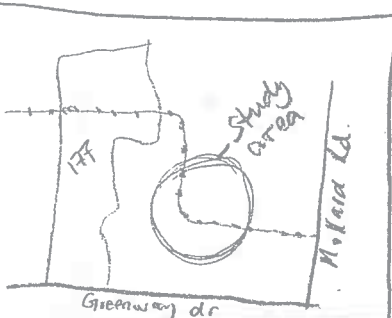
Site ID

Thruway 63

D44



| LEGEND                       |       |
|------------------------------|-------|
| 10d depth (cm)               | →     |
| 6w width                     | →     |
| Riffle                       | →     |
| Run/Glide                    | →     |
| Pool                         | ○     |
| Island/Bar                   | □     |
| Fine Substrate               | ⊠     |
| Gravel Substrate             | ##    |
| Cobble/Boulder               | oOoO  |
| Debris                       | ***   |
| Cattail                      | CT    |
| Submerg/Float Veg            | SV/FV |
| Emergent Vegetation          | EV    |
| Watercress                   | W     |
| Iron Staining                | Fe    |
| Eroded Bank                  |       |
| Riprap / Other Stabilization | xxx   |
| Instream Log/Tree            | ⊃     |
| Dam/Weir / Obstruction       | AAA   |
| Riparian Tree                | ⊙     |
| Seep/Spring                  | ⊢     |
| Undercut Bank                | —     |
| Barrier to Fish Movement     | —     |
| Seasonal Barrier             | -S-   |
| Fence line                   | -x-x- |
| Culvert                      | ⌊     |



⊗ rock pile  
 W - watercress  
 PH - Phragmites  
 W - algae

**Horizontal View of Channel**



Initial QA/QC By: AMS

Date: 1/9/04/2012

Technical QA/QC by Sautka Date: May 3/12

Water Bodies Assessment Field Collection Form

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# GSH 1058 (ASIA) Site ID: DAF 045

Date: July 12/12 Start time: 11:00 End Time: 11:16

Weather Conditions: Sunny, hot Field Crew: S. Aitken, G. Ferris  
Field Notes By: S. Aitken

**Site Location**

located along credyton Rd  
Roadside Survey for GSH 1058

**UTM Co-ordinates (continue on page 3 if necessary)**

Eastings: 449590 Northing: 4793324 Description: at culvert - south side

Eastings: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Eastings: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Eastings: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

| Surrounding Landuse                                           |                                    | Type of Watercourse                                              |                                                 |
|---------------------------------------------------------------|------------------------------------|------------------------------------------------------------------|-------------------------------------------------|
| Residential <input type="checkbox"/>                          | Meadow <input type="checkbox"/>    | Intermittent <input type="checkbox"/>                            | Channelized <input checked="" type="checkbox"/> |
| Agriculture <input checked="" type="checkbox"/>               | Wetland <input type="checkbox"/>   | Permanent <input checked="" type="checkbox"/>                    | Natural Channel <input type="checkbox"/>        |
| Forest <input type="checkbox"/>                               | Livestock <input type="checkbox"/> | Ephemeral <input type="checkbox"/>                               |                                                 |
| Other <input type="checkbox"/>                                |                                    |                                                                  |                                                 |
| Description: <u>South side runs parallel to credyton road</u> |                                    | Description: <u>on south side runs parallel to road in ditch</u> |                                                 |

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)  
yes, large culverts & roadside ditch

Is any portion of the water body underground or not as mapped? Y (N)  
If Yes describe:

GPS Coordinate: Easting - \_\_\_\_\_ Northing - \_\_\_\_\_ Description - \_\_\_\_\_

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)  
rolling towards water body

| In-Situ Water Quality                                                                    |                           | Ground Water and Seepage Indicators    |                                          |
|------------------------------------------------------------------------------------------|---------------------------|----------------------------------------|------------------------------------------|
| WT (°C): <u>17.48</u>                                                                    | AT (°C): <u>29°C</u>      | Watercress <input type="checkbox"/>    | Bank Seepage <input type="checkbox"/>    |
| pH: <u>7.75</u>                                                                          | Cond (µm/cm): <u>2520</u> | Iron Staining <input type="checkbox"/> | None <input checked="" type="checkbox"/> |
| D.O. (mg/L): <u>8.47</u>                                                                 |                           | Bubbling <input type="checkbox"/>      |                                          |
| Water Clarity: Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> |                           | Other <input type="checkbox"/>         |                                          |
| Water Colour: <u>clear</u>                                                               |                           | Details: <u>none observed.</u>         |                                          |
| Notes: <u>WA taken at culvert on south side</u>                                          |                           |                                        |                                          |

