

APPENDIX C
Wetland Photographs

Appendix C – Wetland Photographs



Photograph 1: Wetland 1 (WL1) - Wetland Habitat



Photo 2: Wetland 1 - Wetland Test Pit (WL1-WP1)



Photograph 3: Wetland 1 (WL1) – Upland Habitat



Photograph 4: Wetland 1 (WL1) – Upland Test Pit (WL1-UP1)



Photograph 5: Wetland 2 (WL2) – Wetland Habitat



Photograph 6: Wetland 2 (WL2) – Wetland Test Pit (WL2-WP1)



Photograph 7: Wetland 2 (WL2) – Upland Habitat



Photograph 8: Wetland 2 (WL2) – Upland Test Pit (WL2-UP1)



Photograph 9: Wetland 3 (WL3) – Wetland Habitat



Photograph 10: Wetland 3 (WL3) – Wetland Test Pit (WL3-WP1)



Photograph 11: Wetland 3 (WL3) – Upland Habitat



Photograph 12: Wetland 3 (WL3) – Upland Test Pit (WL3-UP1)



Photograph 13: Wetland 4 (WL4) – Wetland Habitat



Photograph 14: Wetland 4 (WL4) – Wetland Test Pit (WL4-WP1)



Photograph 15: Wetland 4 (WL4) – Upland Habitat



Photograph 16: Wetland 4 (WL4) – Upland Test Pit (WL4-UP1)



Photograph 17: Wetland 5 (WL5) – Wetland Habitat



Photograph 18: Wetland 5 (WL5) – Wetland Test Pit (WL5-WP1)



Photograph 19: Wetland 5 (WL5) – Upland Habitat



Photograph 20: Wetland 5 (WL5) – Upland Test Pit (WL5-UP1)



Photograph 21: Wetland 6 (WL6) – Wetland Habitat



Photograph 22: Wetland 6 (WL6) – Wetland Test Pit (WL6-WP1)



Photograph 23: Wetland 6 (WL6) – Upland Habitat



Photograph 24: Wetland 6 (WL6) – Upland Test Pit (WL6-UP1)



Photograph 25: Wetland 7 (WL7) – Wetland Habitat



Photograph 26: Wetland 7 (WL7) – Wetland Test Pit (WL7-WP1)



Photograph 27: Wetland 7 (WL7) – Upland Habitat



Photograph 28: Wetland 7 (WL7) – Upland Test Pit (WL7-UP1)



Photograph 29: Wetland 8 (WL8) – Wetland Habitat



Photograph 30: Wetland 8 (WL8) – Wetland Test Pit (WL8-WP1)



Photograph 31: Wetland 8 (WL8) – Upland Habitat



Photograph 32: Wetland 8 (WL8) – Upland Test Pit (WL8-UP1)



Photograph 33: Wetland 11 (WL11) – Wetland Habitat



Photograph 34: Wetland 11 (WL11) – Wetland Test Pit (WL11-WP1)



Photograph 35: Wetland 11 (WL11) – Upland Habitat



Photograph 36: Wetland 11 (WL11) – Upland Test Pit (WL11-UP1)



Photograph 37: Wetland 12 (WL12) – Wetland Habitat



Photograph 38: Wetland 12 (WL12) – Wetland Test Pit (WL12-WP1)



Photograph 39: Wetland 12 (WL12) – Upland Habitat



Photograph 40: Wetland 12 (WL12) – Upland Test Pit (WL12-UP1)



Photograph 41: Wetland 13 (WL13) – Wetland Habitat



Photograph 42: Wetland 13 (WL13) – Wetland Test Pit (WL13-WP1)



Photograph 44: Wetland 13 (WL13) – Upland Habitat



Photograph 45: Wetland 13 (WL13) – Upland Test Pit (WL13-UP1)

APPENDIX D
Wetland Functional Assessment Forms

APPENDIX C: WL1 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley			GPS Coordinates: 607504 E x 5002543 N				
PID:35066158		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 15-Apr-13				Site Visit Date: Sept. 26, 2013							
Weather Conditions (past 48 hours): Clear and Sunny;											
Seasonal Weather Conditions: Typical											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EP-SD			Size: 218 km ²							
2	% Watershed Land Cover			For: 61	Nat: 11	Past/Hay: <1	Crop: <1	Urb/Com: 1	Road: <1	Other Dev: 7 (Gravel Pit, Landfill, Industrial	
3	% Watershed WL Cover and by Class			Total: 14%	SM: <1	BO: 9	FE: 1	FM: 2	FS: 1	SS: 1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Bog/Fen/Swamp				WL size: 0.17 hectares		Landform: Basin			Landscape Position: Lotic-Stream Confined		
Water flow path: Throughflow				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	IfT	AF
2	# WL's within 30m project area			Total# 0	SM:	BO:	FE:	FM:	FS:	SS:	CP: VP:
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO: 40	FE: 40	FM: 10	FS:	SS: 10	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep: 5-20		% Inundated: 10%		No		
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 90	Nat:	PasHay:	Crop:	UrbCm:	Road: 10	Other Dev:	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, R __, Rr __, J/CD __, F __, FA __, other (specify): historic mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			50__ meter							
2	Widths for water quality			H >1	M 8-15	L <8	Road loacted along one side of wetland				
3	Widths for wildlife habitat			H >100	M 15-100	L <15	Road loacted along one side of wetland				
4	Adjacent area vegetation condition (list % in each category)			H 90%	M	L 10%					
5	Adjacent area diversity and structure (list % in each category)			H 90%	M	L 10%					
6	Adjacent Upland Slope (list % in each category)			Steep	Mod 20%	Gentle 80%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No	Potentially American Eel (found in lower reaches of stream)						
SF7	Species of concern (Fed/Prov)? Specify. Potentially American Eel	End	Thr - SARA	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify:						
3	WL ability to maintain characteristic hydrologic regime	High		Med	Low					
4	Water Storage Depth (list % in each class)	>30cm	15-30cm 10%	up to 15cm 10%	No ponding					
5	Signs of surface water retention observed?	SW_30_cm, WSL_, WCD_, WM_cm, SM_cm, SD_, AD_, ID_, PMT_x_, AI_, BT_, AR_, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med	High					
7	Disturbance of WL soils	Low		Med	High					
8	Predominant soils adjacent to WL	Sand		Silt/loam	Clay, bedrock					
9	Capacity of WL to alter/retard flows	High		Med	Low					
10	Roughness coefficient for surface water flow path	High		Med	Low					
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med	Low					
12	Water Source	Natural		Mostly natural	Partly altered	Controlled				
13	Hydrology of tidal wetlands	Unrestricted		Reduced	Restricted	N/A				
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med	Low					
2	Nutrients/sediments from surrounding land	High		Med	Low					
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med	Low					
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: <i>Juncus effusus</i> (30%)/ <i>Carex sp.</i> (20%)/ <i>Alnus incana</i> (15%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H __,ATV __,G __,M __,In __, D/D __, Im __, OAH __, li __, Sd __,E __,other __,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	__%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Dragon flies, Passerines					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify: Potentially American Eel (found in lower reaches of stream)					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr-SARA	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV __,CP __,CO __,PO __,PA __,AV __,GB __,E __,HI __, WV __, BO __,HU __, PG __, BP __,F __, E __, R __, Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL2												Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG						Evaluator: Scott Burley						GPS Coordinates: 607504 E x 5002543 N											
PID:35066158			Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS																				
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)																							
Evaluation Date: 15-Apr-13						Site Visit Date: Sept. 26, 2013																	
Weather Conditions (past 48 hours): Clear and Sunny;																							
Seasonal Weather Conditions: Typical																							
SECTION ONE: WATERSHED CHARACTERISTICS																							
1		Watershed Name (tertiary): 1EP-SD				Size: 218		km ²															
2		% Watershed Land Cover				For: 61		Nat: 11		Past/Hay: <1		Crop: <1		Urb/Com: 1		Road: <1		Other Dev: 7 (Gravel Pit, Landfill, Industrial					
3		% Watershed WL Cover and by Class				Total: 14%		SM: <1		BO: 9		FE: 1		FM: 2		FS: 1		SS: 1		CP: <1		VP: Present	
SF1		Watershed condition				H		M		L													
SF2		Proportion of WL area in watershed & opportunity for floodwater detention				H		M		L													
SECTION TWO: WETLAND CHARACTERISTICS																							
Wetland Type: Fen						WL size: 0.20				hectares				Landform: Basin				Landscape Position: Terrene					
Water flow path: Outflow						Wetland Origin: Natural																	
1		Water Regime				PF		SF		TF		SS		PS		RfT		IfT		AF			
2		# WL's within 30m project area				Total# 0		SM:		BO:		FE:		FM:		FS:		SS:		CP:		VP:	
3		Is WL part of complex				Yes		No															
4		% each wetland type in complex				SM:		BO:		FE:		FM:		FS:		SS:		CP:		VP:			
5		Is WL bordering or associated with a lake or pond?				bordering				within 100m				N/A				specify					
6		Standing water?				Yes		Avg Dep: 5 cm				% Inundated: 15%				No							
7		Inlet or Outlet (circle all that apply)?				Inlet		Outle															
8		Adjacent Upland Land Use within 100m (%)				For: 100%		Nat:		PasHay:		Crop:		UrbCm:		Road: 10		Other Dev:					
9		Are there stressors in WL or WL buffer area? Circle primary stressor(s).				DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, Dwp __,																	
						M __, GC __, ATV __, DG __, EA __, R __, Rr __, U/CD __, F __, FA __, other (specify): historic mining in area																	
10		Hydrology Altered (circle all that apply)?				Ditching		Dams		Tiles		Culvert		Well		Diversion		Other Specify:					
SF3		Rate the general wetland condition/integrity				H		M		L													
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY																							
1		Average width of adjacent naturalized buffer				100		metre															
2		Widths for water quality				H >1		M 8-15		L <8													
3		Widths for wildlife habitat				H >100		M 15-100		L <15													
4		Adjacent area vegetation condition (list % in each category)				H 100%		M		L													
5		Adjacent area diversity and structure (list % in each category)				H 100%		M		L													
6		Adjacent Upland Slope (list % in each category)				Steep		Mod 30%		Gentle 70%													
7		Adjacent land supports water quality				Yes		No		Specify:													
8		Adjacent land supports wildlife habitat				Yes		No		Specify:													
SF4		Rate the overall condition and integrity land adjacent to wetland				H		M		L		is buffer required to maintain red flag functions of wetland? If yes if no											
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES																							
SF5		Is the WL a WSS?				Yes		No															

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No	Potentially American Eel (found in lower reaches of stream)						
SF7	Species of concern (Fed/Prov)? Specify.Possible American Eel	End	Thr-SARA	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify: Recieves some overland flow but stream channel begins at outflow of wetland						
2	Is WL geographically isolated?	Yes	No	Specify:						
3	WL ability to maintain characteristic hydrologic regime	High		Med	Low					
4	Water Storage Depth (list % in each class)	>30cm	15-30cm	up to 15cm 30%	No ponding					
5	Signs of surface water retention observed?	SW _cm, WSL_, WCD_, WM _cm, SM _cm, SD_, AD_, ID_, PMT_x_, AI_, BT_, AR_, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med	High					
7	Disturbance of WL soils	Low		Med	High					
8	Predominant soils adjacent to WL	Sand		Silt/loam	Clay,bedrock					
9	Capacity of WL to alter/retard flows	High		Med	Low					
10	Roughness coefficient for surface water flow path	High		Med	Low					
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med	Low					
12	Water Source	Natural		Mostly natural	Partly altered	Controlled				
13	Hydrology of tidal wetlands	Unrestricted		Reduced	Restricted	N/A				
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med	Low					
2	Nutrients/sediments from surrounding land	High		Med	Low					
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med	Low					
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: <i>Juncus effusus</i> (10%)/ <i>Aster radula</i> (5%)/ <i>Rosa nitida</i> (5%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H___,ATV___,G___,M___,In___,D/D___,Im___,OAH___,li___,Sd___,E___,other___,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	___%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Dragon flies, Black Capped Chickadee					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:Potentially American Eel (found in lower reaches of stream)					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr-SARA	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV___,CP___,CO___,PO___,PA___,AV_x___,GB___,E___,HI___,WV___,BO___,HU___,PG_x___,BP_x___,F___,E___,R___,Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL3												Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG						Evaluator: Scott Burley						GPS Coordinates: 607504 E x 5002543 N											
PID:35066158		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS																					
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)																							
Evaluation Date: 15-Apr-13						Site Visit Date: Sept. 26, 2013																	
Weather Conditions (past 48 hours): Clear and Sunny;																							
Seasonal Weather Conditions: Typical																							
SECTION ONE: WATERSHED CHARACTERISTICS																							
1	Watershed Name (tertiary): 1EP-SD					Size: 218 km ²																	
2	% Watershed Land Cover					For: 61	Nat: 11	Past/Hay: <1	Crop: <1	Urb/Com: 1	Road: <1	Other Dev: 7 (Gravel Pit, Landfill, Industrial											
3	% Watershed WL Cover and by Class					Total: 14%	SM: <1	BO: 9	FE: 1	FM: 2	FS: 1	SS: 1 CP: <1 VP: Present											
SF1	Watershed condition					H	M	L															
SF2	Proportion of WL area in watershed & opportunity for floodwater detention					H	M	L															
SECTION TWO: WETLAND CHARACTERISTICS																							
Wetland Type: Fen/Bog/Marsh						WL size: 0.19 hectares			Landform: Basin			Landscape Position: Terrene Pond											
Water flow path: Outflow						Wetland Origin: Natural																	
1	Water Regime					PF	SF	TF	SS	PS	RfT	IfT AF											
2	# WL's within 30m project area					Total# 0	SM:	BO:	FE:	FM:	FS:	SS: CP: VP:											
3	Is WL part of complex					Yes	No																
4	% each wetland type in complex					SM:	BO: 30%	FE: 60%	FM: 10%	FS:	SS:	CP: VP:											
5	Is WL bordering or associated with a lake or pond?					bordering	within 100m			N/A		specify WL surrounds a small pond											
6	Standing water?					Yes	Avg Dep: 40 cm			% Inundated: 15%		No											
7	Inlet or Outlet (circle all that apply)?					Inlet	Outlet																
8	Adjacent Upland Land Use within 100m (%)					For: 100%	Nat:	PasHay:	Crop:	UrbCm:	Road: 10	Other Dev:											
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).					DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, R __, Rr __, U/CD __, F __, FA __, other (specify): historic mining - old tailings present W/I WL																	
10	Hydrology Altered (circle all that apply)?					Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:											
SF3	Rate the general wetland condition/integrity					H	M	L															
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY																							
1	Average width of adjacent naturalized buffer					100 m																	
2	Widths for water quality					H >1	M 8-15	L <8															
3	Widths for wildlife habitat					H >100	M 15-100	L <15															
4	Adjacent area vegetation condition (list % in each category)					H 100%	M	L															
5	Adjacent area diversity and structure (list % in each category)					H 100%	M	L															
6	Adjacent Upland Slope (list % in each category)					Steep	Mod 30%	Gentle 70%															
7	Adjacent land supports water quality					Yes	No	Specify:															
8	Adjacent land supports wildlife habitat					Yes	No	Specify:															
SF4	Rate the overall condition and integrity land adjacent to wetland					H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no														
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES																							
SF5	Is the WL a WSS?					Yes	No																