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                                                              |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-----------------------------|-------------------------------------|-------------------|---------------------|----------|-----------|-------------------------------------|--------------------------|--------------------------|--------------------------|------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| Site Length (m): <u>~50m</u>                                                                                                   |                                         |                                    | Bank Stability:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Channel Dimensions                                                                                                             |                                         |                                    | <table border="1" style="width:100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> |                          |                          |                             | Stable                              | Slightly unstable | Moderately unstable | Unstable | Left Bank | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Right Bank | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                | Stable                                  | Slightly unstable                  | Moderately unstable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Unstable                 |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Left Bank                                                                                                                      | <input checked="" type="checkbox"/>     | <input type="checkbox"/>           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <input type="checkbox"/> |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Right Bank                                                                                                                     | <input checked="" type="checkbox"/>     | <input type="checkbox"/>           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <input type="checkbox"/> |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Wetted Width (m): <u>1.25</u>                                                                                             | Mean Wetted Depth (m): <u>0.08</u>      | Description: <u>well vegetated</u> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Bankfull Width (m): <u>3.00</u>                                                                                           | Mean Bankfull Depth (m): <u>0.8</u>     |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Top of Bank Width (m): <u>6.00</u>                                                                                        | Mean Top of Bank Depth (m): <u>2.00</u> |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Flow Description: (high or low flow conditions, stagnant, etc)<br><u>low flow conditions</u>                                   |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Habitat                                                                                                                        |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Substrate (<=>)                                                                                                                |                                         |                                    | Morphological Structure (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description<br>Bo - Boulder<br>Co - Cobble<br>Gr - Gravel<br>Sa - Sand<br>Si - Silt<br>Cl - Clay<br>MK - Muck<br>DT - Detritus |                                         |                                    | <table border="1" style="width:100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td></td> <td></td> <td><u>100</u></td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                  |                          |                          | Pool                        | Riffle                              | Run               | Flat                |          |           |                                     | <u>100</u>               |                          |                          |            |                                     |                          |                          |                          |
| Pool                                                                                                                           | Riffle                                  | Run                                | Flat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
|                                                                                                                                |                                         |                                    | <u>100</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| <u>Si → Boulder</u>                                                                                                            |                                         |                                    | Notes: <u>lots of vegetation</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Instream Cover (%)                                                                                                             |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Other                                                                                                                          | Woody Debris                            | Boulders                           | Cobble                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Aquatic Vegetation*      | None                     | Undercut Banks              |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
|                                                                                                                                |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <u>90</u>                |                          | Average Depth:<br>(% Cover) |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                                     |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)<br><u>common reed, grasses, duckweed</u>                |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Canopy Cover (% closed cover):                                                                                                 |                                         |                                    | Types of Cover (% cover)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 100-90%                                                                                                                        | <input type="checkbox"/>                | 30-1%                              | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Trees                    | Shrubs                   | Man-made structures         |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 90-60%                                                                                                                         | <input checked="" type="checkbox"/>     | 0%                                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Grasses <u>50</u>        | Herbaceous <u>50</u>     | Other                       |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 60-30%                                                                                                                         | <input type="checkbox"/>                |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                                     |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Notes: (vegetation species, types of structures)<br><u>aquatic vegetation</u>                                                  |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Riparian Vegetation                                                                                                            |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Width and Description of riparian vegetation:                                                                                  |                                         |                                    | Width and Description of riparian vegetation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| <u>LB - 5m grasses + herbaceous</u>                                                                                            |                                         |                                    | <u>RB - 5m grasses + herbaceous veg</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Overhanging Vegetation Present Y/N: <u>(N)</u>                                                                                 |                                         |                                    | % Overhanging Vegetation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description of Overhanging Vegetation:                                                                                         |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Obstructions to Fish Passage                                                                                                   |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| None Observed                                                                                                                  | <input type="checkbox"/>                | Man-Made                           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Natural                  | <input type="checkbox"/> | Low Flow Barrier            | <input checked="" type="checkbox"/> |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description of Barrier:                                                                                                        |                                         |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Height of Barrier (m)                                                                                                          |                                         |                                    | GPS Coordinates:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                          |                             |                                     |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |

Water Bodies Assessment Field Collection Form

AECOM

Date: July 12/12

Land Parcel/Site ID:

6SH 1058 + 1092  
~~D19~~ D48  
 Page 3 of 4

Other General Comments Regarding the Study Area:

- flows through ditch on south side through box culvert into agri field on north side
- channel choked w/ grasses + herbaceous veg
- cyprinid observed
- green frog seen + heard.
- small pool (no flow) on north side

Additional UTM Coordinates:

Photo log

| Picture # | Description | Picture # | Description |
|-----------|-------------|-----------|-------------|
| 13-15     | South side  |           |             |
| 16-19     | north side  |           |             |
|           |             |           |             |
|           |             |           |             |
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Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

Bluewater

Land Parcel#

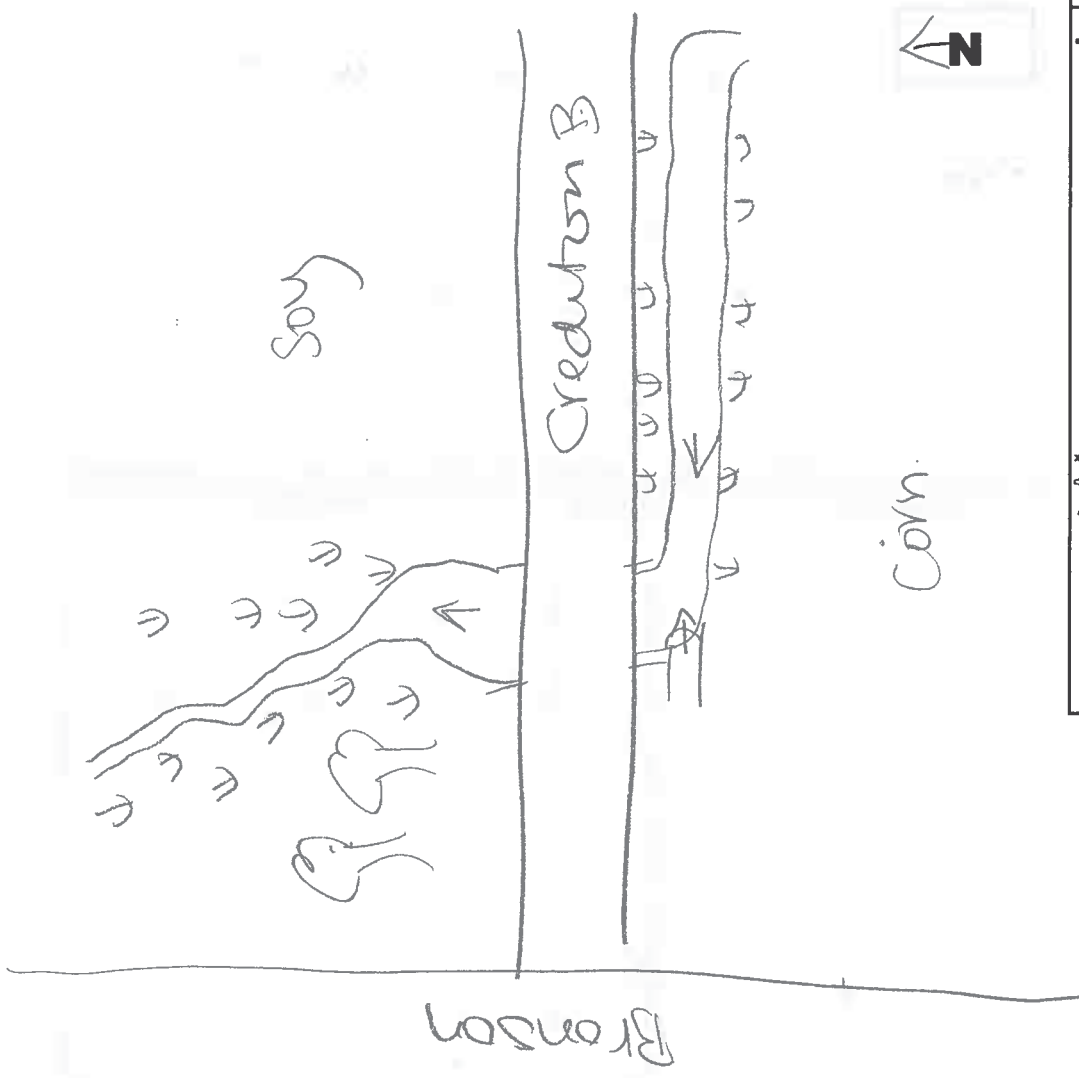
1058  
1092

Site ID

~~D49~~ D45

LEGEND

|                              |       |
|------------------------------|-------|
| 10d depth (cm)               | →     |
| 0w width                     | ⇌     |
| Riffle                       | ⇌     |
| Run/Glide                    | ⇌     |
| Pool                         | ○     |
| Island/Bar                   | ■     |
| Fine Substrate               |       |
| Gravel Substrate             | ###   |
| Cobble/Boulder               | oOooO |
| Debris                       | ***   |
| Cattail                      | CT    |
| Submerg/Float Veg            | SV/FV |
| Emergent Vegetation          | EV    |
| Watercress                   | W     |
| Iron Staining                | Fe    |
| Eroded Bank                  |       |
| Riprap / Other Stabilization | xxx   |
| Instream Log/Tree            | ⊕     |
| Dam/Weir/ Obstruction        | AAA   |
| Riparian Tree                | ⊙     |
| Seep/Spring                  | ↳     |
| Undercut Bank                | —     |
| Barrier to Fish Movement     | —     |
| Seasonal Barrier             | -S-   |
| Fence line                   | -x-x- |
| Culvert                      | ⌊     |



Horizontal View of Channel



Initial QA/QC By: Bentley

Date: Aug. 2, 2012

Technical QA/QC By: [Signature]

Date: 2nd August 2012



Water Bodies Assessment Field Collection Form

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 2147+2160 Home on # D46 Site ID: D46

Date: July 12/12 Start time: 11:20 End Time: 11:30

Weather Conditions: Sunny, hot Field Crew: S. Aitken, G. Ferris  
Field Notes By: S. Aitken

**Site Location**

located along Crediton Road east of Goshen line

**UTM Co-ordinates (continue on page 3 if necessary)** none taken

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

**Surrounding Landuse**

- Residential
- Agriculture
- Forest
- Other
- Meadow
- Wetland
- Livestock

Description: CORN - SE wheat - SW corn on north

**Type of Watercourse**

- Intermittent
- Permanent
- Ephemeral
- Channelized
- Natural Channel

Description: starting to naturalize

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)  
- roadside ditch

Is any portion of the water body underground or not as mapped? Y/N  
If Yes describe:

GPS Coordinate: Easting - \_\_\_\_\_ Northing - \_\_\_\_\_ Description - \_\_\_\_\_

**Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)**

fairly flat Slopes towards waterbody

**In-Situ Water Quality**

WT (°C): 18.19 AT (°C): 29  
pH: 7.61 Cond (µs/cm): 557  
D.O. (mg/L): 1.75  
Water Clarity: Clear  Turbid

Water Colour: brown

Notes: WQ taken on South side at culvert

**Ground Water and Seepage Indicators**

- Watercress
- Iron Staining
- Bubbling
- Other
- Bank Seepage
- None

Details: none observed

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                                                                         |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------|--------------------------|--------|-------------------|---------------------|----------|-----------|-------------------------------------|--------------------------|--------------------------|--------------------------|------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| Site Length (m): <u>~ 20m</u>                                                                                                             |                                        |                                    | Bank Stability:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Channel Dimensions                                                                                                                        |                                        |                                    | <table style="width:100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> |                          |                   |                          | Stable | Slightly unstable | Moderately unstable | Unstable | Left Bank | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Right Bank | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                           | Stable                                 | Slightly unstable                  | Moderately unstable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Unstable                 |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Left Bank                                                                                                                                 | <input checked="" type="checkbox"/>    | <input type="checkbox"/>           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Right Bank                                                                                                                                | <input checked="" type="checkbox"/>    | <input type="checkbox"/>           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Wetted Width (m): <u>1.50</u>                                                                                                        | Mean Wetted Depth (m): <u>0.16</u>     | Description: <u>well vegetated</u> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Bankfull Width (m): <u>4.50</u>                                                                                                      | Mean Bankfull Depth (m): <u>0.25</u>   |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Top of Bank Width (m): <u>7.00</u>                                                                                                   | Mean Top of Bank Depth (m): <u>3.5</u> |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Flow Description: (high or low flow conditions, stagnant, etc)<br><u>low flow</u>                                                         |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Habitat                                                                                                                                   |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Substrate (<=>)                                                                                                                           |                                        |                                    | Morphological Structure (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description: <u>Si</u><br>Bo - Boulder<br>Co - Cobble<br>Gr - Gravel<br>Sa - Sand<br>Si - Silt<br>Cl - Clay<br>MK - Muck<br>DT - Detritus |                                        |                                    | <table border="1" style="width:100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td></td> <td></td> <td><u>100</u></td> </tr> </table>                                                                                                                                                                                                                                                                                                                                       |                          |                   | Pool                     | Riffle | Run               | Flat                |          |           |                                     | <u>100</u>               |                          |                          |            |                                     |                          |                          |                          |
| Pool                                                                                                                                      | Riffle                                 | Run                                | Flat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
|                                                                                                                                           |                                        |                                    | <u>100</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Notes: <u>slow moving</u>                                                                                                                 |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Instream Cover (%)                                                                                                                        |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Other                                                                                                                                     | Woody Debris                           | Boulders                           | Cobble                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Aquatic Vegetation*      | None              | Undercut Banks           |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
|                                                                                                                                           | <u>5</u>                               |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u>10</u>                |                   | Average Depth: (% Cover) |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                                                |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)<br><u>algae, pond weed sp, duckweed</u>                            |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Canopy Cover (% closed cover):                                                                                                            |                                        |                                    | Types of Cover (% cover)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 100-90%                                                                                                                                   | <input type="checkbox"/>               | 30-1%                              | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Trees                    | Shrubs <u>100</u> | Man-made structures      |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 90-60%                                                                                                                                    | <input type="checkbox"/>               | 0%                                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Grasses                  | Herbaceous        | Other                    |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 60-30%                                                                                                                                    | <input checked="" type="checkbox"/>    |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                                                |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Notes: (vegetation species, types of structures)<br><u>willow shrubs</u>                                                                  |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Riparian Vegetation                                                                                                                       |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Width and Description of riparian vegetation: LB - <u>5m willow shrub</u>                                                                 |                                        |                                    | RB - <u>5m willow shrub</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Overhanging Vegetation Present <u>Y/N</u>                                                                                                 |                                        |                                    | % Overhanging Vegetation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description of Overhanging Vegetation: <u>Y/N</u>                                                                                         |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Obstructions to Fish Passage                                                                                                              |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| None Observed <input checked="" type="checkbox"/>                                                                                         | Man-Made <input type="checkbox"/>      | Natural <input type="checkbox"/>   | Low Flow Barrier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description of Barrier:                                                                                                                   |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Height of Barrier (m)                                                                                                                     |                                        |                                    | GPS Coordinates:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                   |                          |        |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |

Water Bodies Assessment Field Collection Form

AECOM

Date: July 12/12

Land Parcel/Site ID:

65H 2160 or 2147  
D46  
Page 3 of 4

Other General Comments Regarding the Study Area:

- channelized feature turning to naturalize
- willow shrubs along south side
- box culvert
- natural hydrocarbons
- raccoon tracks

Additional UTM Coordinates:

Photo log

| Picture # | Description | Picture # | Description |
|-----------|-------------|-----------|-------------|
| 20-22     | South side  |           |             |
| 23-24     | North side  |           |             |
|           |             |           |             |
|           |             |           |             |
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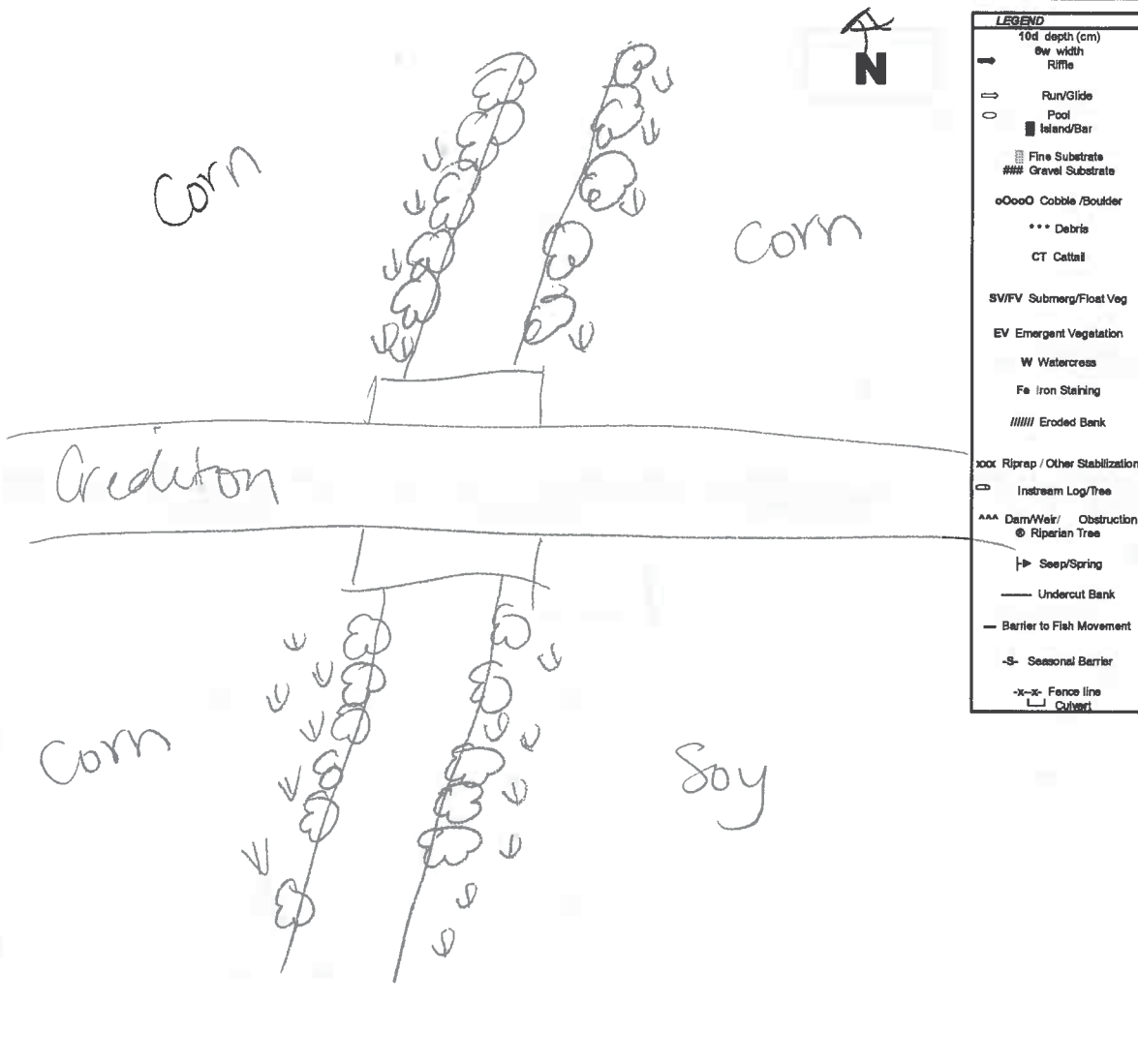
# Water Bodies Assessment Field Collection Form

**AECOM**

Page 4 of 4

## Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# 216042147 Site ID D46



### Horizontal View of Channel



Initial QA/QC By: Bentley Date: Aug. 2, 2012 Technical QA/QC By: Other Date: 2nd August 2012

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2051 & 2052 Site ID: Home Run D47

Date: July 12/12 Start time: 11:40 End Time: 11:50

Weather Conditions: Sunny, hot Field Crew: S. AITKEN, br. Ferris  
Field Notes By: S. AITKEN

Site Location

crossing located on Crediton Rd east of Babylon Line

UTM Co-ord. notes (continue on page 3 if necessary)

Easting: 0453946 Northing: 4793916 Description: wg

Easting: Northing: Description:

Easting: Northing: Description:

Easting: Northing: Description:

Surrounding Landuse

- Residential
- Agriculture
- Forest
- Other
- Meadow
- Wetland
- Livestock

Description: Soy - SE pasture - SW  
Soy - NE + NW

Type of Watercourse

- Intermittent
- Permanent
- Ephemeral
- Channelized
- Natural Channel

Description: channelized feature starting to naturalize

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

-collects water from roadside ditch

Is any portion of the water body underground or not as mapped? Y (N)  
If Yes describe:

GPS Coordinate: Easting - Northing - Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT °C: 19.73 AT °C: 29  
pH: 7.72 Cond (µ/cm): 1860  
D.O. (mg/L): 5.89

Water Clarity: Clear  Turbid

Water Colour: light brown

Notes: wg taken at south culvert

Ground Water and Seepage Indicators

- Watercress
- Iron Staining
- Bubbling
- Other
- Bank Seepage
- None

Details: none observed

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                                                              |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|-------------------|---------------------|----------|-----------|-------------------------------------|--------------------------|--------------------------|--------------------------|------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| Site Length (m): <u>~ 20 m</u>                                                                                                 |                                        |                                    | Bank Stability:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Channel Dimensions                                                                                                             |                                        |                                    | <table style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center;">Stable</td> <td style="text-align: center;">Slightly unstable</td> <td style="text-align: center;">Moderately unstable</td> <td style="text-align: center;">Unstable</td> </tr> <tr> <td>Left Bank</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table> |                          |                          |                             | Stable                   | Slightly unstable | Moderately unstable | Unstable | Left Bank | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Right Bank | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                                                                | Stable                                 | Slightly unstable                  | Moderately unstable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Unstable                 |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Left Bank                                                                                                                      | <input checked="" type="checkbox"/>    | <input type="checkbox"/>           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <input type="checkbox"/> |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Right Bank                                                                                                                     | <input checked="" type="checkbox"/>    | <input type="checkbox"/>           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <input type="checkbox"/> |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Wetted Width (m): <u>0.60</u>                                                                                             | Mean Wetted Depth (m): <u>0.08</u>     | Description: <u>well vegetated</u> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Bankfull Width (m): <u>3.00</u>                                                                                           | Mean Bankfull Depth (m): <u>0.40</u>   |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Mean Top of Bank Width (m): <u>5.00</u>                                                                                        | Mean Top of Bank Depth (m): <u>2.5</u> |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Flow Description: (high or low flow conditions, stagnant, etc)<br><u>low flow conditions</u>                                   |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Habitat                                                                                                                        |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Substrate (<=>)                                                                                                                |                                        |                                    | Morphological Structure (%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description<br>Bo - Boulder<br>Co - Cobble<br>Gr - Gravel<br>Sa - Sand<br>Si - Silt<br>Cl - Clay<br>MK - Muck<br>DT - Detritus |                                        |                                    | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td style="text-align: center;"><u>5</u></td> <td></td> <td></td> <td style="text-align: center;"><u>15</u></td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |                          | Pool                        | Riffle                   | Run               | Flat                | <u>5</u> |           |                                     | <u>15</u>                |                          |                          |            |                                     |                          |                          |                          |
| Pool                                                                                                                           | Riffle                                 | Run                                | Flat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| <u>5</u>                                                                                                                       |                                        |                                    | <u>15</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Notes:                                                                                                                         |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Instream Cover (%)                                                                                                             |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Other                                                                                                                          | Woody Debris                           | Boulders                           | Cobble                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Aquatic Vegetation*      | None                     | Undercut Banks              |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
|                                                                                                                                |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <u>100</u>               |                          | Average Depth:<br>(% Cover) |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                                     |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)<br><u>Cattails, Sedges</u>                              |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Canopy Cover (% closed cover):                                                                                                 |                                        |                                    | Types of Cover (% cover)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 100-90%                                                                                                                        | <input type="checkbox"/>               | 30-1%                              | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Trees                    | Shrubs                   | Man-made structures         |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 90-60%                                                                                                                         | <input checked="" type="checkbox"/>    | 0%                                 | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Grasses <u>50</u>        | Herbaceous               | Other <u>Sedges 50</u>      |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| 60-30%                                                                                                                         | <input type="checkbox"/>               |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                                     |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Notes: (vegetation species, types of structures)                                                                               |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Riparian Vegetation                                                                                                            |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Width and Description of riparian vegetation: <u>LB - 5m</u>                                                                   |                                        |                                    | <u>RB - 5m</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| <u>Mix of grasses + herbaceous → sam</u>                                                                                       |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Overhanging Vegetation Present Y / N                                                                                           |                                        |                                    | % Overhanging Vegetation:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description of Overhanging Vegetation:                                                                                         |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Obstructions to Fish Passage                                                                                                   |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| None Observed                                                                                                                  | <input checked="" type="checkbox"/>    | Man-Made                           | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Natural                  | <input type="checkbox"/> | Low Flow Barrier            | <input type="checkbox"/> |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Description of Barrier:                                                                                                        |                                        |                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |
| Height of Barrier (m)                                                                                                          |                                        |                                    | GPS Coordinates:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                          |                             |                          |                   |                     |          |           |                                     |                          |                          |                          |            |                                     |                          |                          |                          |

**Water Bodies Assessment Field Collection Form**

**AECOM**

Date: July 12/12

Land Parcel/Site ID:

GSH 2053 + 2051

Page 3 of 4

**D47**

**Other General Comments Regarding the Study Area:**

- Channel is slightly choked w cattails & sedges
- low flow
- raccoons walking through channel
- natural hydrocarbon

**Additional UTM Coordinates:**

**Photo log**

| Picture # | Description | Picture # | Description |
|-----------|-------------|-----------|-------------|
| 25-26     | South side  |           |             |
| 27-28     | north side  |           |             |
|           |             |           |             |
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Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