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No	Potentially American Eel (found in lower reaches of stream)						
SF7	Species of concern (Fed/Prov)? Specify. - Eriophorum variegatum and American Eel	End	Thr-SARA	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify: Recieves some overland flow but stream channel begins at outflow of wetland						
2	Is WL geographically isolated?	Yes	No	Specify:						
3	WL ability to maintain characteristic hydrologic regime	High		Med	Low					
4	Water Storage Depth (list % in each class)	>30cm 10 %	15-30cm	up to 15cm 5%	No ponding					
5	Signs of surface water retention observed?	SW_5_cm, WSL_, WCD_, WM_cm, SM_cm, SD_, AD_, ID_, PMT_x_, AI_, BT_, AR_, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low	Med	High						
7	Disturbance of WL soils	Low	Med	High						
8	Predominant soils adjacent to WL	Sand	Silt/loam	Clay	bedrock					
9	Capacity of WL to alter/retard flows	High	Med	Low						
10	Roughness coefficient for surface water flow path	High	Med	Low						
11	Stormwater/Wastewater/Agricultural runoff detention	High	Med	Low						
12	Water Source	Natural	Mostly natural	Partly altered	Controlled					
13	Hydrology of tidal wetlands	Unrestricted	Reduced	Restricted	N/A					
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High	Med	Low						
2	Nutrients/sediments from surrounding land	High	Med	Low						
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High	Med	Low						
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge	Discharge							
2	Land use / run off in subwatershed upstream	Recharge	Discharge							
3	Conditions of upland soils within 200m of wetland	Recharge	Discharge							
4	Hydroperiod of wetland	Recharge	Discharge							
5	Describe inlet/outlet configuration	Recharge	Discharge							

6	Characterize topographic relief surrounding wetland	Recharge	Discharge						
SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: <i>Equisetum variegatum</i> (20%)/ <i>Rhododendron groenlandicum</i> (15%)/ <i>Alnus incana</i> (15%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H __,ATV __,G __,M __,In __, D/D __, Im __, OAH __, li __, Sd __,E __,other __,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	_ 90 _%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Dragon flies, Northern Leopard Frog; Black Capped Chickadee					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10h				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:Potentially American Eel (found in lower reaches of stream)					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr-SARA	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV __,CP __,CO __,PO __,PA __,AV _x_,GB __,E __,HI __, WV __, BO __,HU __, PG _x_, BP _x_,F __, E __, R __, Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