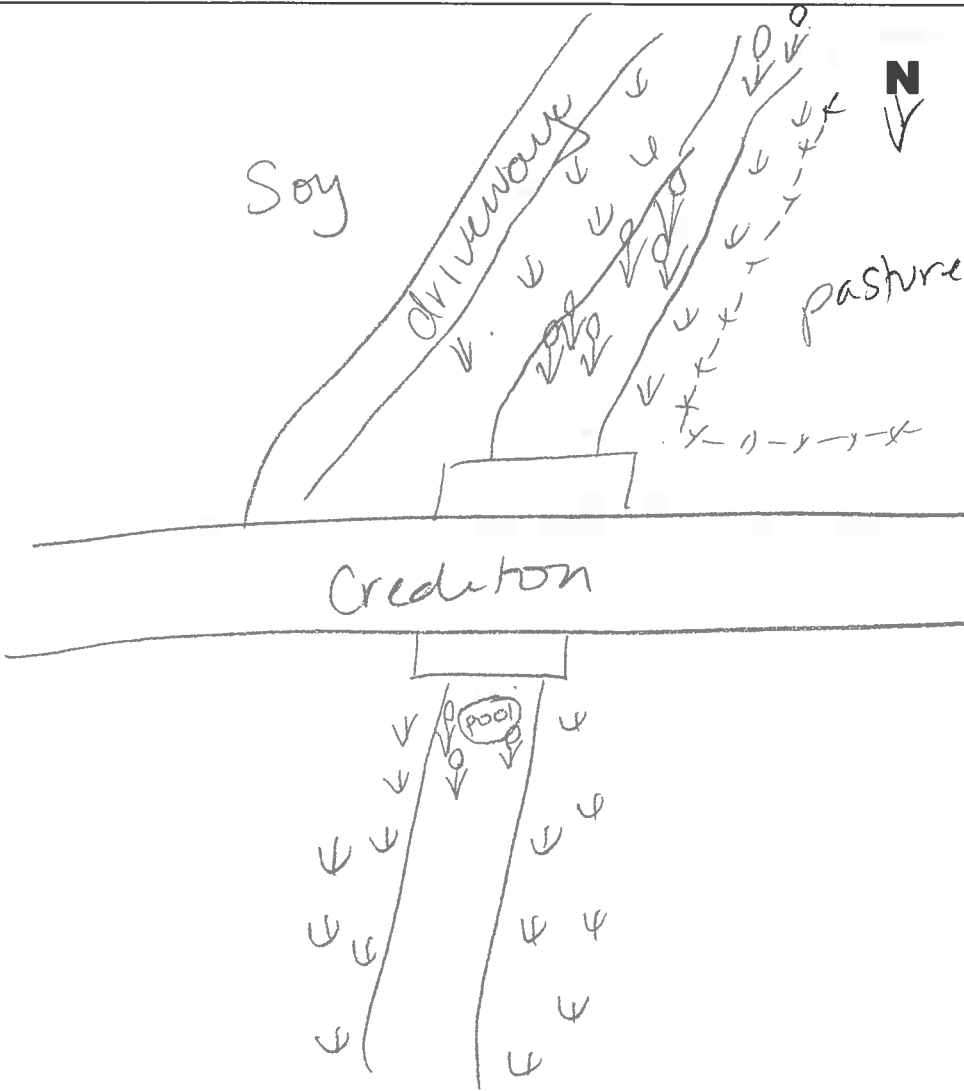
Jericho

Goshen

Bluewater

Land Parcel# 2053 + 2051: Site ID

D47



| LEGEND                       |       |
|------------------------------|-------|
| 10d depth (cm)               | →     |
| 0w width                     | ○     |
| Riffle                       | ▭     |
| Run/Glide                    | ○     |
| Pool                         | ▭     |
| Island/Bar                   | ▭     |
| Fine Substrate               | ▨     |
| Gravel Substrate             | ###   |
| Cobble/Boulder               | oOoO  |
| Debris                       | ***   |
| Cattail                      | CT    |
| Submerg/Float Veg            | SV/FV |
| Emergent Vegetation          | EV    |
| Watercross                   | W     |
| Iron Staking                 | Fe    |
| Eroded Bank                  |       |
| Riprap / Other Stabilization | xxx   |
| Instream Log/tree            | ⊃     |
| Dam/Weir / Obstruction       | AAA   |
| Riparian Tree                | ⊙     |
| Seep/Spring                  | ↳     |
| Undercut Bank                | —     |
| Barrier to Fish Movement     | —     |
| Seasonal Barrier             | -S-   |
| Fence line                   | -x-x- |
| Culvert                      | ▭     |

Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: Aug 2, 2012 Technical QA/QC By: [Signature]

Date: 2nd Aug 2012



Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 10608 Site ID: D48  
 Date: July 12/12 Start time: 9:45 End Time: 10:10  
 Weather Conditions: Sunny, 27°C Field Crew: S. Aitken, G. Ferris  
 Field Notes By: S. Aitken

Site Location

located west off Mollard Drive along Old Ausable channel.

UTM Co-ordinates (continue on page 3 if necessary)

Easting: 437067 Northing: 4789043 Description: WQ  
 Easting: Northing: Description:  
 Easting: Northing: Description:  
 Easting: Northing: Description:

Surrounding Landuse

Residential   
 Agriculture   
 Forest   
 Other   
 Meadow   
 Wetland   
 Livestock

Description: Corn in agri field

Type of Watercourse

Intermittent   
 Permanent   
 Ephemeral   
 Channelized   
 Natural Channel

Description: large wide channel

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

several channels flow into channel on LB

Is any portion of the water body underground or not as mapped? Y N  
 If Yes describe:

GPS Coordinate: Easting - Northing - Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

fairly flat gradually slopes towards channel

In-Situ Water Quality

WT(°C): 21.95 AT(°C): 27°C  
 pH: 8.36 Cond (µs/cm): 476  
 D.O. (mg/L) 8.58  
 Water Clarity: Clear  Turbid

Water Colour: brown

Notes: WQ taken along LB  
pockets of floating algae

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling   
 Other

Details: none observed

**Water Bodies Assessment Field Collection Form**

| Stream Morphology                                                                                                                                                    |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--|--|--|------|--------|-----|------|--|--|--|-----|
| Site Length (m): <u>~50m</u>                                                                                                                                         |                                        |                                    | Bank Stability:                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Channel Dimensions                                                                                                                                                   |                                        |                                    | Stable                              | Slightly unstable                   | Moderately unstable                 | Unstable                    |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Mean Wetted Width (m): <u>19</u>                                                                                                                                     | Mean Wetted Depth (m): <u>~0.40</u>    | Left Bank                          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            | <input type="checkbox"/>    |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Mean Bankfull Width (m): <u>25</u>                                                                                                                                   | Mean Bankfull Depth (m): <u>1.3</u>    |                                    | Right Bank                          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>    | <input type="checkbox"/>            |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Mean Top of Bank Width (m): <u>33</u>                                                                                                                                | Mean Top of Bank Depth (m): <u>2.5</u> | Description: <u>well vegetated</u> |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Flow Description: (high or low flow conditions, stagnant, etc)<br><u>low flow conditions water is barely moving - at 1m from bank - depth is 0.30m - very turbid</u> |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Substrate (<=>)                                                                                                                                                      |                                        |                                    | Habitat                             |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Bo - Boulder                                                                                                                                                         | Co - Cobble                            | Gr - Gravel                        | Sa - Sand                           | Si - Silt                           | Cl - Clay                           | MK - Muck                   | DT - Detritus                       | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Morphological Structure (%)</th> </tr> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td align="center">100</td> </tr> </tbody> </table> | Morphological Structure (%) |  |  |  | Pool | Riffle | Run | Flat |  |  |  | 100 |
| Morphological Structure (%)                                                                                                                                          |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Pool                                                                                                                                                                 | Riffle                                 | Run                                | Flat                                |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
|                                                                                                                                                                      |                                        |                                    | 100                                 |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Description: <u>Si</u>                                                                                                                                               |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Notes: <u>very low flow</u>                                                                                                                                          |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Instream Cover (%)                                                                                                                                                   |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Other                                                                                                                                                                | Woody Debris                           | Boulders                           | Cobble                              | Aquatic Vegetation*                 | None                                | Undercut Banks              |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
|                                                                                                                                                                      | 10                                     |                                    |                                     | 10                                  |                                     | Average Depth:<br>(% Cover) |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%                                                                                                           |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| *Aquatic Vegetation Species Present (algae, submergent, emergent etc.)<br><u>algae &gt; milfoil &gt; duckweed</u>                                                    |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Canopy Cover (% closed cover):                                                                                                                                       |                                        |                                    | Types of Cover (% cover)            |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| 100-90%                                                                                                                                                              | <input type="checkbox"/>               | 30-1%                              | <input checked="" type="checkbox"/> | Trees                               | <u>10</u>                           | Shrubs                      | <u>15</u>                           | Man-made structures                                                                                                                                                                                                                                                                                               |                             |  |  |  |      |        |     |      |  |  |  |     |
| 90-60%                                                                                                                                                               | <input type="checkbox"/>               | 0%                                 | <input type="checkbox"/>            | Grasses                             |                                     | Herbaceous                  |                                     | Other                                                                                                                                                                                                                                                                                                             |                             |  |  |  |      |        |     |      |  |  |  |     |
| 60-30%                                                                                                                                                               | <input type="checkbox"/>               |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%                                                                                                           |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Notes: (vegetation species, types of structures)<br><u>willow trees &amp; shrubs</u>                                                                                 |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Riparian Vegetation                                                                                                                                                  |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Width and Description of riparian vegetation: <u>LB - 6m willow trees shrubs, herbaceous, grass</u>                                                                  |                                        |                                    |                                     |                                     | RB - <u>6m' → same</u>              |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Overhanging Vegetation Present <input checked="" type="checkbox"/> N                                                                                                 |                                        |                                    |                                     |                                     | % Overhanging Vegetation: <u>5%</u> |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Description of Overhanging Vegetation: <u>willow shrubs</u>                                                                                                          |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Obstructions to Fish Passage                                                                                                                                         |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| None Observed                                                                                                                                                        | <input checked="" type="checkbox"/>    | Man-Made                           | <input type="checkbox"/>            | Natural                             | <input type="checkbox"/>            | Low Flow Barrier            | <input checked="" type="checkbox"/> |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Description of Barrier:                                                                                                                                              |                                        |                                    |                                     |                                     |                                     |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |
| Height of Barrier (m)                                                                                                                                                |                                        |                                    |                                     |                                     | GPS Coordinates:                    |                             |                                     |                                                                                                                                                                                                                                                                                                                   |                             |  |  |  |      |        |     |      |  |  |  |     |

**Water Bodies Assessment Field Collection Form**

**AECOM**

Date: July 12/12

Land Parcel/Site ID: 65H1068  
D48

Page 3 of 4

**Other General Comments Regarding the Study Area:**

- wide slow moving channel barely moving, very turbid
- green frogs heard
- very uniform system.

**Additional UTM Coordinates:**

| Photo log |             |           |             |
|-----------|-------------|-----------|-------------|
| Picture # | Description | Picture # | Description |
| 4         | facing west |           |             |
| 5         | facing u/s  |           |             |
| 6         | " "         |           |             |
| 7         | facing d/s  |           |             |
| 8         | facing u/s  |           |             |
| 9         | facing d/s  |           |             |
|           |             |           |             |
|           |             |           |             |
|           |             |           |             |
|           |             |           |             |
|           |             |           |             |
|           |             |           |             |
|           |             |           |             |
|           |             |           |             |