APPENDIX C: WL4 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley			GPS Coordinates: 607114 E x 5002089 N				
PID:35095884		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 22-Apr-13				Site Visit Date: Sept. 27, 2013							
Weather Conditions (past 48 hours): Clear and Sunny previous day; Rain today											
Seasonal Weather Conditions: Typical											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EP-SD			Size: 218 km ²							
2	% Watershed Land Cover			For: 61	Nat: 11	Past/Hay: <1	Crop: <1	Urb/Com: 1	Road: <1	Other Dev: 7 (Gravel Pit, Landfill, Industrial	
3	% Watershed WL Cover and by Class			Total: 14%	SM: <1	BO: 9	FE: 1	FM: 2	FS: 1	SS: 1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Fen				WL size: 0.15 hectares			Landform: Slope			Landscape Position: Lotic-Stream Confined	
Water flow path: Throughflow				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	IfT	AF
2	# WL's within 30m project area			Total# 0	SM:	BO:	FE:	FM:	FS:	SS:	CP: VP:
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO:	FE:	FM:	FS:	SS: 10	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep: 40cm		% Inundated: 10%		No		
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 60	Nat: 25	PasHay:	Crop:	UrbCm:	Road: 15	Other Dev:	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, R __, Dr __, U/CD __, F __, FA __, other (specify): historic mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			20__ meter							
2	Widths for water quality			H >1	M 8-15	L <8	Road loacted along one side of wetland				
3	Widths for wildlife habitat			H >100	M 15-100	L <15	Road loacted along one side of wetland				
4	Adjacent area vegetation condition (list % in each category)			H 80%	M 10%	L 10%					
5	Adjacent area diversity and structure (list % in each category)			H 60%	M 30%	L 10%					
6	Adjacent Upland Slope (list % in each category)			Steep 20%	Mod 20%	Gentle 60%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No	American Eel found in stream associated with wetland						
SF7	Species of concern (Fed/Prov)? Specify.	End	Thr-SARA	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify:						
3	WL ability to maintain characteristic hydrologic regime	High		Med	Low					
4	Water Storage Depth (list % in each class)	>30cm 10%	15-30cm	up to 15cm	No ponding					
5	Signs of surface water retention observed?	SW_40_cm, WSL_, WCD_, WM_cm, SM_cm, SD_, AD_, ID_, PMT_x_, AI_, BT_, AR_, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med	High					
7	Disturbance of WL soils	Low		Med	High					
8	Predominant soils adjacent to WL	Sand		Silt/loam	Clay/bedrock					
9	Capacity of WL to alter/retard flows	High		Med	Low					
10	Roughness coefficient for surface water flow path	High		Med	Low					
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med	Low					
12	Water Source	Natural		Mostly natural	Partly altered	Controlled				
13	Hydrology of tidal wetlands	Unrestricted		Reduced	Restricted	N/A				
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified	Highway 316 at outflow					
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med	Low					
2	Nutrients/sediments from surrounding land	High		Med	Low					
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med	Low					
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: <i>Juncus effusus</i> (15%)/ <i>Rubus hispidus</i> (15%)/ <i>Alnus incana</i> (20%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H__x__,ATV__,G__,M__,In__, D/D__, Im__, OAH__, li__, Sd__,E__,other__,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	____%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Dragon flies, Passerines					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:American Eel found in stream associated with wetland					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr-SARA	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV__x__,CP__,CO__,PO__,PA__x__,AV__,GB__,E__,HI__, WV__, BO__,HU__, PG__x__, BP__x__,F__, E__, R__, Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL5 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley				GPS Coordinates: 607402 E x 5001908 N			
PID:35095884		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 22-Apr-13				Site Visit Date: Sept. 28, 2013							
Weather Conditions (past 48 hours): Clear and Sunny; Rainprevious day											
Seasonal Weather Conditions: Typical											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EQ-SD			Size: 518 km ²							
2	% Watershed Land Cover			For: 46	Nat: 40	Past/Hay: <1	Crop: <1	Urb/Com: 2	Road: 1	Other Dev: <1 (Gravel Pit, Landfill, Industrial	
3	% Watershed WL Cover and by Class			Total: 11%	SM: <1	BO: 6	FE: 1	FM: 2	FS: <1	SS: <1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Fen				WL size: 0.32 hectares		Landform: Slope		Landscape Position: Lotic-Stream Confined			
Water flow path: Throughflow				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	IfT	AF
2	# WL's within 30m project area			Total# 0	SM:	BO:	FE:	FM:	FS:	SS:	CP: VP:
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO:	FE:	FM:	FS:	SS: 10	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep: 15cm		% Inundated: 2%		No		
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 60 %	Nat: 30 %	PasHay:	Crop:	UrbCm:	Road: 10%	Other Dev:	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, L __, R __, U/CD __, F __, FA __, other (specify): historic mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			20__ meter							
2	Widths for water quality			H >1	M 8-15	L <8	Road loacted along one side of wetland				
3	Widths for wildlife habitat			H >100	M 15-100	L <15	Road loacted along one side of wetland				
4	Adjacent area vegetation condition (list % in each category)			H 80%	M 10%	L 10%					
5	Adjacent area diversity and structure (list % in each category)			H 70%	M 20%	L 10%					
6	Adjacent Upland Slope (list % in each category)			Steep	Mod	Gentle 100%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No							
SF7	Species of concern (Fed/Prov)? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify:						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm 10%	15-30cm	up to 15cm 2%		No ponding				
5	Signs of surface water retention observed?	SW __cm, WSL __, WCD __, WM __cm, SM __cm, SD __, AD __, ID __, PMT __x, AI __, BT __, AR __, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay/bedrock				
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified	Highway 316 at outflow					
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: <i>Picea mariana</i> (15%)/ <i>Carex trisperma</i> (30%)/ <i>Alnus incana</i> (30%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H__x__,ATV__,G__,M__,In__, D/D__, Im__, OAH__, li__, Sd__,E__,other__,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	____%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Deer tracks, Passerines					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV__x__,CP__,CO__,PO__,PA__x__,AV__,GB__,E__,HI__, WV__, BO__,HU__, PG__x__, BP__x__,F__, E__, R__, Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted SFs the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL6 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley			GPS Coordinates: 608135 E E x 5002011 N				
PID:35095884		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 22-Apr-13				Site Visit Date: Sept. 27, 2013							
Weather Conditions (past 48 hours): Clear and Sunny; Rain previous day											
Seasonal Weather Conditions: Typical											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EQ-SD			Size: 518 km ²							
2	% Watershed Land Cover			For: 46	Nat: 40	Past/Hay: <1	Crop: <1	Urb/Com: 2	Road: 1	Other Dev: <1 (Gravel Pit, Landfill, Industrial	
3	% Watershed WL Cover and by Class			Total: 11%	SM: <1	BO: 6	FE: 1	FM: 2	FS: <1	SS: <1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Fen				WL size: 0.10 hectares			Landform: Basin			Landscape Position: Terrene	
Water flow path: Isolated				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	IfT	AF
2	# WL's within 30m project area			Total# 0	SM:	BO:	FE:	FM:	FS:	SS:	CP: VP:
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO:	FE:	FM:	FS:	SS: 10	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep: 5cm		% Inundated: 2%		No		
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 20 %	Nat:	PasHay:	Crop:	UrbCm:	Road: 10%	Other Dev: 80% forestry	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, R __, Rr __, U/CD __, F __, FA __, x, other (specify): historic mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			20__ meter							
2	Widths for water quality			H >1	M 8-15	L <8	Road loacted along one side of wetland				
3	Widths for wildlife habitat			H >100	M 15-100	L <15	Road loacted along one side of wetland				
4	Adjacent area vegetation condition (list % in each category)			H 80%	M 10%	L 10%					
5	Adjacent area diversity and structure (list % in each category)			H 70%	M 20%	L 10%					
6	Adjacent Upland Slope (list % in each category)			Steep	Mod	Gentle 100%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No							
SF7	Species of concern (Fed/Prov)? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify: No surface inlet or outlet						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm	15-30cm	up to 15cm 2%		No ponding				
5	Signs of surface water retention observed?	SW _cm, WSL_, WCD_, WM _cm, SM _cm, SD_, AD_, ID_, PMT_x_, AI_, BT_, AR_, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay/bedrock				
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: <i>Picea mariana</i> (20%)/ <i>Rubus hispidus</i> (10%)/ <i>Juncus effusus</i> (15%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H__x__,ATV__,G__,M__,In__, D/D__, Im__, OAH__, li__, Sd__,E__,other__,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	____%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Deer tracks, Passerines					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV__,CP__,CO__,PO__,PA__,AV__,GB__,E__,HI__, WV__, BO__,HU__, PG_x__, BP_x__,F__, E__, R__, Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL7 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley			GPS Coordinates: 608389 E x 5002048 N				
PID:35095884		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 22-Apr-13				Site Visit Date: Sept. 26, 2013							
Weather Conditions (past 48 hours): Clear and Sunny; Rain previous day											
Seasonal Weather Conditions: Typical											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EQ-SD			Size: 518 km ²							
2	% Watershed Land Cover			For: 46	Nat: 40	Past/Hay: <1	Crop: <1	Urb/Com: 2	Road: 1	Other Dev: <1 (Gravel Pit, Landfill, Industrial	
3	% Watershed WL Cover and by Class			Total: 11%	SM: <1	BO: 6	FE: 1	FM: 2	FS: <1	SS: <1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Fen				WL size: 0.10 hectares			Landform: Basin			Landscape Position: Lotic Stream confined	
Water flow path:Throughflow				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	IfT	AF
2	# WL's within 30m project area			Total# 0	SM:	BO:	FE:	FM:	FS:	SS:	CP: VP:
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO:	FE:	FM:	FS:	SS: 10	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep: 5cm		% Inundated:		No		
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 90 %	Nat:	PasHay:	Crop:	UrbCm:	Road:	Other Dev: 10% Pipeline ROW	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, R __, Rr __, U/CD __, F __, FA __, x __, other (specify): historic mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			50 meter							
2	Widths for water quality			H >1	M 8-15	L <8	Pipeline ROW loacted along one side of wetland				
3	Widths for wildlife habitat			H >100	M 15-100	L <15	Pipeline ROW loacted along one side of wetland				
4	Adjacent area vegetation condition (list % in each category)			H 90%	M 10%	L					
5	Adjacent area diversity and structure (list % in each category)			H 90%	M 10%	L					
6	Adjacent Upland Slope (list % in each category)			Steep	Mod	Gentle 100%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No							
SF7	Species of concern (Fed/Prov)? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify: No surface inlet or outlet						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm	15-30cm	up to 15cm		No ponding				
5	Signs of surface water retention observed?	SW __ cm, WSL __, WCD __, WM __ cm, SM __ cm, SD __, AD __, ID __, PMT __ x __, AI __, BT __, AR __, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay/bedrock				
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: <i>Myrica gale</i> (40%)/ <i>Alnus incana</i> (15%)/ <i>Osmunda cinnamomea</i> (15%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H__x__,ATV__,G__,M__,In__, D/D__, Im__, OAH__, li__, Sd__,E__,other__,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	____%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Dragon flies, Passerines					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV__,CP__,CO__,PO__,PA__,AV__,GB__,E__,HI__, WV__, BO__,HU__, PG__x__, BP__x__,F__, E__, R__, Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL8 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley			GPS Coordinates: 608389 E x 5002048 N				
PID:35198134		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 22-Apr-13				Site Visit Date: Sept. 25, 2013							
Weather Conditions (past 48 hours): Clear and Sunny; Rain previous day											
Seasonal Weather Conditions: Typical											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EP-SD			Size: 218 km ²							
2	% Watershed Land Cover			For: 61	Nat: 11	Past/Hay: <1	Crop: <1	Urb/Com: 1	Road: <1	Other Dev: 7 (Gravel Pit, Landfill, Industrial	
3	% Watershed WL Cover and by Class			Total: 14%	SM: <1	BO: 9	FE: 1	FM: 2	FS: 1	SS: 1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Fen/Shurb Swamp				WL size: 0.62 hectares		Landform:Slope			Landscape Position: Lotic Stream confined		
Water flow path:Throughflow				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	IfT	AF
2	# WL's within 30m project area			Total# 0	SM:	BO:	FE:	FM:	FS:	SS:	CP: VP:
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO:	FE: 20%	FM:	FS:	SS: 80%	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep: 5cm		% Inundated:		No		
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 80 %	Nat:	PasHay:	Crop:	UrbCm:	Road:	Other Dev: 20% Pipeline ROW	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, R __, Rr __, U/CD __, F __, FA x, other (specify): historic mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			100__metre							
2	Widths for water quality			H >1	M 8-15	L <8					
3	Widths for wildlife habitat			H >100	M 15-100	L <15					
4	Adjacent area vegetation condition (list % in each category)			H 90%	M	L 10%	cobble/boulder beach				
5	Adjacent area diversity and structure (list % in each category)			H 90%	M	L 10%	cobble/boulder beach				
6	Adjacent Upland Slope (list % in each category)			Steep	Mod	Gentle 10%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No							
SF7	Species of concern (Fed/Prov)? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify: No surface inlet or outlet						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm	15-30cm	up to 15cm		No ponding				
5	Signs of surface water retention observed?	SW __ cm, WSL __, WCD __, WM __ cm, SM __ cm, SD __, AD __, ID __, PMT __ x __, AI __, BT __, AR __, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay/bedrock				
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No							
SF20	WL serves as a discharge site	Yes	No							
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY										
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered			
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%						
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m						
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low						
5	Describe shoreline erosion potential	High	Med	Low						
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial					
SF21	WL ability to stabilize shoreline	H	M	L	N/A					
SECTION NINE: PLANT COMMUNITY										
1	Vegetation diversity	High	Med	Low						
1b	Dominant plant species and % cover in the WL	list: <i>Calamagrostis canadensis</i> (15%)/ <i>Alnus incana</i> (25%)/ <i>Carex trisperma</i> (20%)								
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %						
4	Vegetation Disturbance	H	M	L	specify type(s) below					
5	Disturbance Types	H__x__,ATV__,G__,M__,In__, D/D__, Im__, OAH__, li__, Sd__,E__,other__,								
7	Vegetative Integrity of plant community	E	H	M	L					
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:						
SF23	Does the WL contain a diversity of plant communities	H	M	L						
SF24	Rate the overall integrity/quality of plant community?	H	M	L						
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY										
1	Interspersion of open water and vegetation (open water types only)	H	M	L						
1b	% cover in vegetation verus open water	____%								
2	Interspersion that best fits entire wetland	H	M	L	N/A					
3	Wetland condition related to detritus	H	M	L	N/A					
4	Interspersion of other wetlands in vicinity	H	M	L						
6	Barriers/restriction between wetland and other habitat	L	M	H						
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Dragon flies, Passerines						
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A				
9	Fish species observed or evidence seen (list)	Yes	No	list:						
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha					
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species		
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:						
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF28	Overall fish and wildlife habitat quality	H	M	L						
SECTION ELEVEN: COMMUNITY USE/VALUE										
1	Describe community use	VV__,CP__,CO__,PO__,PA__,AV__,GB__,E__,HI__, WV__, BO__,HU__, PG_x__, BP_x__,F__, E__, R__, Other:								
SF29	Rate the wetland's community use/value	H	M	L						

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL9 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley			GPS Coordinates: 606913 E x 5001574 N				
PID:35094481		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 24-Apr-13				Site Visit Date: Sept. 25, 2013							
Weather Conditions (past 48 hours): Clear and Sunny; Rain previous day											
Seasonal Weather Conditions: Typical											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EP-SD			Size: 218 km ²							
2	% Watershed Land Cover			For: 61	Nat: 11	Past/Hay: <1	Crop: <1	Urb/Com: 1	Road: <1	Other Dev: 7 (Gravel Pit, Landfill, Industrial	
3	% Watershed WL Cover and by Class			Total: 14%	SM: <1	BO: 9	FE: 1	FM: 2	FS: 1	SS: 1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Coastal Saline Pond				WL size: 0.61 hectares		Landform:Basin			Landscape Position: Terrene		
Water flow path:Throughflow				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	IfT	AF
2	# WL's within 30m project area			Total# 0	SM:	BO:	FE:	FM:	FS:	SS:	CP: VP:
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO:	FE:	FM:	FS:	SS:	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep: 5cm		% Inundated:		No		
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 10 %	Nat: 10%	PasHay:	Crop:	UrbCm:	Road:	Other Dev: 80% Beach/Ocean	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD __, CW __, WcS __, O/C __,EB __,DP __,F __,M __, ES __,NE __,DwP __, M __,GC __,ATV __,DG __,EA __, R __,Rr __,U/CD __,F __,FA __, other (specify): historic farming/mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			100__metre	In close proximity to coast						
2	Widths for water quality			H >1	M 8-15	L <8					
3	Widths for wildlife habitat			H >100	M 15-100	L <15					
4	Adjacent area vegetation condition (list % in each category)			H 10%	M	L 90%	cobble/boulder beach				
5	Adjacent area diversity and structure (list % in each category)			H 10%	M	L 90%	cobble/boulder beach				
6	Adjacent Upland Slope (list % in each category)			Steep	Mod	Gentle 100%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No							
SF7	Species of concern (Fed/Prov)? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify: No surface inlet or outlet						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm 100%	15-30cm	up to 15cm		No ponding				
5	Signs of surface water retention observed?	SW __cm, WSL __, WCD __, WM __cm, SM __cm, SD __, AD __, ID __, PMT __x, AI __, BT __, AR __, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay/bedrock		Boulder/Cobble Beach		
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: <i>Potamogeton sp.</i> (5%)/ <i>Algae sp.</i> (15%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H__x__,ATV__,G__,M__,In__,D/D__,Im__,OAH__,li__,Sd__,E__,other__,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 (N/A)
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	__5__%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Dragon flies, Passerines					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list: Stickleback					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:Stickleback					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr	SpC	Red	Yellow	S1	S2	S3 (N/A)
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV__,CP__,CO__,PO__,PA__,AV__x__,GB__,E__,HI__,WV__,BO__,HU__,PG__,BP__,F__,E__,R__,Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL10 outside of Property boundary			Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)									
Project Name: Goldboro LNG			Evaluator: Scott Burley			GPS Coordinates: 607037 E x 5001949 N						
PID: 35094481	Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS											
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)												
Evaluation Date: 23-Apr-13			Site Visit Date: Sept. 27, 2013									
Weather Conditions (past 48 hours): Clear and Sunny; Rained earlier in the morning												
Seasonal Weather Conditions: Typical												
SECTION ONE: WATERSHED CHARACTERISTICS												
1	Watershed Name (tertiary): 1EP-SD		Size: 218 km ²									
2	% Watershed Land Cover		For: 61	Nat: 11	Past/Hay: <1	Crop: <1	Urb/Com: 1	Road: <1	Other Dev: 7 (Gravel Pit, Landfill, Industrial			
3	% Watershed WL Cover and by Class		Total: 14%	SM: <1	BO: 9	FE: 1	FM: 2	FS: 1	SS: 1	CP: <1	VP: Present	
SF1	Watershed condition		H	M	L							
SF2	Proportion of WL area in watershed & opportunity for floodwater detention		H	M	L							
SECTION TWO: WETLAND CHARACTERISTICS												
Wetland Type: Shurb Swamp			WL size: 0.05 hectares			Landform: Slope			Landscape Position: Lotic Stream confined			
Water flow path:Throughflow			Wetland Origin: Natural									
1	Water Regime		PF	SF	TF	SS	PS	RfT	IfT	AF		
2	# WL's within 30m project area		Total# 0	SM:	BO:	FE:	FM:	FS:	SS:	CP:	VP:	
3	Is WL part of complex		Yes	No								
4	% each wetland type in complex		SM:	BO:	FE:	FM:	FS:	SS:	CP:	VP:		
5	Is WL bordering or associated with a lake or pond?		bordering			within 100m		N/A		specify bordering Dung Pond at stream inlet		
6	Standing water?		Yes	Avg Dep: 5cm			% Inundated: No					
7	Inlet or Outlet (circle all that apply)?		Inlet	Outle								
8	Adjacent Upland Land Use within 100m (%)		For: 80 %	Nat:	PasHay:	Crop:	UrbCm:	Road:	Other Dev: 20% Pond			
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).		DD __, CW __, WcS __, O/C __,EB __,DP __,F __,M __, ES __,NE __,DwP __, M __,GC __,ATV __,DG __,EA __, R __,Rr __,U/CD __,F __,FA __, other (specify): historic mining in area									
10	Hydrology Altered (circle all that apply)?		Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:			
SF3	Rate the general wetland condition/integrity		H	M	L							
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY												
1	Average width of adjacent naturalized buffer		100__metr									
2	Widths for water quality		H >1	M 8-15	L <8							
3	Widths for wildlife habitat		H >100	M 15-100	L <15							
4	Adjacent area vegetation condition (list % in each category)		H 100%	M	L							
5	Adjacent area diversity and structure (list % in each category)		H 100%	M	L							
6	Adjacent Upland Slope (list % in each category)		Steep	Mod 50%	Gentle 50%							
7	Adjacent land supports water quality		Yes	No	Specify:							
8	Adjacent land supports wildlife habitat		Yes	No	Specify:							
SF4	Rate the overall condition and integrity land adjacent to wetland		H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no						
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES												
SF5	Is the WL a WSS?		Yes	No								

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No							
SF7	Species of concern (Fed/Prov)? Specify. American Eel	End	Thr - SARA	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify: No surface inlet or outlet						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm	15-30cm	up to 15cm		No ponding				
5	Signs of surface water retention observed?	SW __ cm, WSL __, WCD __, WM __ cm, SM __ cm, SD __, AD __, ID __, PMT __ x __, AI __, BT __, AR __, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay, bedrock				
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No						
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	<10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	<3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: Aster umbellata (10%)/Alnus incana (60%)/ Juncus effusus(15%)							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H__x__,ATV__,G__,M__,In__,D/D__,Im__,OAH__,li__,Sd__,E__,other__,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	_95_ %							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Dragon flies, Deer trail					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species	
SF26	Does wetland support fish/fish habitat?	Yes	No	specify: Braided channels through wetland may provide fish nursery habitat					
SF27	Rare or endangered fish/wildlife species found in the wetland? American Eel	End	Thr - SARA	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV__,CP__,CO__,PO__,PA__,AV__,GB__,E__,HI__,WV__,BO__,HU__,PG__x__,BP__,F__,E__,R__,Other:							
SF29	Rate the wetland's community use/value	H	M	L					

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL11 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley			GPS Coordinates: 608129 x 5001772				
35095884		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 19-Jun-13				Site Visit Date: 19-Jun-13							
Weather Conditions (past 48 hours): Rain today; sun previous days											
Seasonal Weather Conditions: Wet Spring											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EQ-S1			Size: 518 km ²							
2	% Watershed Land Cover			For: 4690	Nat: 40%	Past/Hay: <1	Crop: <1	Urb/Com: 2	Road: 1	Other Dev: <1 (Gravel Pit Landfill, Indust	
3	% Watershed WL Cover and by Class			Total: 11%	SM: <1	BO: 6	FE: 1	FM: 2	FS: <1	SS: <1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Treed Bog				WL size: 0.44 hectares		Landform: Basin		Landscape Position: Terrene			
Water flow path: Isolated				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	Ift	AF
2	# WL's within 30m project area			Total#	SM:0	BO:0	FE:0	FM:0	FS:0	SS:0	CP:0 VP: NA
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO:	FE:	FM:	FS:	SS:	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep:		% Inundated:		No		
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 50%	Nat:	PasHay:	Crop:	UrbCm:	Road:	Other Dev: 50% cut	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD__, CW__, WcS__, O/C__, EB__, DP__, F__, M__, ES__, NE__, DwP__, M__, GC__, ATV__, DG__, EA__, R__, Rr__, U/CD__, Fx__, Fz__, other (specify): historic mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			50 meters							
2	Widths for water quality			H >15	M 8-15	L <8	Road loacted along one side of wetland				
3	Widths for wildlife habitat			H >100	M 15-100	L <15	Road loacted along one side of wetland				
4	Adjacent area vegetation condition (list % in each category)			H	M	L					
5	Adjacent area diversity and structure (list % in each category)			H	M	L					
6	Adjacent Upland Slope (list % in each category)			Steep 30%	Mod	Gentle 70%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No	Potentially American Eel (found in lower reaches of stream)						
SF7	Species of concern (Fed/Prov)? Specify. Potentially American Eel	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify:						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm	15-30cm	up to 15cm		No ponding				
5	Signs of surface water retention observed?	SW __ cm, WSL __, WCD __, WM __ cm, SM __ cm, SD __, AD __, ID __, PMT __ x __, A __, BT __, AR __, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay/bedrock				
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No	potentially						
SF20	WL serves as a discharge site	Yes	No							
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY										
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered			
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%						
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m						
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low						
5	Describe shoreline erosion potential	High	Med	Low						
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial					
SF21	WL ability to stabilize shoreline	H	M	L	N/A					
SECTION NINE: PLANT COMMUNITY										
1	Vegetation diversity	High	Med	Low						
1b	Dominant plant species and % cover in the WL	list: <i>Picea marina</i> 60% ; <i>Carex trisperma</i> 30% ; <i>Kalmia angustifolia</i> 25%								
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %						
4	Vegetation Disturbance	H	M	L	specify type(s) below					
5	Disturbance Types	H___,ATV___,G___,M___,In___, D/D___, Im___, OAH___, li___, Sd___,E___,,other___,								
7	Vegetative Integrity of plant community	E	H	M	L					
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:						
SF23	Does the WL contain a diversity of plant communities	H	M	L						
SF24	Rate the overall integrity/quality of plant community?	H	M	L						
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY										
1	Interspersion of open water and vegetation (open water types only)	H	M	L						
1b	% cover in vegetation verus open water	___%								
2	Interspersion that best fits entire wetland	H	M	L	N/A					
3	Wetland condition related to detritus	H	M	L	N/A					
4	Interspersion of other wetlands in vicinity	H	M	L						
6	Barriers/restriction between wetland and other habitat	L	M	H						
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: white throated sparrow; chickadee; garter snake						
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A				
9	Fish species observed or evidence seen (list)	Yes	No	list:						
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha					
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species		
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:						
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF28	Overall fish and wildlife habitat quality	H	M	L						
SECTION ELEVEN: COMMUNITY USE/VALUE										
1	Describe community use	VV___,CP___,CO___,PO___,PA___,AV___,GB___,E___,HI___, WV___, BO___,HU___, PG___, BP_x___,F___, E___, R___, Other:								
SF29	Rate the wetland's community use/value	H	M	L						

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the proponent

is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL12											Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)										
Project Name: Goldboro LNG						Evaluator: Scott Burley					GPS Coordinates: 608268 x 5002104										
35095884		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS																			
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)																					
Evaluation Date: 20-Jun-13					Site Visit Date: 20-Jun-13																
Weather Conditions (past 48 hours): Rain previous days, currently sunny																					
Seasonal Weather Conditions: Wet Spring																					
SECTION ONE: WATERSHED CHARACTERISTICS																					
1	Watershed Name (tertiary): 1EQ-SD					Size: 518 km ²															
2	% Watershed Land Cover					For: 46%	Nat: 40%	Past/Hay: <1	Crop: <1	Urb/Com: 2	Road: <1	Other Dev: <1 (Gravel Pit Landfill, Industrial)									
3	% Watershed WL Cover and by Class					Total: 11%	SM: <1	BO: 6	FE: 1	FM: 2	FS: <1	SS: <1	CP: <1	VP: Present							
SF1	Watershed condition					H	M	L													
SF2	Proportion of WL area in watershed & opportunity for floodwater detention					H	M	L													
SECTION TWO: WETLAND CHARACTERISTICS																					
Wetland Type: Riparian Treed Swamp						WL size: 0.17 hectares			Landform: Basin		Landscape Position: Lotic stream confined										
Water flow path: Through flow						Wetland Origin: Natural															
1	Water Regime					PF	SF	TF	SS	PS	RfT	IfT	AF								
2	# WL's within 30m project area					Total#	SM:0	BO:0	FE:0	FM:0	FS:0	SS:0	CP:0	VP: 0							
3	Is WL part of complex					Yes	No														
4	% each wetland type in complex					SM:	BO:	FE:	FM:	FS:	SS:	CP:	VP:								
5	Is WL bordering or associated with a lake or pond?					bordering		within 100m		N/A	specify										
6	Standing water?					Yes	Avg Dep:		% Inundated:		No										
7	Inlet or Outlet (circle all that apply)?					Inlet	Outlet														
8	Adjacent Upland Land Use within 100m (%)					For: 100	Nat:	PasHay:	Crop:	UrbCm:	Road:	Other Dev:									
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).					DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, R __, Rr __, U/CD __, F __, FA __, other (specify): historic mining in area															
10	Hydrology Altered (circle all that apply)?					Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:									
SF3	Rate the general wetland condition/integrity					H	M	L													
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY																					
1	Average width of adjacent naturalized buffer					>100__ mete															
2	Widths for water quality					H >15	M 8-15	L <8	Road loacted along one side of wetland												
3	Widths for wildlife habitat					H >100	M 15-100	L <15	Road loacted along one side of wetland												
4	Adjacent area vegetation condition (list % in each category)					H 100%	M	L													
5	Adjacent area diversity and structure (list % in each category)					H	M	L													
6	Adjacent Upland Slope (list % in each category)					Steep 60%	Mod 0	Gentle 40%													
7	Adjacent land supports water quality					Yes	No	Specify:													
8	Adjacent land supports wildlife habitat					Yes	No	Specify:													
SF4	Rate the overall condition and integrity land adjacent to wetland					H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no												
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES																					
SF5	Is the WL a WSS?					Yes	No														

SF6	Does the WL support commercial/recreational fish/shellfish?	Yes	No							
SF7	Species of concern (Fed/Prov)? Specify. Potentially American Eel	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify:						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm	15-30cm	up to 15cm		No ponding				
5	Signs of surface water retention observed?	SW __ cm, WSL __, WCD __, WM __ cm, SM __ cm, SD __, AD __, ID __, PMT x __, AD __, BT __, AR __, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay/bedrock				
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No	potentially						
SF20	WL serves as a discharge site	Yes	No							
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY										
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered			
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	L <10%						
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m						
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low						
5	Describe shoreline erosion potential	High	Med	Low						
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial					
SF21	WL ability to stabilize shoreline	H	M	L	N/A					
SECTION NINE: PLANT COMMUNITY										
1	Vegetation diversity	High	Med	Low						
1b	Dominant plant species and % cover in the WL	list: <i>Osmunda cinnamomea</i> 40%; <i>Acer rubrum</i> 20%								
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %						
4	Vegetation Disturbance	H	M	L	specify type(s) below					
5	Disturbance Types	H_x____,ATV____,G____,M____,In____, D/D____, Im____, OAH____, li____, Sd____,E____,other____,								
7	Vegetative Integrity of plant community	E	H	M	L					
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:						
SF23	Does the WL contain a diversity of plant communities	H	M	L						
SF24	Rate the overall integrity/quality of plant community?	H	M	L						
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY										
1	Interspersion of open water and vegetation (open water types only)	H	M	L						
1b	% cover in vegetation verus open water	85 %								
2	Interspersion that best fits entire wetland	H	M	L	N/A					
3	Wetland condition related to detritus	H	M	L	N/A					
4	Interspersion of other wetlands in vicinity	H	M	L						
6	Barriers/restriction between wetland and other habitat	L	M	H						
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Passerires ; Deer tracks						
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A				
9	Fish species observed or evidence seen (list)	Yes	No	list:						
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha					
11	WL provides habitat for:	Amphibians	Reptiles	Waterfowl	Waterbirds	Mammals	Fish	R/E species		
SF26	Does wetland support fish/fish habitat?	Yes	No	specify:						
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr	SpC	Red	Yellow	S1	S2	S3	N/A
SF28	Overall fish and wildlife habitat quality	H	M	L						
SECTION ELEVEN: COMMUNITY USE/VALUE										
1	Describe community use	VV____,CP____,CO____,PO____,PA____,AV____,GB____,E____,HI____, WV____, BO____,HU____, PG____, BP____,F____, E____, R____, Other:								
SF29	Rate the wetland's community use/value	H	M	L						

SF ratings highlighted in red indicate critical wetland functions or watershed conditions that are highly degraded. Whenever a wetland is found to have red-highlighted **SFs** the

proponent is encouraged to contact NSE for advice about the approval because NSE is unlikely to approve alterations to wetlands that would affect these red-rated functions.

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APPENDIX C: WL13 Nova Scotia Wetland Evaluation Technique Field Data Sheet (September 2011)											
Project Name: Goldboro LNG				Evaluator: Scott Burley			GPS Coordinates: 607390 x 5002423				
35066158		Site Address: Goldboro Industrial Park, Goldboro, Guysborough County, NS									
Sources and Dates of Mapping/Images: NS Wetlands Inventory (2012); NS Forest Inventory (Current Forest Data - 2004); Google Earth (2007)											
Evaluation Date: 19-Jun-13				Site Visit Date 19-Jun-13							
Weather Conditions (past 48 hours): Sun today, rained previous days											
Seasonal Weather Conditions: Wet spring											
SECTION ONE: WATERSHED CHARACTERISTICS											
1	Watershed Name (tertiary): 1EP-5D			Size: 218 km ²							
2	% Watershed Land Cover			For: 61	Nat: 11	Past/Hay: <1	Crop: <1	Urb/Com: 1	Road: <1	Other Dev: 7 (Gravel Pit, Landfill, Industrial)	
3	% Watershed WL Cover and by Class			Total: 14%	SM: <1	BO: 9	FE: 1	FM: 2	FS: 1	SS: 1	CP: <1 VP: Present
SF1	Watershed condition			H	M	L					
SF2	Proportion of WL area in watershed & opportunity for floodwater detention			H	M	L					
SECTION TWO: WETLAND CHARACTERISTICS											
Wetland Type: Treed Bog				WL size: 0.19 hectares			Landform: Basin			Landscape Position: Lotic stream - confined	
Water flow path: Perennial through flow				Wetland Origin: Natural							
1	Water Regime			PF	SF	TF	SS	PS	RfT	IfT	AF
2	# WL's within 30m project area			Total#	SM:	BO:	FE:	FM:	FS:	SS:	CP: VP:
3	Is WL part of complex			Yes	No						
4	% each wetland type in complex			SM:	BO:	FE:	FM:	FS:	SS:	CP:	VP:
5	Is WL bordering or associated with a lake or pond?			bordering		within 100m		N/A	specify		
6	Standing water?			Yes	Avg Dep: % Inundated:			No			
7	Inlet or Outlet (circle all that apply)?			Inlet	Outlet						
8	Adjacent Upland Land Use within 100m (%)			For: 100%	Nat:	PasHay:	Crop:	UrbCm:	Road:	Other Dev:	
9	Are there stressors in WL or WL buffer area? Circle primary stressor(s).			DD __, CW __, WcS __, O/C __, EB __, DP __, F __, M __, ES __, NE __, DwP __, M __, GC __, ATV __, DG __, EA __, R __, Rr __, U/CD __, F __, FA __, other (specify): historic mining in area							
10	Hydrology Altered (circle all that apply)?			Ditching	Dams	Tiles	Culvert	Well	Diversion	Other Specify:	
SF3	Rate the general wetland condition/integrity			H	M	L					
SECTION THREE: ADJACENT LAND CONDITION AND INTEGRITY											
1	Average width of adjacent naturalized buffer			>100__m							
2	Widths for water quality			H >15	M 8-15	L <8	Road loacted along one side of wetland				
3	Widths for wildlife habitat			H >100	M 15-100	L <15	Road loacted along one side of wetland				
4	Adjacent area vegetation condition (list % in each category)			H 100%	M	L					
5	Adjacent area diversity and structure (list % in each category)			H 100%	M	L					
6	Adjacent Upland Slope (list % in each category)			Steep 70%	Mod	Gentle 30%					
7	Adjacent land supports water quality			Yes	No	Specify:					
8	Adjacent land supports wildlife habitat			Yes	No	Specify:					
SF4	Rate the overall condition and integrity land adjacent to wetland			H	M	L	is buffer required to maintain red flag functions of wetland? If yes if no				
SECTION FOUR: DOCUMENTED IMPORTANT FEATURES											
SF5	Is the WL a WSS?			Yes	No						

SF6	Does the WL support commercial/recreational fish/shellfish? American Eel	Yes	No	Potentially American Eel (found in lower reaches of stream)						
SF7	Species of concern (Fed/Prov)? Specify. Potentially American Eel	End	Thr - COSEWIC	SpC	Red	Yellow	S1	S2	S3	N/A
SF8	Wetland has conservation/compensation agreements/activity?	Yes	No	specify:						
SF9	Wetland is calcerous fen, black ash or cedar swamp?	Yes	No							
SF10	Within Drinking Water Protected Area (designated watershed/wellfield)	Yes	No	specify:						
SF11	WL within a floodplain and upstream of or within of a populated area?	Yes	No							
SF12	Fed/Prov/Municipal area of interest?	Yes	No	specify:						
SECTION FIVE: HYDROLOGIC CONDITION AND INTEGRITY										
1	Is WL source of stream or headwater(wc order 1 or 2)	Yes	No	Specify:						
2	Is WL geographically isolated?	Yes	No	Specify:						
3	WL ability to maintain characteristic hydrologic regime	High		Med		Low				
4	Water Storage Depth (list % in each class)	>30cm	15-30cm	up to 15cm		No ponding				
5	Signs of surface water retention observed?	SW __ cm, WSL __, WCD __, WM __ cm, SM __ cm, SD __, AD __, ID __, PMT x __, BT __, AR __, Other:								
6	Describe observable/historical anthropogenic sediment delivery	Low		Med		High				
7	Disturbance of WL soils	Low		Med		High				
8	Predominant soils adjacent to WL	Sand		Silt/loam		Clay/bedrock				
9	Capacity of WL to alter/retard flows	High		Med		Low				
10	Roughness coefficient for surface water flow path	High		Med		Low				
11	Stormwater/Wastewater/Agricultural runoff detention	High		Med		Low				
12	Water Source	Natural		Mostly natural		Partly altered		Controlled		
13	Hydrology of tidal wetlands	Unrestricted		Reduced		Restricted		N/A		
14	Coastal storm surge	Yes	No							
SF13	WL hydrologic condition	Natural	Modified	Significantly Modified						
SF14	WL important for maintaining stream flow?	Yes	No							
SF15	WL ability to detain surface water	High	Med	Low						
SECTION SIX: WATER QUALITY										
1	Stormwater/Wastewater/Agricultural runoff as water source?	High		Med		Low				
2	Nutrients/sediments from surrounding land	High		Med		Low				
3	Significant flood/stormwater attenuation	Yes	No							
4	Vegetation capacity to settle suspended sediments	High		Med		Low				
5	WL type /landscape position holds/filters runoff?	Yes	No							
SF16	Wetland improves water quality?	Yes	No							
SF17	Evidence of excess nutrient loading/contamination?	Low	Med	High						
SF18	WL contributes to water quality in downstream resources	High	Med	Low						
SECTION SEVEN: GROUNDWATER INTERACTIONS										
1	Describe soils in wetland	Recharge		Discharge						
2	Land use / run off in subwatershed upstream	Recharge		Discharge						
3	Conditions of upland soils within 200m of wetland	Recharge		Discharge						
4	Hydroperiod of wetland	Recharge		Discharge						
5	Describe inlet/outlet configuration	Recharge		Discharge						
6	Characterize topographic relief surrounding wetland	Recharge		Discharge						

SF19	WL serves as a recharge site	Yes	No	potentially					
SF20	WL serves as a discharge site	Yes	No						
SECTION EIGHT: SHORELINE STABILIZATION AND INTEGRITY									
1	Wetland fringing ocean/estuary/lake/pond/river/stream?	Yes	No	streamwidth >4m	streamwidth<4m	WB Exposed	WB Sheltered		
2	% cover of rooted vegetation in shallow water zone	H >50%	M 10-50	<10%					
3	Avg veg WL width b/w shoreline/streambank & 2 m depth contour	H >10m	M 3-10	L <3m					
4	Prevalence of strong-stemmed emerg. veg (shoreline marshes and fens only)	High	Med	Low					
5	Describe shoreline erosion potential	High	Med	Low					
6	Shoreline/streambank veg condition upslope of water level	Low	Med	High	Artificial				
SF21	WL ability to stabilize shoreline	H	M	L	N/A				
SECTION NINE: PLANT COMMUNITY									
1	Vegetation diversity	High	Med	Low					
1b	Dominant plant species and % cover in the WL	list: Alnus incana 20% ; Picea mariana 20% ; Osmunda cinnanomea 15%							
3	Dominant Non-native or Invasive species and % cover	Yes	No	specify: %					
4	Vegetation Disturbance	H	M	L	specify type(s) below				
5	Disturbance Types	H___,ATV___,G___,M___,In___, D/D___, Im___, OAH___, li___, Sd___,E___,other___,							
7	Vegetative Integrity of plant community	E	H	M	L				
SF22	Is the plant community unique or rare regionally or provincially?	Yes	no	specify:					
SF23	Does the WL contain a diversity of plant communities	H	M	L					
SF24	Rate the overall integrity/quality of plant community?	H	M	L					
SF25	Are there any observed rare or endangered plant species? Specify.	End	Thr	SpC	Red	Yellow	S1	S2	S3 N/A
SECTION TEN: FISH AND WILDLIFE HABITAT AND INTEGRITY									
1	Interspersion of open water and vegetation (open water types only)	H	M	L					
1b	% cover in vegetation verus open water	__98__%							
2	Interspersion that best fits entire wetland	H	M	L	N/A				
3	Wetland condition related to detritus	H	M	L	N/A				
4	Interspersion of other wetlands in vicinity	H	M	L					
6	Barriers/restriction between wetland and other habitat	L	M	H					
7	Noteworthy wildlife or evidence (birds, mammals, amphibians,etc)	Yes	No	list: Passerines; Deer trails					
8	Connected to permanent water (accessible to fish)?	Exceptional	High	Med	Low	N/A			
9	Fish species observed or evidence seen (list)	Yes	No	list:					
10	Wetland part of contiguous upland or wetland:	>50ha	25-50ha	10-25ha	<10ha				
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SF26	Does wetland support fish/fish habitat?	Yes	No	specify:					
SF27	Rare or endangered fish/wildlife species found in the wetland?	End	Thr- COSEWIC	SpC	Red	Yellow	S1	S2	S3 N/A
SF28	Overall fish and wildlife habitat quality	H	M	L					
SECTION ELEVEN: COMMUNITY USE/VALUE									
1	Describe community use	VV___,CP___,CO___,PO___,PA___,AV___,GB___,E___,HI___, WV___, BO___,HU___, PG___, BP___,F___, E___, R___, Other:							
SF29	Rate the wetland's community use/value	H	M	L					

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