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

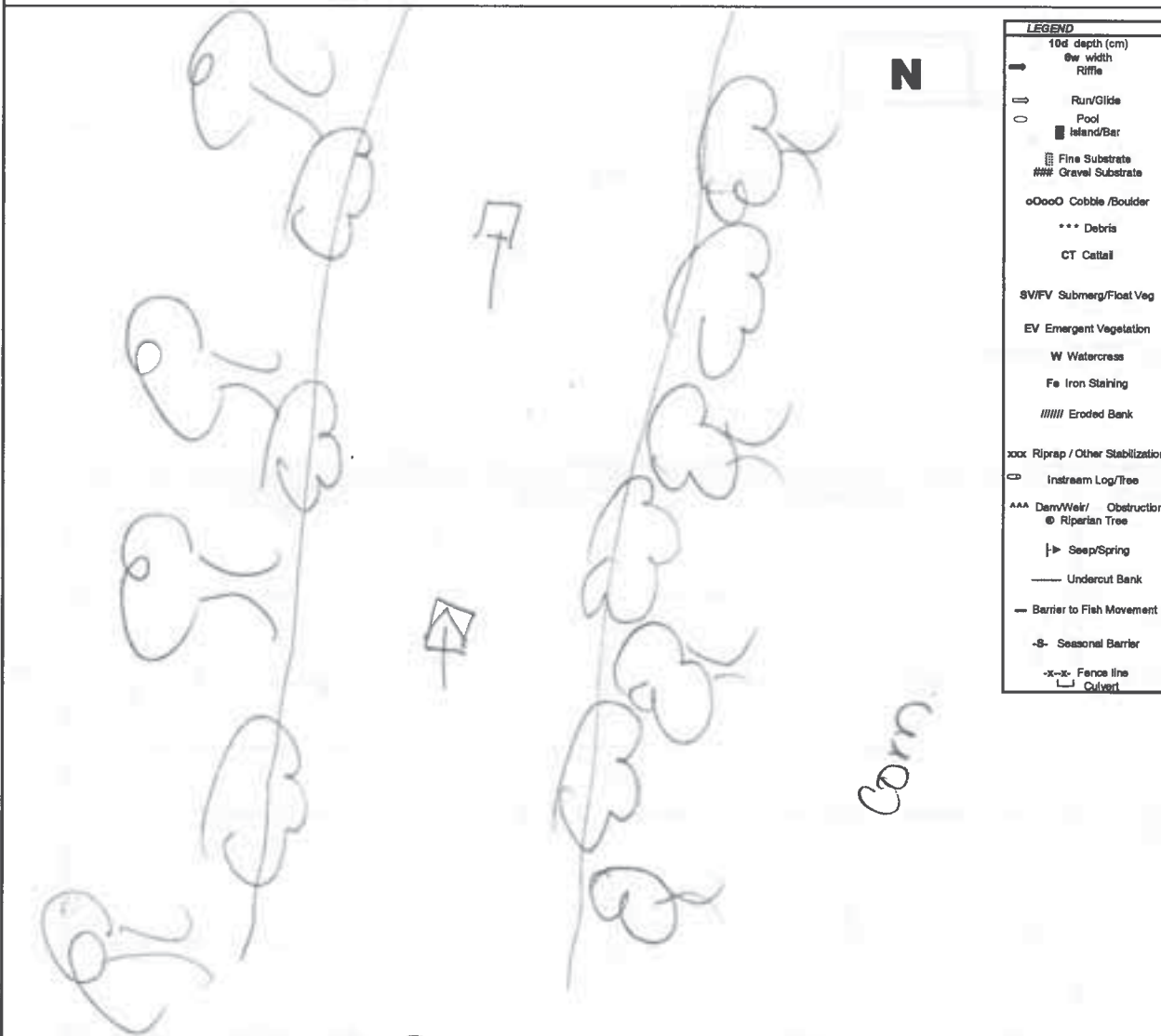
Bluewater

Land Parcel#

0268

Site ID

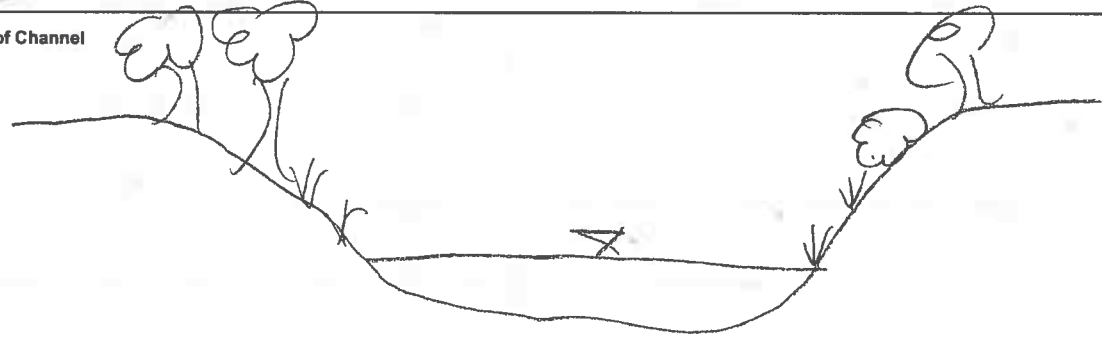
D48



**LEGEND**

- 10d depth (cm)
- 10w width
- Riffle
- Run/Glide
- Pool
- Island/Bar
- Fine Substrate
- Gravel Substrate
- Cobble/Boulder
- Debris
- Cattle
- Submerg/Float Veg
- Emergent Vegetation
- Watercress
- Iron Staining
- Eroded Bank
- Riprap / Other Stabilization
- Instream Log/Tree
- Den/Welr / Obstruction
- Riparian Tree
- Seep/Spring
- Undercut Bank
- Barrier to Fish Movement
- Seasonal Barrier
- Fence line
- Culvert

Horizontal View of Channel



Initial QA/QC By: Bentley

Date: Aug. 2, 2012 Technical QA/QC By: Almer

Date: 2nd August 2012

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# G2H1659 Site ID: D51 Feature 258

Date: June 11/12 Start time: 12:20 End Time: 13:50

Weather Conditions:

Cloudy, 25°C

Field Crew: C. Boros, J. Egg

Field Notes By: C. Boros

Site Location

Shipka Ln, South of Kirkton

UTM Co-ordinates (continue on page 3 if necessary)

Eastings: 444277

Northing: 4793877

Description: D1000 start + Wg

Eastings: 444202

Northing: 4793766

Description: D1000 end 2 → 10m south

Eastings: 444322

Northing: 4793813

Description: D1000 Wg 2

Eastings: 444357

Northing: 4793864

Description: D1000 snake

Surrounding Landuse

- Residential
- Agriculture
- Forest
- Other
- Meadow
- Wetland
- Livestock

Type of Watercourse

- Intermittent
- Permanent
- Ephemeral
- Channelized
- Natural Channel

Description:

~~deciduous~~ deciduous forest

Description:

→ stagnant pools between dry stretches starting 30m from Tile drain

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

Tile drain - flowing - at beginning

Is any portion of the water body underground or not as mapped?  Y N

If Yes describe: New watercourse

Tile drain feeding into ~~forest~~ forest creating an intermittent watercourse

GPS Coordinate: Easting - 444277 Northing - 4793877 Description -

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): 21.1 / 14.9 AT (°C): 26°C  
 pH: 7.75 / 6.94 Cond.  $\mu$ s/cm: 628 / 906  
 D.O. (mg/L): 7.25 / 6.21  
 Water Clarity: Clear  Turbid

Water Colour: brown

Notes:

Ground Water and Seepage Indicators

- Watercress
- Bank Seepage
- Iron Staining
- None
- Bubbling
- Other

Details: