APPENDIX A

OHIO RAPID ASSESSMENT METHOD DATA SHEETS

ORAM v. 5.0 Field Form Quantitative Rating

Site: Calvert C	Cliffs Nuclear Power Plant		Date:	February 21, 2008
Wetlands:	WA-1		Rater:	H. Fogell, A. Davis
1 Points Subtotal Points	Metric 1. Wetland Area (size). (maselect one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2h 10 to <25 acres (4 to <10.1ha) (3 to <10 acres (1.2 to <4ha) (3 to <10 acres (0.12 to <1.2ha) X 0.1 to <0.3 acres (0.04 to <0.12 color) <p><0.1 acres (0.04ha) (0 pts)</p> Metric 2. Upland buffers and surres.	a) (5 pts) (4 pts) pts)) (2pts) ha) (1 pt)	•	
Subtotal Points	2a. Calculate average buffer width (select on X WIDE. Buffers average 50m (1 MEDIUM. Buffers average 25m NARROW. Buffers average 10 VERY LOW. 2nd growth or old LOW. Old field (>10 years), shi MODERATELY HIGH. Resider HIGH. Urban, industrial, open processing the selection of	64ft) or more around wetlan to <50m (82 to <164ft) arm to <25m (32ft to <82ft) arage <10m (<32ft) around wone or double check & aveer forest, prairie, savannahrubland, young second grontial, fenced pasture, park,	ound wetland perimete around wetland perime retland perimeter (0) rage) , wildlife area, etc. (7) wth forest. (5) conservation tillage, n	eter (1)
Subtotal Points	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply. High pH groundwater (5) X Precipitation (1) X Seasonal/Intermittent surface w Perennial surface water (lake of the surface water (lake of the surface) 3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other X Part of wetland/upland (e.g. fore X) Part of riparian or upland corride	rater (3) r stream) (5) 3 human use (1) est), complex (1)	Semi- to per X Regularly int Seasonally int Seasonally int Seasonally int Seasonally int Seasonally int Seasonally int Recover or down X Recovered (X Recovering	ble check & average) rmanently inundated/saturated (4) undated/saturated (3) inundated (2) saturated in upper 30cm (12in) (1) tural hydrologic regime. ble check & average) ne apparent (12) (7)
	3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)	المعالمين المعالمين	Check all disturt ditch dike tile weir stormwater input	bances observed
46 213 Subtotal Points	Metric 4. Habitat Alteration and E 4a. Substrate disturbance. Score one or do None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1)	uble check and average.	c. Habitat alteration. None or not X Recovered	
	4b. Habitat development. Select one. Excellent (7) Very good (6) Good (5) X Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	Check all disturbation mowing grazing clearcutting selective cutting woody debris removed toxic pollutants	ances observed sh	or recovery (1) or recovery (1)

Site: Calvert Cli	ffs Nuclear Power Plant		Date:	February 21, 2008	
Wetland:	WA-1		Rater:	H. Fogell, A. Davis	\neg
		· ·	ratori	11. 1 ogon, 71. David	
46 subtotal first	page				
46	Metric 5. Special Wetlands. (max 10 pts.)			
Subtotal Points	Check all that apply and score as indicated				
	Bog (10 pts)				
* 4.	Fen (10 pts)				
A Section of the Sect	Old Growth Forest (10 pts)				
1.1	Mature forested wetland (5 pts)				
• 4	Lake Erie coastal/tributary wetland-unrest				
	Lake Erie coastal/tributary wetland-restric		(5 pts)		
	Lake Plain Sand Prairies (Oak Openings)	(10 pts)		,	
	Relict Wet Prairies (10 pts) Known occurrence state/federal threatene	d or ondonaci	ad species (10)		
•	Significant migatory songbird/waterfowl ha	_			
	Category 1 Wetland. See Question 1 of C	-			
			3- (
58	Metric 6. Plant Communities, interspersi	on, microt	ppography. (max 20 pts	s.;'	
Subtotal Points	6a. Wetland Vegetation Communities				
	Score all present using 0 to 3 scale	Vegetatio	n Community Cover Sc	ale	
	0 Aquatic bed	0	Absent or comprises <0.1 ha	(0.2471 acres) contiguous area	
	0 Emergent	,	Present and either comprises	•	
	2 Shrub	1	vegetation and is of moder		
	1_Forest		significant part but is of low		_
	0 Mudflats		Present and either comprises	•	
	Open water	2	part and is of high quality	ate quality or comprises a small	ł
÷	0 Other (list)		 	cant part, or more, of wetland's	_
ra Mara	6b. Horizontal (plan view) interspersion	3	vegetation and is of high q		
***	Select only one				
	High (5)	Narrative	Description of Vegetati	on Quality	
	Moderately high (4)	law	Low spp diversity and/or pred	ominance of nonnative or	
ue.	Moderate (3)	low	disturbance tolerant native	species	
<i>}</i> *	X Moderately low (2)		Native spp are dominant com	ponent of the vegetation,	
	Low (1)	ľ	_	disturbance tolerant native spp	
•	None (0)	moderate	can also be present, and s moderately high, but gener	pecies diversity moderate to	
•			threatened or endangered	· ·	
•	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list.				_
	Neich to Pable 1 Orominiong form for list.		A predominance of native spe	cies, with nonnative spp t native spp absent or virtually	
	Add or deduct points for coverage	high		sity and often, but not always,	
	Extensive >75 % cover (-5)		the presence of rare, threa	tened, or endangered spp	
	Moderate 25-75% cover (-3)				
•	Sparse 5-25% cover (-1)	Mudflat a	nd Open Water Class Q	uality	
	Nearly Absent <5% cover (0)	0	Absent < 0.1 ha (0.2471 acres)	
	X Absent (1)	1	Low 0.1 ha to <1 ha (0.2471	acres to 2.47 acres)	
	-	2	Moderate 1 ha to <4 ha (2.47	acres 9.88 acres)	
	6d. Microtopography	3 .	High 4 ha (9.88 acres) or more	e	
	Score all present using 0 to 3 scale	Migrataria	aranhy Coyor Soals		
	1 Vegetated hummocks/tussocks		graphy Cover Scale		_
•	3 Coarse woody debris >15 cm (6")	0	Absent		-
* -	0 Standing dead > 25 cm (10") dbh 2 Amphibian breeding pools	1	Present very small amounts o of marginal quality	r if more common	
*	2 Amphibian breeding pools			but not of highest	
* * ** **		2	Present in moderate amounts quality or in small amounts	·	
			Present in moderate or greate		٦
		3	and of highest quality	a sinositto	i

Background Information Form

Name:	H. Fogell, A. Davis			Date:	February 21, 2008
Affiliation:	MACTEC Enginee	ring & Consulting			
User Address:	3301 Atlantic Ave,	Raleigh, NC.			
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com				
Wetlands Name	WA-1				
Location of Wetle including address available	See OF	RAM Figure in CCNPP	Wetlands	Master Pla	n/USACE IP
			Sources of used (check all to	information hat apply)	
Lat/Lon or UTM	38.42463/-76.4333	33	Site Visit		
USGS Quad	Cove Point, MD		USGS To	po	V
Hydrologic Unit Co		20600040403			7
Wetland Size (acr			OWI Map		
How was size es			Aerial Pho	oto	v
			Soil Surve		V
			ODNR - D		
	Wetlands Delineation/	GIS	Delineatio Report/Ma		<u> </u>
Photograph					
final score:	58	Provisional Wetland C	ataganu	Category 2	

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands N	ame WA-1		
1: Critical H	abitat	√NO	YES
2: Threaten	ed or Endangered Species	✓NO	YES
3: Documen	ted High Quality Wetland	√ NO	YES
4: Significa	nt Breeding or Concentration Area (waterfowl)	☑ NO	YES
5: Category	1 Wetlands (hydrologically isolated)	☑ NO	YES
6: Bogs		☑no	YES
7: Fens		✓NO	YES
8a: "Old Gro	owth Forest"	✓NO	YES
8b: Mature I	Forested Wetlands	☑ NO	☐ YES
9a: Lake Eri	e Coastal and Tributary Wetlands	☑NO	YES
9b: Hydrolo	gy result of Erosion Control Measures (Lake Erie)	√ NO	YES
9c: Hydrolo	gy unrestricted	☑ NO	YES
9d: Native S	pecies Predominate	□no	☑ YES
9e: Non-nat	ive Species Predominate	☑ NO	YES
10: Oak Ope	enings	✓NO	YES
11: Relict W	let Prairies	ON 🖸	□YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

58 Category 2

ORAM v. 5.0 Field Form Quantitative Rating

Site: Calvert Cli	ffs Nuclear Power Plant		Date:	February 21, 2008
Wetlands:	WA-10		Rater:	H. Fogell, A. Davis
		a) (5 pts) 4 pts) 50ts) 6) (2pts) 6) (1 pt) Dunding land use. (maximum of the second	Rater: ax 14 pts) d perimeter (7) and wetland perimeter (2) bound wetland perimeter (3)	H. Fogell, A. Davis
36 20 M Subtotal Points	2b. Intensity of surrounding land use (select of X VERY LOW. 2nd growth or older LOW. Old field (>10 years), shr MODERATELY HIGH. Residen HIGH. Urban, industrial, open positive of Water. Score all that apply.	er forest, prairie, savannah, v ubland, young second growt tial, fenced pasture, park, co aasture, row cropping, mining	wildlife area, etc. (7) th forest. (5) onservation tillage, new g, construction. (1) Duration inundation/s (select one or double	aturation. e check & average)
	High pH groundwater (5) X Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface w X Perennial surface water (lake or	stream) (5)	Regularly inundated Seasonally inundated	urated in upper 30cm (12in) (1)
	3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other Part of wetland/upland (e.g. fore X Part of riparian or upland corrido	human use (1) est), complex (1)	(select one or double	e check & average) apparent (12)
	3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)			nces observed point source (nonstormwater) filling/grading road bed/RR track dredging other- list
49 13 🛠	Metric 4. Habitat Alteration and D) pts.)	
Subtotal Points	Aa. Substrate disturbance. Score one or dou None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select one.	-	Habitat alteration. Sc None or none X Recovered (6) Recovering (3) Recent or no re	
subtotal this	Excellent (7) Very good (6) Good (5) X Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	Check all disturband mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrut herbi sedir dred	

ORAM v. 5.0 Field Form Q					
	Cliffs Nuclear Power Plant		Date:	February 21, 2008	
Wetland:	WA-10		Rater:	H. Fogell, A. Davis	
49 subtotal fire	st page				
49	Metric 5. Special Wetlands. (max 10 pt	s.)		/	
Subtotal Points	Check all that apply and score as indicated				
	Bog (10 pts) Fen (10 pts)				
	Old Growth Forest (10 pts)				
	Mature forested wetland (5 pts)				
	Lake Erie coastal/tributary wetland-unre	estricted hydrolog	gy (10 pts)		
	Lake Erie coastal/tributary wetland-rest		(5 pts)		
	Lake Plain Sand Prairies (Oak Opening	s) (10 pts)			
	Relict Wet Prairies (10 pts) Known occurrence state/federal threate	ned or endanger	red species (10)		
•	Significant migatory songbird/waterfowl				
•	Category 1 Wetland. See Question 1 o	-			
					
56	Metric 6. Plant Communities, intersper	sion, microt	opography. (max 20 pt	s.;	
Subtotal Points	6a. Wetland Vegetation Communities	Vogotatio	n Community Cover So	a a la	
	Score all present using 0 to 3 scale O Aquatic bed	0		(0.2471 acres) contiguous area	
	1 Emergent		Present and either comprises	<u> </u>	
144 - F1	0 Shrub	1	vegetation and is of mode	rate quality, or comprises a	
14.7	1 Forest		significant part but is of lov	w quality	
e years	0 Mudflats	2	Present and either comprises	= '	
NEW P. C	0 Open water 0 Other (list)	2	part and is of high quality	rate quality or comprises a small	
	o Journal (not)	-	Present and comprises signif	icant part, or more, of wetland's	
The section is	6b. Horizontal (plan view) interspersion	3	vegetation and is of high o	quality	
	Select only one	Managathia	D	ian Ovalita	
gal et	High (5)	Narrative	Description of Vegetat Low spp diversity and/or pred		
	Moderately high (4) Moderate (3)	low	disturbance tolerant native		
	Moderately low (2)		Native spp are dominant com	anoment of the vegetation	
	X Low (1)		l ·	r disturbance tolerant native spp	
	None (0)	moderate	can also be present, and a moderately high, but gene	species diversity moderate to	
	6c. Coverage of invasive plants.		threatened or endangered		
	Refer to Table 1 ORAM long form for list.		A predominance of native spe	ecies with nonnative spn	
		high	1	nt native spp absent or virtually	
	Add or deduct points for coverage	,g		rsity and often, but not always, atened, or endangered spp	
	Extensive >75 % cover (-5)		and production of rare, three	action, or critical gerod app	
	X Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	Mudflat a	nd Open Water Class C	Quality	
	Nearly Absent <5% cover (0)	0	Absent <0.1 ha (0.2471 acres		
	Absent (1)	1.	Low 0.1 ha to <1 ha (0.2471	acres to 2.47 acres)	
•		2	Moderate 1 ha to <4 ha (2.47	· · · · · · · · · · · · · · · · · · ·	
,	6d. Microtopography	3	High 4 ha (9.88 acres) or mo	re	
	Score all present using 0 to 3 scale 2 Vegetated hummocks/tussocks	Microtopo	graphy Cover Scale		
i di	2 Coarse woody debris >15 cm (6")	0	Absent		
	1 Standing dead > 25 cm (10") dbh	1	Present very small amounts	or if more common	
	2 Amphibian breeding pools	<u>'</u>	of marginal quality		
		2	Present in moderate amounts	•	
			quality or in small amount Present in moderate or great		
		1 3	p soom in moderate or great	or arrivante	

and of highest quality

Background Information Form

		and anna man					
Name:	H. Fogell, A. Davis		Date:	February 21, 2008			
Affiliation:	MACTEC Engineering & Consulting						
User Address:	3301 Atlantic Ave.	, Raleigh, NC.		ik			
Phone:	919-876-0416						
e-mail address	akdavis@mactec.com	1					
Wetlands Name	WA-10						
Location of Wetla including address available	See ()	RAM Figure in CCNPP	· A	n/USACE IP			
			Sources of information used (check all that apply)				
Lat/Lon or UTM	38.42564/-76.443	04	Site Visit				
USGS Quad	Cove Point, MD		USGS Topo	7			
Hydrologic Unit Co		20600060706	NWI Map	7			
Wetland Size (acre		1	OWI Map				
How was size est	imated?	1 MAA TON MAN TO LINE CO. TONOMIC. TO SEE THE STATE OF THE SECTION	Aerial Photo	V			
			Soil Survey	V			
	Wetlands Delineation	ICIS	ODNR - DNAP				
	vveuarius Deirieation.	7616	Delineation Report/Map	Ø			
Photograph							
final score:	56	Provisional Wetland C	Category: Category 2				

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands Na	me WA-10		
		-	
1: Critical Ha	bitat	☑ NO	YES
2: Threatened	d or Endangered Species	✓no	YES
3: Document	ed High Quality Wetland	IJ NO	YES
4: Significant	Breeding or Concentration Area (waterfowl)	✓NO	YES
5: Category 1	Wetlands (hydrologically isolated)	✓NO	YES
6: Bogs		☑ NO	YES
7: Fens		✓NO	YES
8a: "Old Grov	wth Forest"	☑ NO	YES
8b: Mature Fo	prested Wetlands	✓ NO	YES
9a: Lake Erie	Coastal and Tributary Wetlands	✓NO	YES
9b: Hydrolog	y result of Erosion Control Measures (Lake Erie)	☑ NO	YES
9c: Hydrolog	y unrestricted	☑ NO	YES
9d: Native Sp	pecies Predominate	✓ NO	YES
9e: Non-nativ	ve Species Predominate	□NO	☑ YES
10: Oak Oper	nings	☑ NO	YES
11: Relict We	t Prairies	☑NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

56 Category 2

ORAM v.	5.0	Field	Form	Quant	tative	Ratin	

Site: Calvert (Cliffs Nuclear Power Plant	D	Date: February 22, 2008			
Wetlands:	WA-11	R	ater:	H. Fogell, A. Davis		
1 당성(조) Subtotal Points	Metric 1. Wetland Area (size). (ma Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha 10 to <25 acres (4 to <10.1ha) (3 to <10 acres (1.2 to <4ha) (3 p 0.3 to <3 acres (0.12 to <1.2ha) X 0.1 to <0.3 acres (0.04 to <0.12la) <0.1 acres (0.04ha) (0 pts)	ax 6 pts) a) (5 pts) 4 pts) ots) (2pts)				
15 July Subtotal Points	Metric 2. Upland buffers and surre 2a. Calculate average buffer width (select one X WIDE. Buffers average 50m (16 MEDIUM. Buffers average 25m NARROW. Buffers average 10m VERY NARROW. Buffers average	e, do not double check) 64ft) or more around wetland per to <50m (82 to <164ft) around v m to <25m (32ft to <82ft) around age <10m (<32ft) around wetland	rimeter (7) wetland perimeter (4 d wetland perimeter d perimeter (0)			
	Intensity of surrounding land use (select of X VERY LOW. 2nd growth or olde LOW. Old field (>10 years), shr MODERATELY HIGH. Residen HIGH. Urban, industrial, open p	er forest, prairie, savannah, wildl ubland, young second growth fo tial, fenced pasture, park, conse	ife area, etc. (7) rest. (5) ervation tillage, new	fallow field. (3)		
35 20	Metric 3. Hydrology. (max 30 pts)	3d. Du	ration inundation/sa	turation		
Subtotal Points	3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface w	(se	Semi- to permar Regularly inunda Seasonally inun	check & average) nently inundated/saturated (4) ated/saturated (3)		
	3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other Part of wetland/upland (e.g. fore X Part of riparian or upland corridor	3e. Mo (st human use (1))st), complex (1)	diffications to natura elect one or double None or none a X Recovered (7) Recovering (3) Recent or no re	pparent (12)		
	3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)	☐ ditd☐ ditd☐ ditd☐ tile☐ wei☐ stol	eir	ces observed] point source (nonstormwater)] filling/grading] road bed/RR track] dredging] other- list		
48 13	Metric 4. Habitat Alteration and D	evelopment. (max 20 pt	.s.)			
Subtotal Points	4a. Substrate disturbance. Score one or dot None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select one.	- 4с. <u>На</u>	None or none a X Recovered (6) Recovering (3) Recent or no rec			
	Excellent (7) Very good (6) Good (5) X Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	Check all disturbances mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	s observed shrub, herbai sedim dredg	/sapling removal ceous/aquatic bed removal entation ing		
48 subtotal th	, is page					

oite. Calvert	Cliffs Nuclear Power Plant		Date:	February 21, 2008
Wetland:	WA-11		Rater:	H. Fogell, A. Davis
L				<u> </u>
48 subtotal fir	rst page			
Journal III				
48 700	Metric 5 Special Motlanda (mov 40 =4-	: 1		
	Metric 5. Special Wetlands. (max 10 pts	P-)		
Subtotal Points	Check all that apply and score as indicated			
	Bog (10 pts)			
	Fen (10 pts)			
	Old Growth Forest (10 pts)			
	Mature forested wetland (5 pts)			
	Lake Erie coastal/tributary wetland-unres	stricted hydrolog	ıy (10 pts)	
	Lake Erie coastal/tributary wetland-restri	icted hydrology	(5 pts)	
	Lake Plain Sand Prairies (Oak Openings	s) (10 pts)		
	Relict Wet Prairies (10 pts)			
	Known occurrence state/federal threater	ned or endanger	ed species (10)	
	Significant migatory songbird/waterfowl	habitat or usage	· (10 pts)	
	Category 1 Wetland. See Question 1 of	Qualitative Rati	ng. (-10 pts)	
ali, s				
59 [541]	Metric 6. Plant Communities, interspers	sion, microte	ppography. (max 20 pts	s. <u>'</u> ,
Subtotal Points	6a: Wetland Vegetation Communities		•	
	Score all present using 0 to 3 scale	Vegetatio	n Community Cover So	ale
	0 Aquatic bed	0		(0.2471 acres) contiguous area
	0 Emergent		Present and either comprises	·
	1 Shrub	1 1	•	rate quality, or comprises a
v - v,	2 Forest	'	significant part but is of lov	
***			· · · · · · · · · · · · · · · · · · ·	
1,1	0 Mudflats	2	Present and either comprises	significant part of wetland's rate quality or comprises a small
	0 Open water	4	part and is of high quality	rate quality or comprises a siliali
	O (Other (list)		<u> </u>	
	66 H. S. 1111 S. 1111	3	, -	icant part, or more, of wetland's
•	6b. Horizontal (plan view) interspersion		vegetation and is of high q	wanty
	Select only one	N =	Department of the control of the con	iam Qualife
	High (5)	Narrative	Description of Vegetat	
	Moderately high (4)	low	Low spp diversity and/or pred	
	X Moderate (3)		disturbance tolerant native	species
	Moderately low (2)		Native spp are dominant com	ponent of the vegetation,
	Low (1)		although nonnative and/or	disturbance tolerant native spp
	None (0)	moderate	1	species diversity moderate to
			moderately high, but gene	- ·
	6c. Coverage of invasive plants.		threatened or endangered	ahh
	Refer to Table 1 ORAM long form for list.		A predominance of native spe	ecies, with nonnative spp
		high		at native spp absent or virtually
	Add or deduct points for coverage	high	absent, and high spp diver	rsity and often, but not always,
v ==	Extensive >75 % cover (-5)		the presence of rare, threa	atened, or endangered spp
	Moderate 25-75% cover (-3)	-, 		
· //-	Sparse 5-25% cover (-1)	Mudflat aı	nd Open Water Class C	luality
and desired	Nearly Absent <5% cover (0)	0	Absent < 0.1 ha (0.2471 acres	
	X Absent (1)	1	Low 0.1 ha to <1 ha (0.2471	·
		2	Moderate 1 ha to <4 ha (2.47	
	6dMicrotopography	3	High 4 ha (9.88 acres) or mor	
	Score all present using 0 to 3 scale		1 1.2. 1.1. (0.00 doles) 01 HD.	<u></u>
	1 Vegetated hummocks/tussocks	Microtona	graphy Cover Scale	
	⊢		T	
	2 Coarse woody debris >15 cm (6")	0	Absent	
	0 Standing dead > 25 cm (10") dbh	1	Present very small amounts of	or if more common
	1 Amphibian breeding pools		of marginal quality	
		2	Present in moderate amounts	
			quality or in small amounts	s of highest quality
		3	Present in moderate or greate	er amounts
			and of highest quality	V

Background Information Form

		ckground informa			
Name:	H. Fogell, A. Davis		Date:	February 22, 2008	
Affiliation:	MACTEC Engineering & Consulting				
User Address:	3301 Atlantic Ave, Raleigh, NC.				
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com				
Wetlands Name	WA-11		######################################		
Location of Wetla including addres available	SAA OI	RAM Figure in CCNPP		n/USACE IP	
			Sources of information used (check all that apply)		
Lat/Lon or UTM	38.43123/-76.4567	78	Site Visit	V	
USGS Quad	Cove Point, MD		USGS Topo	V	
Hydrologic Unit Co		20600060706		☑	
Wetland Size (acre		0.16	OWI Map		
How was size est	timated?		Aerial Photo	7	
			Soil Survey	7	
	Wetlands Delineation/	CIS	ODNR - DNAP		
	vveuarius Deimeation/	GIO	Delineation Report/Map	Ø	
Photograph	*				
final score:	59	Provisional Wetland C	ategory: Category 2		

Name:	H. Fogell, A. Davis	Date:	February 22, 2008
Wetlands N	ame WA-11		
1: Critical H	abitat	☑ NO	YES
2: Threaten	ed or Endangered Species	√ио	YES
3: Documer	nted High Quality Wetland	✓NO	YES
4: Significa	nt Breeding or Concentration Area (waterfowl)	✓ NO	YES
5: Category	1 Wetlands (hydrologically isolated)	☑no	YES
6: Bogs		√ NO	YES
7: Fens		⊿ NO	YES
8a: "Old Gr	owth Forest"	☑ NO	YES
8b: Mature	Forested Wetlands	✓NO	YES
9a: Lake Eri	ie Coastal and Tributary Wetlands	☑ NO	YES
9b: Hydrolo	gy result of Erosion Control Measures (Lake Erie)	✓NO	YES
9c: Hydrolo	gy unrestricted	✓NO	YES
9d: Native S	Species Predominate	□no	YES
9e: Non-nat	ive Species Predominate	✓ NO	YES
10: Oak Ope	enings	√ NO	YES
11: Relict W	let Prairies	☑ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

59 Category 2

	liffs Nuclear Power Plant		Date:	February 22, 2008
Wetlands:	WA-12		Rater:	H. Fogell, A. Davis
1 Points	Metric 1. Wetland Area (size). (ma Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha 10 to <25 acres (4 to <10.1ha) (3 to <10 acres (1.2 to <4.2ha) X 0.1 to <0.3 acres (0.12 to <1.2ha) X 0.1 to <0.3 acres (0.04 to <0.12) <0.1 acres (0.04ha) (0 pts)	a) (5 pts) 4 pts) ots)) (2pts)		
1211. Subtotal Points	Metric 2. Upland buffers and surre 2a. Calculate average buffer width (select on X WIDE. Buffers average 50m (10 MEDIUM. Buffers average 25m NARROW. Buffers average 10m VERY NARROW. Buffers average 10m VERY LOW. 2nd growth or olde X WIDE. Surrounding land use (select of the control o	e, do not double check) 64ft) or more around wetland i to <50m (82 to <164ft) aroun in to <25m (32ft to <82ft) aroun age <10m (<32ft) around wetl cone or double check & average forest, prairie, savannah, webland, young second growth tital, fenced pasture, park, co	perimeter (7) and wetland perimeter (4) und wetland perimeter (1) land perimeter (0) ae) rildlife area, etc. (7) an forest. (5) anservation tillage, new fa	1)
31 Points	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface w Perennial surface water (lake or 3b. Connectivity. Score all that apply. 100 year floodplain (1) X Between stream/lake and other Part of wetland/upland (e.g. fore Part of riparian or upland corrido	human use (1) est), complex (1) or (1)	Regularly inunda Seasonally inund	theck & average) ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1) thydrologic regime. theck & average) eparent (12) every (1)
	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)		ditch	point source (nonstormwater) filling/grading road bed/RR track dredging other- list
43 August 25 Subtotal Points	Metric 4. Habitat Alteration and D 4a. Substrate disturbance. Score one or doi None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select one. Excellent (7)	uble check and average.	Habitat alteration. Score None or none ap X Recovered (6) Recovering (3) Recent or no reco	
1000 pm 1000 p	Very good (6) Good (5) Moderately good (4) X Fair (3) Poor to fair (2) Poor (1)	mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/s herbac sedime dredgir	-

43 subtotal this page

Site: Calvert Clif	fs Nuclear Power Plant	,	Date:	February 21, 2008
Wetland:	. WA-12		Rater:	H. Fogell, A. Davis
43 subtotal first p	page			
43	Metric 5. Special Wetlands. (max 10 pts	1		
Subtotal Points	Check all that apply and score as indicated	••)		•
Oubtotal 1 Ollits	Bog (10 pts)	-		
	Fen (10 pts)			
	Old Growth Forest (10 pts)			
*	Mature forested wetland (5 pts)			
	Lake Erie coastal/tributary wetland-unres	stricted hydrolog	yy (10 pts)	
·	Lake Erie coastal/tributary wetland-restri		(5 pts)	
	Lake Plain Sand Prairies (Oak Openings	i) (10 pts)		
1.7	Relict Wet Prairies (10 pts) Known occurrence state/federal threater	od or ondanger	ad species (10)	
	Significant migatory songbird/waterfowl	_		
	Category 1 Wetland. See Question 1 of	_		
	<u> </u>			
51 8 🥱	Metric 6. Plant Communities, interspers	sion, microte	opography. (max 20 pts	5. <u>'</u>
Subtotal Points	6a. Wetland Vegetation Communities			
,	Score all present using 0 to 3 scale		n Community Cover Sc	
•	0 Aquatic bed	.0		(0.2471 acres) contiguous area
	1 Emergent	1 .	Present and either comprises vegetation and is of moder	
* 1	2 Forest	'	significant part but is of lov	, , ,
**************************************	0 Mudflats	···· ·· ·· · · · · · · · · · · · · · ·	Present and either comprises	significant part of wetland's
	0 Open water	2	1	ate quality or comprises a small
	0 Other (list)		part and is of high quality	
		3		cant part, or more, of wetland's
	6b. Horizontal (plan view) interspersion		vegetation and is of high q	uality
	Select only one High (5)	Narrative	Description of Vegetati	on Quality
	Moderately high (4)		Low spp diversity and/or pred	
	Moderate (3)	low	disturbance tolerant native	
	X Moderately low (2)		Native spp are dominant com	ponent of the vegetation,
	Low (1)		although nonnative and/or	disturbance tolerant native spp
	None (0)	moderate	can also be present, and s moderately high, but gener	pecies diversity moderate to
	6c. Coverage of invasive plants.		threatened or endangered	
	Refer to Table 1 ORAM long form for list.		A predominance of native spe	alog with poppositive and
<i>:</i>		himb	1	t native spp absent or virtually
2.	Add or deduct points for coverage	high		sity and often, but not always,
	Extensive >75 % cover (-5)		the presence of rare, threa	tened, or endangered spp
**************************************	X Moderate 25-75% cover (-3)	M. dilat a	ad Onen Water Class O	
	Sparse 5-25% cover (-1) Nearly Absent <5% cover (0)	0	nd Open Water Class Q Absent <0.1 ha (0.2471 acres	
•	Absent (1)	1	Low 0.1 ha to <1 ha (0.2471	
,		2	Moderate 1 ha to <4 ha (2.47	
	6d. Microtopography	3	High 4 ha (9.88 acres) or mor	
	Score all present using 0 to 3 scale			
	1 Vegetated hummocks/tussocks		graphy Cover Scale	
• •	2 Coarse woody debris >15 cm (6")	0	Absent	
	1 Standing dead > 25 cm (10") dbh Amphibian breeding pools	1	Present very small amounts o of marginal quality	r if more common
		2	Present in moderate amounts quality or in small amounts	
	•	3	Present in moderate or greate and of highest quality	er amounts

	Ba	ckground Informa	ition Forn	n		
Name:	H. Fogell, A. Davis	.		Date:	February 22, 2008	
Affiliation:	MACTEC Engineering & Consulting					
User Address:	3301 Atlantic Ave,	Raleigh, NC.				
Phone:	919-876-0416					
e-mail address	akdavis@mactec.com					
Wetlands Name	WA-12					
Location of Wetle including addres available	SAA OL	RAM Figure in CCNPF	Wetlands	Master Pla	an/USACE IP	
			Sources of used (check all the			
Lat/Lon or UTM	38.43020/-76.4546	62	Site Visit		2	
USGS Quad	Cove Point, MD		USGS Top	00	✓ ,	
Hydrologic Unit Co	ode	20600060706	NWI Map		7	
Wetland Size (acr	es)	0.28	OWI Map			
How was size es	timated?		Aerial Pho	to	 ✓	
			Soil Surve	у	V	
			ODNR - D			
	Wetlands Delineation/	GIS .	Delineation Report/Ma			
Photograph						
final score:	51	Provisional Wetland (^ategon/:	Category 2		

Name:	H. Fogell, A. Davis	Date:	February 22, 2008
Wetlands Name	WA-12		·
			•
1: Critical Habita	ıt	☑ NO	YES
2: Threatened or	Endangered Species	☑ NO	YES
3: Documented I	High Quality Wetland	☑ NO	YES
4: Significant Br	eeding or Concentration Area (waterfowl)	☑ NO	YES
5: Category 1 We	etlands (hydrologically isolated)	☑ NO	YES
6: Bogs		✓NO	YES
7: Fens		☑ NO	YES
8a: "Old Growth	Forest"	√ NO	YES
8b: Mature Fores	sted Wetlands	✓ NO	YES
9a: Lake Erie Co	astal and Tributary Wetlands	☑ NO	YES
9b: Hydrology re	esult of Erosion Control Measures (Lake Erie)	☑ NO	YES
9c: Hydrology ui	nrestricted	✓ NO	YES
9d: Native Speci	es Predominate	☑ NO	□YES
9e: Non-native S	pecies Predominate	□no	✓ YES
10: Oak Opening	js ·	✓ NO	YES
11: Relict Wet Pr	rairies	✓ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

51 Category 2

ORAM v. 5.0 Field Form Quantitative Rating

Site: Calvert	Cliffs Nuclear Power Plant		Date:	February 22, 2008
Wetlands:	WA-13		Rater:	H. Fogell, A. Davis
2 2 3 Subtotal Points	Metric 1. Wetland Area (size). (m <u>Select one size class and assign score.</u> >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2l 10 to <25 acres (4 to <10.1ha) 3 to <10 acres (1.2 to <4ha) (3	ha) (5 pts) (4 pts)		
	X 0.3 to <3 acres (0.12 to <1.2hc 0.1 to <0.3 acres (0.04 to <0.12 <0.1 acres (0.04ha) (0 pts)	a) (2pts) 2ha) (1 pt)		
16 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	Metric 2. Upland buffers and survey as Calculate average buffer width (select or MEDIUM. Buffers average 50m (MEDIUM. Buffers average 25m NARROW. Buffers average 10m VERY NARROW. Buffers average 10m NARROW. Buffers and survey as NARROW. Buffers average 10m NARROW. Buffers average 10m NARROW.	ne, do not double check) 164ft) or more around wetla m to <50m (82 to <164ft) ar 0m to <25m (32ft to <82ft)	and perimeter (7) round wetland perimeter (4) around wetland perimeter (1	()
	Note that the second seco	der forest, prairie, savannal nrubland, young second gro intial, fenced pasture, park,	n, wildlife area, etc. (7) with forest. (5) conservation tillage, new fa	illow field. (3)
Subtotal Points	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) Precipitation (1) X Seasonal/Intermittent surface of the perennial surface water (lake of	water (3) or stream) (5)	Regularly inundate Seasonally inundate Seasonally satura	neck & average) ently inundated/saturated (4) ed/saturated (3) ated (2) eted in upper 30cm (12in) (1)
	3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and othe Part of wetland/upland (e.g. for X) Part of riparian or upland corrid	r human use (1) rest), complex (1)	(select one or double ch (select one or double ch None or none and X Recovered (7) Recovering (3)	eck & average) parent (12)
1	3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X < 0.4m (<15.7in) (1)		dike dile weir	es observed point source (nonstormwater) filling/grading road bed/RR track dredging other- list
49 313 Subtotal Points	Metric 4. Habitat Alteration and II 4a. Substrate disturbance. Score one or do None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	ouble check and average.		one or double check and average. parent (9)
49 Quiptotal th	4b. Habitat development. Select one. Excellent (7) Very good (6) Good (5) X Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	Check all disturbation mowing grazing clearcutting selective cutting woody debris remotoric pollutants	Recent or no reco	apling removal ous/aquatic bed removal ntation g

Extensive >75 % cover (-5)

Moderate 25-75% cover (-3)

Sparse 5-25% cover (-1).

X Nearly Absent <5% cover (0)

Absent (1)

6d. Microtopography

Score all present using 0 to 3 scale

	1	Vegetated hummocks/tussocks				
		Coarse woody debris >15 cm (6")				
1	0	Standing dead > 25 cm (10") dbh				
	1	Amphibian breeding pools				

Mudflat and Open Water Class Quality

0 Absent <0.1 ha (0.2471 acres)		Absent <0.1 ha (0.2471 acres)
	1	Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres)
Г	2	Moderate 1 ha to <4 ha (2.47 acres 9.88 acres)
Γ	3	High 4 ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very smail amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

	Ва	ckground Informa	tion Form		
Name:	H. Fogell, A. Davi	3		ate: F	ebruary 22, 2008
Affiliation:	MACTEC Engine	ering & Consulting			
User Address:	3301 Atlantic Ave	Raleigh, NC.			
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com	1			
Wetlands Name	WA-13				
Location of Wetla including addres available	See	RAM Figure in CCNPF ation			USACE IP
			Sources of infused (check all that		
Lat/Lon or UTM	38.42987/-76.456	14	Site Visit		V
USGS Quad	Cove Point, MD		USGS Topo		V
Hydrologic Unit Co		20600060706			4
Wetland Size (acr		0.3	OWI Map		
How was size es	timated?		Aerial Photo		☑
			Soil Survey		7
	14/	/OIG	ODNR - DNA	AP.	
	Wetlands Delineation	GIS	Delineation Report/Map		V
Photograph	·				
final score:	57	Provisional Wetland (Category: C	ategory 2	A MARINE AND

Name:	H. Fogell, A. Davis	Date:	February 22, 2008
Wetlands N	ame WA-13		
1: Critical H	abitat	☑ NO	YES .
2: Threaten	ed or Endangered Species	✓NO	YES
3: Documen	ted High Quality Wetland	✓ NO	YES
4: Significa	nt Breeding or Concentration Area (waterfowl)	☑ NO	YES
5: Category	1 Wetlands (hydrologically isolated)	☑ NO	YES
6: Bogs		☑ NO	YES
7: Fens		☑ NO	YES
8a: "Old Gre	owth Forest"	√ NO	YES
8b: Mature I	Forested Wetlands	☑no	YES
9a: Lake Eri	e Coastal and Tributary Wetlands	☑ NO	YES
9b: Hydrolo	gy result of Erosion Control Measures (Lake Erie)	☑ NO	YES
9c: Hydrolo	gy unrestricted	☑ NO	YES
9d: Native S	pecies Predominate	□NO	☑ YES
9e: Non-nat	ive Species Predominate	✓NO	YES
10: Oak Ope	enings	√ NO	YES
11: Relict W	et Prairies	√ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

57 Category 2

Site: Calvert 0	Cliffs Nuclear Power Plant	Date:	February 22, 2008
Wetlands:	WA-14	Rater:	H. Fogell, A. Davis
1 (3.103)	Metric 1. Wetland Area (size). (max 6 pts)		1
Subtotal Points	Select one size class and assign score.		,
•	>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts)		
	10 to <25 acres (4 to <10.1ha) (4 pts)		
	3 to <10 acres (1.2 to <4ha) (3 pts)		
	0.3 to <3 acres (0.12 to <1.2ha) (2pts)		
	X 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)		
	<0.1 acres (0.04ha) (0 pts)		
. 10 💛 🧓	Metric 2. Upland buffers and surrounding land u	se. (max 14 pts)	
Subtotal Points	2a. Calculate average buffer width (select one, do not double che		
	WIDE. Buffers average 50m (164ft) or more around	I wetland perimeter (7)	
	X MEDIUM. Buffers average 25m to <50m (82 to <16		
	NARROW. Buffers average 10m to <25m (32ft to < VERY NARROW. Buffers average <10m (<32ft) and		(1)
		J	•
	2b. Intensity of surrounding land use (select one or double check		
	VERY LOW. 2nd growth or older forest, prairie, sav X LOW. Old field (>10 years), shrubland, young seco		
	MODERATELY HIGH. Residential, fenced pasture,		fallow field. (3)
	HIGH. Urban, industrial, open pasture, row croppin	g, mining, construction. (1)	
0E XXX/5388	Matuia 2 Undualarus (may 20 mta)	2d Dunation in and display	frame file in
25 15 Subtotal Points	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply.	3d. Duration inundation/sa (select one or double	
Subtotal Points	High pH groundwater (5)	<u> </u>	nently inundated/saturated (4)
Ay Car	X Other groundwater (3)	—	ated/saturated (3)
	X Precipitation (1)	Seasonally inun	
·**51.*	X Seasonal/Intermittent surface water (3)	Seasonally satu	rated in upper 30cm (12in) (1)
7.7	Perennial surface water (lake or stream) (5)	O- Martifications to make	l budalania wa sima
	3b. Connectivity. Score all that apply.	3e. Modifications to natura (select one or double	
	100 year floodplain (1)	None or none a	• ,
	X Between stream/lake and other human use (1)	Recovered (7)	
	Part of wetland/upland (e.g. forest), complex (1) X Part of riparian or upland corridor (1)	Recovering (3) X Recent or no re	20000n/ (1)
	X Part of riparian or upland corridor (1)	X Recent or no re	scovery (1)
	3c. Maximum water depth. Select only 1.	_Check all disturban	-
. ·	>0.7 (27.6in) (3)	ditch _	point source (nonstormwater)
* 4	0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)	dike tile	filling/grading
	arm (rammy (ry	weir	road bed/RR track dredging
•		stormwater input	other- list
29 4 4	Metric 4. Habitat Alteration and Development. (max 20 pts)	
Subtotal Points	4a. Substrate disturbance. Score one or double check and aver	,	
Subtotal Follits	None or none apparent (4)	ago.	•
	Recovered (3)	4c. Habitat alteration. Sco	re one or double check and averag
	Recovering (2)	None or none a	
	X Recent or no recovery (1)	Recovered (6)	
		Recovering (3)	

4b. Habitat development. Select one.

Excellent (7)
Very good (6)

Good (5)
Moderately good (4)

Fair (3)
X Poor to fair (2)
Poor (1)

X Recent or no recovery (1)

Check all disturbances observed

mowing shrub/sapling removal shrub/sapling r

woody debris removal farming toxic pollutants nutrient emrichment

Score all present using 0 to 3 scale

0	Aquatic bed
1	Emergent
0	Shrub
1	Forest
0	Mudflats
0	Open water
0	Other (list)

6b. Horizontal (plan view) interspersion

Select only one

	High (5)
	Moderately high (4)
	Moderate (3)
Х	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list.

Add or deduct points for coverage

	Extensive >75 % cover (-5)
Х	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly Absent <5% cover (0)
	Absent (1)

6d. Microtopography

Score

į	all present using 0 to 3 scale		
	1	Vegetated hummocks/tussocks	
	2	Coarse woody debris >15 cm (6")	
	0	Standing dead > 25 cm (10") dbh	
	1	Amphibian breeding pools	

Vegetation Community Cover Scale

0	Absent or comprises <0.1 ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
moderate	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1 ha (0.2471 acres)
1	Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres)
2	Moderate 1 ha to <4 ha (2.47 acres 9.88 acres)
3	High 4 ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
. 2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

	Back	ground Informat	tion Form		
Name:	H. Fogell, A. Davis		Da	ite: Fel	oruary 22, 2008
Affiliation:	MACTEC Engineering & Consulting				
User Address:	3301 Atlantic Ave, Raleigh, NC.				
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com				
Wetlands Name	WA-14	æ			
Location of Wetla including addres available	See ORA	M Figure in CCNPP	Wetlands Ma	ster Plan/US	SACE IP
			Sources of info used (check all that a		
Lat/Lon or UTM	38.42822/-76.45391		Site Visit		7
USGS Quad	Cove Point, MD		USGS Topo		V
Hydrologic Unit Co		20600060706	NWI Map		V
Wetland Size (acr		0.37	OWI Map		
How was size es	timated?		Aerial Photo		7
			Soil Survey		7
			ODNR - DNA	P	
	Wetlands Delineation/GI	S	Delineation		
			Report/Map		7
Photograph					
final score:	34	Provisional Wetland C	ategory: 1 o	r 2 gray zone	

Name:	H. Fogell, A. Davis	Date:	February 22, 2008
Wetlands I	Name WA-14		
1: Critical	Habitat	☑ NO	YES
2: Threater	ned or Endangered Species	√ NO	☐YES
3: Docume	nted High Quality Wetland	✓NO	YES
4: Significa	ant Breeding or Concentration Area (waterfowl)	✓NO	YES
5: Categor	y 1 Wetlands (hydrologically isolated)	☑ NO	YES
6: Bogs		☑ NO	YES
7: Fens		NO	YES
8a: "Old G	rowth Forest"	✓ NO	YES
8b: Mature	Forested Wetlands	☑NO	YES
9a: Lake E	rie Coastal and Tributary Wetlands	✓NO	YES
9b: Hydrol	ogy result of Erosion Control Measures (Lake Erie)	✓NO	YES
9c: Hydrology unrestricted		☑ NO	YES
9d: Native	Species Predominate	☑ NO	YES
9e: Non-na	tive Species Predominate	□no	✓ YES
10: Oak Op	penings	☑ NO	YES
11: Relict \	Wet Prairies	√ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

34 1 or 2 gray zone

ORAM v. 5.0 Field Form Quan		ID-4	
	ffs Nuclear Power Plant	Date:	February 22, 2008
Wetlands:	WA-15	Rater:	H. Fogell, A. Davis
2 22 Subtotal Points	Metric 1. Wetland Area (size). (max 6 pts) Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) X 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)		·
16 M43 Subtotal Points	Metric 2. Upland buffers and surrounding land uza. Calculate average buffer width (select one, do not double che WIDE. Buffers average 50m (164ft) or more around MEDIUM. Buffers average 25m to <50m (82 to <16 NARROW. Buffers average 10m to <25m (32ft to VERY NARROW. Buffers average <10m (<32ft) are	<u>eck)</u> d wetland perimeter (7) 64ft) around wetland perimeter (4) <82ft) around wetland perimeter (1	1)
	Intensity of surrounding land use (select one or double check X VERY LOW. 2nd growth or older forest, prairie, say LOW. Old field (>10 years), shrubland, young second MODERATELY HIGH. Residential, fenced pasture HIGH. Urban, industrial, open pasture, row cropping.	vannah, wildlife area, etc. (7) and growth forest. (5) , park, conservation tillage, new fa	illow field. (3)
32 16	Metric 3. Hydrology. (max 30 pts)	3d. Duration inundation/satu	ration.
Subtotal Points	3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)	Regularly inundat Seasonally inundat	ently inundated/saturated (4) ed/saturated (3) ated (2) ated in upper 30cm (12in) (1)
·	3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1) X Part of riparian or upland corridor (1)	(select one or double of None or none ap Recovered (7) Recovering (3) X Recent or no rec	neck & average) parent (12)
	3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)	dike	es observed point source (nonstormwater) filling/grading road bed/RR track dredging other- list
4210	Metric 4. Habitat Alteration and Development. (max 20 pts.)	
Subtotal Points	4a. Substrate disturbance. Score one or double check and average X None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	4c. Habitat alteration. Score None or none ap Recovered (6)	one or double check and average parent (9) Active beaver dam
	4h Hahitat development. Select one	Recent or no reco	

Check all disturbances observed

shrub/sapling removal

nutrient emrichment

dredging

farming

herbaceous/aquatic bed removal sedimentation

mowing

grazing clearcutting

selective cutting

woody debris removal toxic pollutants

42 subtotal this page

Excellent (7)

Very good (6) Good (5)

X Fair (3) Poor to fair (2)

Poor (1)

Moderately good (4)

6d. Microtopography

Score all present using 0 to 3 scale

	Vegetated hummocks/tussocks
2	Coarse woody debris >15 cm (6")
0	Standing dead > 25 cm (10") dbh
3	Amphibian breeding pools

0	Absent <0.1 ha (0.2471 acres)
1	Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres)
2	Moderate 1 ha to <4 ha (2.47 acres 9.88 acres)
3	High 4 ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

		Background Inform	ation Form	1	
Name:	H. Fogell,			Date:	February 22, 2008
Affiliation:	MACTEC	Engineering & Consulting			
User Address:	3301 Atlan	tic Ave, Raleigh, NC.			
Phone:	919-876-0	416			
e-mail address	akdavis@ma	ctec.com			41 11 1
Wetlands Name	WA-15				
Location of Wetla including address available		See ORAM Figure in CCNF Application	P Wetlands I	Master Plar	n/USACE IP
			Sources of i used (check all th		
Lat/Lon or UTM	38.42583/-	76.45718	Site Visit		V
	Cove Point, I		USGS Top	0	V
Hydrologic Unit Co		2060006070			2
Wetland Size (acre		0.8	4 OWI Map		
How was size est	imated?		Aerial Phot		7
			Soil Survey		2
	Mottanda Da	lineation/GIS	ODNR - DI	NAP	
	vveuarius De	ili leation / Gro	Delineation Report/Ma		Ø
Photograph					*

Provisional Wetland Category:

Category 2

54

final score:

Name:	H. Fogell, A. Davis	Date:	February 22, 2008			
Wetlands N	Wetlands Name WA-15					
1: Critical H	labitat	☑ NO	YES			
2: Threaten	ed or Endangered Species	✓NO	YES			
3: Documer	nted High Quality Wetland	✓NO	YES			
4: Significa	nt Breeding or Concentration Area (waterfowl)	✓NO	YES			
5: Category	1 Wetlands (hydrologically isolated)	√ NO	YES			
6: Bogs		☑ NO	YES			
7: Fens		☑ NO	YES			
8a: "Old Gr	owth Forest"	✓NO	YES			
8b: Mature Forested Wetlands			YES			
9a: Lake Er	ie Coastal and Tributary Wetlands	✓ NO	YES			
9b: Hydrolo	gy result of Erosion Control Measures (Lake Erie)	☑ NO	YES			
9c: Hydrology unrestricted		✓ NO	YES			
9d: Native S	Species Predominate	✓NO	YES			
9e: Non-nat	tive Species Predominate	□no	✓ YES			
10: Oak Op	enings	√ NO	YES ,			
11: Relict W	/et Prairies	√ NO	YES			

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
. 1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

54 Category 2

ORAM v. 5.0 Field Form Quantitative Rating

Site: Calvert Cli	ffs Nuclear Power Plant		Date:	February 22, 2008
Wetlands:	WA-16A		Rater:	H. Fogell, A. Davis
1 Subtotal Points	Metric 1. Wetland Area (size). (ma Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha 10 to <25 acres (4 to <10.1ha) (3 to <10 acres (1.2 to <4ha) (3 pta) 0.3 to <3 acres (0.12 to <1.2ha) X 0.1 to <0.3 acres (0.04 to <0.12) <0.1 acres (0.04ha) (0 pts) Metric 2. Upland buffers and surre	a) (5 pts) 4 pts) ots)) (2pts) ha) (1 pt)		
Subtotal Points	2a. Calculate average buffer width (select on X WIDE. Buffers average 50m (16 MEDIUM. Buffers average 25m NARROW. Buffers average 10r VERY NARROW. Buffers average 10r VERY NARROW. Buffers average 2b. Intensity of surrounding land use (select of VERY LOW. 2nd growth or old LOW. Old field (>10 years), shr MODERATELY HIGH. Residen X HIGH. Urban, industrial, open p	s4ft) or more around wetland to <50m (82 to <164ft) around to <25m (32ft to <82ft) around ge <10m (<32ft) around wetland or double check & average forest, prairie, savannah, wubland, young second growth tial, fenced pasture, park, cor	nd wetland perimeter (4 und wetland perimeter and perimeter (0) (e) ildlife area, etc. (7) in forest. (5) inservation tillage, new	
28 219 Subtotal Points	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface w Perennial surface water (lake or	3d. i	Ouration inundation/sat (select one or double of X Semi- to perman Regularly inundation	check & average) nently inundated/saturated (4) ated/saturated (3)
	3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other X Part of wetland/upland (e.g. fore	human use (1) est), complex (1) or (1)	Modifications to natural (select one or double of None or none a X Recovered (7) X Recovering (3) Recent or no re	check & average) pparent (12) covery (1)
eren Mari	3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)		Check all disturban ditch	ces observed point source (nonstormwater) filling/grading road bed/RR track dredging other- list
37.5 (\$) 9.5% Subtotal Points	4a. Substrate disturbance. Score one or dout None or none apparent (4) Recovered (3) X Recovering (2) Recent or no recovery (1)	uble check and average.		re one or double check and average. pparent (9)
37.5 subtotal this r	4b. Habitat development. Select one. Excellent (7) Very good (6) Good (5) Moderately good (4) X Fair (3) Poor to fair (2) Poor (1)	Check all disturbance mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	Recent or no rec	sapling removal ceous/aquatic bed removal entation ng

37.5 subtotal this pag

Westind: WA-16A Rater: H. Fogell, A. Davis	Site: Calvert	Cliffs Nuclear Power Plant		Date:	February 21, 2008	
Metric 5. Special Wetlands, (max 10 pts.)				Rater:	H. Fogell, A. Davis	•
Motric 5. Special Wetlands. (max 10 pts.) Subblai Ponts Motric 6. Special Wetlands. (max 10 pts.) Check at this apply and score as indicated Sog (10 pts) Lace Ere coastalinthulary wetland-unrestricted hydrology (10 pts) Lace Ere coastalinthulary wetland-unrestricted hydrology (10 pts) Lace Ere coastalinthulary wetland-unrestricted hydrology (10 pts) Lace Plann Sand Praints (Oax Openings) (10 pts) Note of the Coastalinthulary wetland-unrestricted hydrology (10 pts) Lace Plann Sand Praints (Oax Openings) (10 pts) Note of the Coastalinthulary wetland-unrestricted hydrology (10 pts) Lace Plann Sand Praints (Oax Openings) (10 pts) Metric 8. Plant Communities Score all present using 0 10 3 scale 1 Energent 1 Energent 1 Energent 1 Energent 1 Energent 1 Energent 2 Forest 0 Open water 1 Energent 2 Energent 2 Energent using 0 to 3 scale 1 Energent 2 Energent					55-11/ 2-11-2	
Check all find south and spoor as indicated	37.5 subtotal t	first page		•		
Check all find south and spoor as indicated						
Bog (10 obs) Fin (10 pts)	37.5	Metric 5. Special Wetlands. (max 10 pt	s.)			
Fen (10 jps)	Subtotal Points					
Muture forested wetter (15 pts)		—			•	
Matture firested wettend (5 pts) Lake Eric constalt/includary wetland-unrestricted hydrology (10 pts) Lake Eric constalt/includary wetland-unrestricted hydrology (5 pts) Lake Eric constalt/includary wetland-in-restricted hydrology (5 pts) Relict Wet Prairies (10 pts)		· · · · · ·				
Lake Eric coastal/thu/lary welland-unrestricted hydrology (10 pts) Lake Prains (10 pts) Lake Prains (10 pts) Relict Wet Relict Re						
Lake Eric coastal/tributary wetland-restricted hydrotogy (5 pts) Lake Plain Sand Priaries (Oak Openings) (10 pts) Relict Wet Prairies (10 pts) Relict			estricted hydrolog	nv (10 pts)		
Lake Plan Sand Prairies (Oak Openings) (10 pts) Relative Wel Prairies (10 pts) Rown occurrence state/federal threatened or endangered species (10) Significant migratory songbirdwaterfowt habitat or usage (10 pts) Category Weltand See Question of a Qualitative Rating, (-10 pts) Metric 6. Plant Communities, interspersion, microtopography, (max 20 pts.) Sa. Weltand Vegetation Communities Score all present using 0 to 3 scale Q Aqualic bed 1 Emergent Shrub Q Dutlatis Q Open water Q Op				•• • • •		
Relict Welf Prairies (10 jpts) Relict Meter Repaires (10 jpts) Significant migatory songbird/waterflowl habitat or usage (10 jpts) Category 1 Wetland. See Question 1 of Qualitative Rating. (10 jpts) Metric 6. Plant Communities, interspersion, microtopography. (max 20 jpts.) 8. Wetland Vesetation Communities Score all present using 0 to 3 scale Description Description		·		· · · ·		
Significant migatory songlar/dwater/owk habitat or usage (10 pts)						
Add or deduct points Category 1 Wetland. See Question 1 of Qualitative Rating. (-10 pts)		Known occurrence state/federal threate	ened or endange	red species (10)		
Metric 6. Plant Communities, interspersion, microtopography. (max 20 pts.) Subtotal Points Metric 6. Plant Communities Score all present using 0 to 3 scale Q Aqualic bed 1 Emergent 1 Shrub 1 Prosent 1 Shrub 1 Present and either comprises small part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of high quality or comprises a significant part of wetland's vegetation and is of high quality or comprises a significant part of wetland's vegetation and is of high quality or comprises a significant part of wetland's vegetation and is of high quality or comprises a significant part of wetland's vegetation and is of high quality or moderate to part and is of high quality or moderate to part and is of high quality or moderate to part and is of high quality or moderate to part and is of high quality or moderate to disturbance tolerant native species. Narrative Description of Vegetation Quality Narrative Description of			-			
Subtotal Points Soor all present using 0 to 3 scale 0 Aquatic bed 1 Emergent 1 Shrub 2 Forest 0 Mudritats 0 Open water 0 Other (list) 2 Forest 1 High (5) Moderately high (4) X Moderately low (2) Low (1) None (0) None (0) None (1) None (1) Sparse 5-25% cover (-5) X Sparse 5-25% cover (-1) Nearly Absent <-5% cover (0) Absent (-1) Resent and either comprises singlificant part of wetland's vegetation and is of high quality Narrative Description of Vegetation Quality		Category 1 Wetland. See Question 1 c	of Qualitative Rat	ing. (-10 pts)		
Subtotal Points Soor all present using 0 to 3 scale 0 Aquatic bed 1 Emergent 1 Shrub 2 Forest 0 Mudritats 0 Open water 0 Other (list) 2 Forest 1 High (5) Moderately high (4) X Moderately low (2) Low (1) None (0) None (0) None (1) None (1) Sparse 5-25% cover (-5) X Sparse 5-25% cover (-1) Nearly Absent <-5% cover (0) Absent (-1) Resent and either comprises singlificant part of wetland's vegetation and is of high quality Narrative Description of Vegetation Quality	45.5 L 0	Matria & Plant Communities interens	roion miorot	onography (may 20 pt	n 1	
Score all present using 0 to 3 scale O Aquatic bed Emergent 1 Emergent 1 Shrub 2 Forest 0 Mudflats 0 Open water 0 Other (list) 1 Shrub 1 Shrub 2 Forest 3 Mudflats 4 Present and either comprises significant part of welland's vegetation and is of moderate quality, or comprises a significant part of well and is of high quality 3 Present and either comprises significant part of welland's vegetation and is of high quality 3 Present and either comprises significant part of welland's vegetation and is of high quality 3 Present and comprises significant part of welland's vegetation and is of high quality 4 Noderate (3) Moderately high (4) None (0) None (0) None (0) Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate 25-75% cover (-1) Nearly Absent (1) Nearly Absent (1) Absent (1) 4 Amphibian breeding pools 1 Vegetated name is of moderate quality, or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part to welland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises as significant part or comprises significant part or wetland's vegetation and is of moderate quality or moderate quality or comprises as significant part, or comprises as significant part, or comprises significant part or wetland's vegetation and is of moderate quality or comprises as significant part, or comprises as significant part or wetland's vegetation and is of moderate quality or comprises significant part or wetland's vegetation and is of moderate quality or moderate or greater and or part or wetland's vegetation and is of moderate quality or comprises significant part of wetland	3. 5.0. 20. 340	· ·	ision, microt	opograpny. (max 20 pt	.5.,	
O Absent or comprises <0.1 has (0.2471 acres) contiguous area Present and either comprises small part of wetland's vegetation and is of hoderate quality, or comprises a small part and is of low quality Depen water O Other (list) 6b. Horizontal (plan view) interspersion Select only one High (5)	Subtotal Points		Vegetatio	n Community Cover S	cale	
This property is a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality or comprises a significant part but is of low quality or comprises a significant part but is of low quality or comprises a significant part of wetland's vegetation and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a significant part of wetland's vegetation and is of high quality or comprises a significant part of wetland's vegetation and is of high quality or comprises a significant part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprises a small part of wetland's vegetation and is of high quality or comprise a significant part of wetland's vegetation and is of high quality or comprise a small part of wetland's vegetation and is of high quality or comprise at small part of wetland's vegetation and is of high quality or comprise at small and is of high quality or comprise at small and is of high quali						-/
1 Shrub 2 Forest 3 significant part but is of low quality 3 Shrub 3 Significant part but is of low quality 3 Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality 3 Present and either comprises significant part or wetland's vegetation and is of moderate quality 3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality 3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality 3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality 3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality 3 Present and either comprises significant part but is of low quality 3 Present and either comprises significant part but is of low quality 3 Present and either comprises significant part but is of low quality 3 Present and either comprises significant part but is of moderate quality or comprises a significant part but is of low quality 2 Present and either comprises significant part but is of moderate quality or comprises a significant part but is of moderate part but is of moderate and is of moderate quality or comprises significant part but is of moderate part and is of moderate part and is of finghent part and is of finghent part and is of finghent part and is of high quality Present and comprises agnificant part on or or, of wetland's vegetation and is of high quality Present and comprises agnificant part on or or, of wetland's vegetation and is of high quality Present and comprises agnificant part on ore, of wetland's vegetation and is of high quality Present and comprises agnificant part or ore, of wetland's vegetation and is of high quality Present and compr		<u>├</u>				
Mudflats O Open water O Other (list)	* .	1 Shrub	1	•	•	
Copen water	ranski se se Gartina	2 Forest		significant part but is of lo	w quality	
part and is of high quality		0 Mudflats	,	Present and either comprise	s significant part of wetland's	
8b. Horizontal (plan view) interspersion Select only one High (5) Moderately high (4) X Moderately low (2) Low (1) None (0) Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate (25-75% cover (-3) Sparse 5-25% cover (-3) Absent (1) Nearly Absent <5% cover (0) Absent (1) Score all present using 0 to 3 scale 1 Vegetated hummocks/tlussocks 2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools 3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality 1 Vegetation and is of high quality Narrative Description of Vegetation Quality Low Spp diversity and/or predominance of nonnative or disturbance tolerant native species Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderate by part of entire threatened or endangered spp A predominance of native species verifies although nonnative and/or disturbance tolerant native spp can alto be present, and species diversity moderate to moderate by passent or virtually absent, and high but diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Mudflat and Open Water Class Quality			2	1	erate quality or comprises a small	
Select only one High (5)	,	0 Other (list)		 	Garanta and a sure of weather all a	
Select only one High (5)	. :	6h Harizantal (nlan view) interspersion	3		•	
High (5) Moderately high (4) X Moderately (3) Moderately low (2) Low (1) None (0) Moderately Plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate (25-75% cover (-1) Nearly Absent (1) Nearly Absent (1) Moderate 5 / Socover (0) Absent (1) Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools Marrative Description of Vegetation Quality Low spp diversity and/or predominance of nonnative or disturbance tolerant native species diversity moderate to moderately high, but generally who presence of rare threatened or endangered spp A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudfilat and Open Water Class Quality 0 Absent <0.1 ha (0.2471 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres) 2.47 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) 3 High 4 ha (9.88 acres) or more Microtopography Cover Scale 0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality in small amounts of nighest quality 3 Present in moderate or greater amounts	<u>;</u>		L	1	,	
Noderately high (4)			Narrative	Description of Vegetat	tion Quality	
Moderate (3) Moderately low (2) Low (1) None (0) Mone (0) Moderate Modera		Moderately high (4)	low	Low spp diversity and/or pre-	dominance of nonnative or	
Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate 25-75% cover (-1) Nearly Absent <5% cover (0) Absent (1) 6d. Microtopography Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools Low (1) Refer to Table 1 ORAM long form for list. A predominance of native species, with nonnative spp and/or disturbance tolerant native spp besent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Mudflat and Open Water Class Quality Mudflat and Open Water Class Quality 1 Low 0.1 ha to <1 ha (0.2471 acres) 2 Moderate 1 ha to <4 ha (2.47 acres) 9.88 acres) 3 High 4 ha (9.88 acres) or more Microtopography Cover Scale Microtopography Cover Scale O Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts		X Moderate (3)	1044	disturbance tolerant nativ	e species C	
moderate can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Extensive >75 % cover (-3) Sparse 5-25% cover (-1) Nearly Absent <5% cover (0) Absent (1) Mudflat and Open Water Class Quality Mudflat and Open Water Class Quality Description of the present of the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the present of the presence of rare threatened or endangered spp A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the presence of rare threatened or endangered spp A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality Description of the presence of rare, threat		Moderately low (2)		Native spp are dominant con	nponent of the vegetation,	
moderately high, but generally w/o presence of rare threatened or endangered spp Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly Absent <5% cover (0) Absent (1) Nearly Absent (1) Moderate 25-75% cover (0) Absent (1) Moderate 30 pp diversity and often, but not always, the presence of rare threatened or endangered spp Mudflat and Open Water Class Quality 0 Absent <0.1 ha (0.2471 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) High 4 ha (9.88 acres) or more Microtopography Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Absent 1 Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts				1 "		
threatened or endangered spp the presence of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly Absent <5% cover (0) Absent (1) Moderate 1 ha to <4 ha (0.2471 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) 3 High 4 ha (9.88 acres) or more Microtopography Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Absent 1 Present very small amounts or if more common of marginal quality 1 Present in moderate amounts, but not of highest quality 3 Present in moderate or greater amounts		None (0)	moderate		•	
Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly Absent <5% cover (0) Absent (1) Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools Add or deduct points for coverage A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality 0 Absent <0.1 ha (0.2471 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) High absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality 0 Absent <0.1 ha (0.2471 acres to 2.47 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) High absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality 0 Absent <0.1 ha (0.2471 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) 1 High 4 ha (9.88 acres) or more Microtopography Cover Scale 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality		6a. Coverage of invasive plants			· ·	
Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly Absent <5% cover (0) Absent (1) Moderate 25-75% cover (0) Absent (1) Moderate 25-75% cover (0) Absent (1) Moderate 25-75% cover (0) Absent (1) Moderate 1 ha to <1 ha (0.2471 acres) Moderate 1 ha to <4 ha (2.47 acres) 9.88 acres) Moderate 1 ha to <4 ha (2.47 acres) Microtopography Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools Microtopography Cover Scale Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality Present in moderate or greater amounts				A prodominance of native on	asian with paraetical and	
Add or deduct points for coverage Extensive >75 % cover (-5) X Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly Absent <5% cover (0) Absent (1) Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools Add or deduct points for coverage absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality 0 Absent <0.1 ha (0.2471 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) 3 High 4 ha (9.88 acres) or more Microtopography Cover Scale 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts		-		1		
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly Absent <5% cover (0) Absent (1) 6d. Microtopography Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") Standing dead > 25 cm (10") dbh Amphibian breeding pools Mudflat and Open Water Class Quality 0 Absent <0.1 ha (0.2471 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) 3 High 4 ha (9.88 acres) or more Microtopography Cover Scale 0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts		Add or deduct points for coverage	nign		· ·	
Sparse 5-25% cover (-1) Nearly Absent <5% cover (0) Absent (1) O Absent <-0.1 ha (0.2471 acres) 1 Low 0.1 ha to <-1 ha (0.2471 acres to 2.47 acres) 2 Moderate 1 ha to <-4 ha (2.47 acres 9.88 acres) 3 High 4 ha (9.88 acres) or more Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") O Standing dead > 25 cm (10") dbh Amphibian breeding pools Microtopography Cover Scale D Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts Present in moderate or greater amounts		Extensive >75 % cover (-5)		the presence of rare, thre	atened, or endangered spp	
Nearly Absent <5% cover (0) Absent (1) O Absent <0.1 ha (0.2471 acres) 1 Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) 3 High 4 ha (9.88 acres) or more Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 5 Standing dead > 25 cm (10") dbh Amphibian breeding pools Microtopography Cover Scale O Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts		· · ·				
Absent (1) 1 Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres) 2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) 3 High 4 ha (9.88 acres) or more Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 5 Standing dead > 25 cm (10") dbh Amphibian breeding pools Microtopography Cover Scale 0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts						
2 Moderate 1 ha to <4 ha (2.47 acres 9.88 acres) 3 High 4 ha (9.88 acres) or more Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 5 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts	J1 + 1			·	'	
Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts		Absent (1)	*			
Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh 1 Amphibian breeding pools Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts		6d. Microtopography		 	******	
Vegetated hummocks/tussocks Coarse woody debris >15 cm (6") Standing dead > 25 cm (10") dbh Maphibian breeding pools Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts	Ž.			1.1.97. 1.1.4 (0.00 40.00) 0. 1110		
1 Amphibian breeding pools 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts			Microtopo	graphy Cover Scale		
1 Amphibian breeding pools 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts		2 Coarse woody debris >15 cm (6")	0	Absent		
1 Amphibian breeding pools of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality Present in moderate or greater amounts		0 Standing dead > 25 cm (10") dbh	1	Present very small amounts	or if more common	
quality or in small amounts of highest quality Present in moderate or greater amounts		1 Amphibian breeding pools		•		
Present in moderate or greater amounts			2	1	•	
		•	3	-	er amounts	

and the second s		ckground informat			
Name:	H. Fogell, A. Davis			Date:	February 22, 2008
Affiliation:	MACTEC Enginee	ring & Consulting			
User Address:	3301 Atlantic Ave,	Raleigh, NC.			
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com				
Wetlands Name	WA-16A				
Location of Wetla including addres available	500 ()				/USACE IP
			Sources of ir used (check all that		
Lat/Lon or UTM	38.43001/-76.4441	1	Site Visit		2
USGS Quad	Cove Point, MD		USGS Top	0	
Hydrologic Unit Co	ode	20600060706	NWI Map		Ø
Wetland Size (acr	es)	0.29	OWI Map		
How was size est	timated?		Aerial Phot	0	V
			Soil Survey		7
	urene sage and a sage region of a sage of a		ODNR - DN	IAP	
	Wetlands Delineation/		Delineation Report/Map		Ø
Photograph					
	AE E	Davisia at Makhard C			
final score:	45.5	Provisional Wetland C	ategory:	Category 2	

Name:	H. Fogell, A. Davis	Date:	February 22, 2008
Wetlands Nam	e WA-16A		
1: Critical Habi	tat	✓NO	□YES
2: Threatened	or Endangered Species	✓NO	YES
3: Documented	l High Quality Wetland	✓ NO	☐YES
4: Significant E	Breeding or Concentration Area (waterfowl)	✓NO	YES
5: Category 1 V	Vetlands (hydrologically isolated)	✓NO	YES
6: Bogs		✓NO	YES
7: Fens		☑ NO	YES
8a: "Old Growt	h Forest"	✓NO	YES
8b: Mature For	ested Wetlands	☑ NO	□YES
9a: Lake Erie C	oastal and Tributary Wetlands	☑ NO	YES
9b: Hydrology	result of Erosion Control Measures (Lake Erie)	✓NO	YES
9c: Hydrology	unrestricted	✓NO	☐ YES
9d: Native Spe	cies Predominate	√ NO	YES
9e: Non-native	Species Predominate	□NO	✓ YES
10: Oak Openii	ngs	☑,NO	YES
11: Relict Wet	Prairies Pra	√ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

45.5 Category 2

ORAM v. 5.0 Field Form Quantitative Rating Site: Calvert Cliffs Nuclear Power Plant Date: February 22, 2008 Wetlands: Rater: H. Fogell, A. Davis **WA-16B** 2.2 Metric 1. Wetland Area (size). (max 6 pts) Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts) Metric 2. Upland buffers and surrounding land use. (max 14 pts) 10 - 8 € 2a. Calculate average buffer width (select one, do not double check) Subtotal X WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use (select one or double check & average) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrubland, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) X HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) Metric 3. Hydrology. (max 30 pts) 26 16 3d. Duration inundation/saturation. 3a. Sources of Water. Score all that apply. (select one or double check & average) Subtotal Points High pH groundwater (5) Semi- to permanently inundated/saturated (4) X Other groundwater (3) Regularly inundated/saturated (3) Seasonally inundated (2) Precipitation (1) Seasonally saturated in upper 30cm (12in) (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3e. Modifications to natural hydrologic regime. 3b. Connectivity. Score all that apply. (select one or double check & average) 100 year floodplain (1) None or none apparent (12) Between stream/lake and other human use (1) Recovered (7) Part of wetland/upland (e.g. forest), complex (1) Recovering (3) Part of riparian or upland corridor (1) Recent or no recovery (1) Check all disturbances observed 3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) ditch point source (nonstormwater) 0.4 to 0.7m (15.7 to 27.6in) (2) ___ dike filling/grading <0.4m (<15.7in) (1) tile road bed/RR track weir dredging stormwater input other- list Metric 4. Habitat Alteration and Development. (max 20 pts.) 39 13 4a. Substrate disturbance. Score one or double check and average: Subtotal Points age.

None or none apparent (4)		
X Recovered (3)		4c. Habitat alteration. Score one or double check and avera
Recovering (2)		None or none apparent (9)
Recent or no recovery (1)		X Recovered (6)
		Recovering (3)
Habitat development. Select one.		Recent or no recovery (1)
Excellent (7)		
Very good (6)	Check all distur	bances observed
Good (5)	mowing	shrub/sapling removal
X Moderately good (4)	Grazing	herbaceous/aquatic hed removal

Excellent (7)

Very good (6)

Good (5)

Moderately good (4)

Fair (3)

Poor to fair (2)

Poor (1)

Excellent (7)

Check all disturbances observed

mowing

mowing

mowing

grazing

grazing

herbaceous/aquatic bed removal

grazing

clearcutting

sedimentation

dredging

dredging

mowing

grazing

herbaceous/aquatic bed removal

normalized

herbaceous/aquatic bed removal

herb

39 subtotal this page

46.

Site: Calvert Cliffs Nuclear Power Plant		Date:	February 21, 2008					
Wetland: WA-16B		Rater:	H. Fogell, A. Davis					
		1						
subtotal first page								
39 Metric 5. Special Wetlands. (max 10 pts	.}							
Subtotal Points Check all that apply and score as indicated								
Bog (10 pts)								
Fen (10 pts)								
Old Growth Forest (10 pts)								
Mature forested wetland (5 pts)								
——————————————————————————————————————	Lake Erie coastal/tributary wetland-unrestricted hydrology (10 pts)							
Lake Erie coastal/tributary wetland-restrict		o pis)						
Lake Plain Sand Prairies (Oak Openings Relict Wet Prairies (10 pts)	, (To pis)							
Known occurrence state/federal threaten	ed or endanger	ed species (10)						
Significant migatory songbird/waterfowl	=							
Category 1 Wetland. See Question 1 of	_							
		•						
49 Metric 6. Plant Communities, interspers	ion, microte	opography. (max 20 pt	's. ',					
Subtotal Points <u>6a. Wetland Vegetation Communities</u>	\/a==4=4!=:	· Community Cover 0						
Score all present using 0 to 3 scale	vegetation	Community Cover S	(0.2471 acres) contiguous area					
0 Aquatic bed 0 Emergent		Present and either comprise	`					
1 Shrub	1		erate quality, or comprises a					
2 Forest	ľ	significant part but is of lo						
0 Mudflats		Present and either comprise	s significant part of wetland's					
0 Open water	2	_	erate quality or comprises a small					
O Other (list)		part and is of high quality						
Sh. Harizontal (alan view) interessing	3	Present and comprises signi vegetation and is of high	ficant part, or more, of wetland's					
6b. Horizontal (plan view) interspersion Select only one	L	I graman and to or riight						
High (5)	Narrative	Description of Vegetat	tion Quality					
Moderately high (4)	low	Low spp diversity and/or pre-	dominance of nonnative or					
X Moderate (3)	1044	disturbance tolerant nativ	e species					
Moderately low (2)		Native spp are dominant con	· ·					
Low (1)	moderate	_	r disturbance tolerant native spp species diversity moderate to					
None (0)	moderate		species diversity moderate to erally w/o presence of rare					
6c. Coverage of invasive plants.		threatened or endangered	• •					
Refer to Table 1 ORAM long form for list.		A predominance of native sp	ecies, with nonnative spp					
×	high	and/or disturbance tolera	nt native spp absent or virtually					
Add or deduct points for coverage			ersity and often, but not always, atened, or endangered spp					
Extensive >75 % cover (-5)	L		, элиш догом орр					
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	Mudflat ar	nd Open Water Class (Quality					
Nearly Absent <5% cover (0)	0	Absent <0.1 ha (0.2471 acre						
X Absent (1)	, 1	Low 0.1 ha to <1 ha (0.2471	·					
	2	Moderate 1 ha to <4 ha (2.4)	7 acres 9.88 acres)					
6d. Microtopography	3	Hìgh 4 ha (9.88 acres) or mo	re					
Score all present using 0 to 3 scale	Minnet	granhy Carres Co. 1						
1 Vegetated hummocks/tussocks		graphy Cover Scale						
2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh	0	Absent	a. if man an an					
0 Standing dead > 25 cm (10) dbh	1	Present very small amounts of marginal quality	•					
	2	Present in moderate amount quality or in small amount	-					
	3	Present in moderate or great and of highest quality	er amounts					

Background Information Form

		ckyround imorma	uon Fom	·	
Name:	H. Fogell, A. Davis	3		Date:	February 22, 2008
Affiliation:	MACTEC Engine	ering & Consulting			
User Address:	3301 Atlantic Ave,	Raleigh, NC.			
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com				
Wetlands Name	WA-16B	49			
Location of Wetla including addres available	SAAC	RAM Figure in CCNPP ation			n/USACE IP
			Sources of i used (check all th		
Lat/Lon or UTM	38.42938/-76.443	30	Site Visit		
USGS Quad	Cove Point, MD		USGS Top	0	2
Hydrologic Unit Co		20600060706			•
Wetland Size (acr		0.36	OWI Map		
How was size es	timated?		Aerial Phot		7
			Soil Survey		2
	Wetlands Delineation	ICIS	ODNR - DI	NAP .	
	Vegatios Demieation	GIG	Delineation Report/Ma		v
Photograph					
final score:	49	Provisional Wetland C	ategory:	Category 2	

Name: H. Fogell, A. Davis	Date:	February 22, 2008
Wetlands Name WA-16B		
1: Critical Habitat	✓no	YES
2: Threatened or Endangered Species	✓NO	YES
3: Documented High Quality Wetland	☑no	YES
4: Significant Breeding or Concentration Area (wa	terfowl)	YES
5: Category 1 Wetlands (hydrologically isolated)	✓NO	YES
6: Bogs	✓NO	YES
7: Fens	✓NO	YES
8a: "Old Growth Forest"	✓NO	YES
8b: Mature Forested Wetlands	☑ NO	YES
9a: Lake Erie Coastal and Tributary Wetlands	✓NO	YES
9b: Hydrology result of Erosion Control Measures	(Lake Erie)	YES
9c: Hydrology unrestricted	✓NO	YES
9d: Native Species Predominate	□no	✓YES
9e: Non-native Species Predominate	✓NO	YES
10: Oak Openings	✓NO	☐ YES
11: Relict Wet Prairies	✓NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

49 Category 2

Site: Calvert 0	Cliffs Nuclear Power Plant	Date:	February 22, 2008
Wetlands:	WA-16C	Rater:	H. Fogell, A. Davis
2 225 Subtotal Points	Metric 1. Wetland Area (size). (max 6 pts) Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) X 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)		
4 22 Subtotal Points	Metric 2. Upland buffers and surrounding land up 2a. Calculate average buffer width (select one, do not double cheese with the surface selection). WIDE. Buffers average 50m (164ft) or more around MEDIUM. Buffers average 25m to <50m (82 to <16 NARROW. Buffers average 10m to <25m (32ft to VERY NARROW. Buffers average <10m (<32ft) and verage =10m (<32ft) are surface.	<u>eck)</u> d wetland perimeter (7) 54ft) around wetland perimeter <82ft) around wetland perimete	
	2b. Intensity of surrounding land use (select one or double check VERY LOW. 2nd growth or older forest, prairie, say LOW. Old field (>10 years), shrubland, young seco MODERATELY HIGH. Residential, fenced pasture HIGH. Urban, industrial, open pasture, row croppin	vannah, wildlife area, etc. (7) and growth forest. (5) ; park, conservation tillage, nev	v fallow field. (3)
- 20 - 16.ぞ	Metric 3. Hydrology. (max 30 pts)	3d. Duration inundation/s	aturation.
Subtotal Points	3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface water (3)	Regularly inun Seasonally inu	anently inundated/saturated (4) dated/saturated (3)
	Perennial surface water (lake or stream) (5) 3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1)	3e. Modifications to nature (select one or double None or none Recovered (7) Recovering (3) X Recent or no	o check & average) apparent (12)
	3c. Maximum water depth. Select only 1. X >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) <0.4m (<15.7in) (1)	Check all disturba	nces observed point source (nonstormwater) filling/grading road bed/RR track dredging

23	2.5	3	l

Metric 4. Habitat Alteration and Development. (max 20 pts.)

Subtotal Points 4a. Substrate disturbance. Score one or double check and average.

None or none apparent (4)
Recovered (3)
Recovering (2)
X Recent or no recovery (1)

4c. Habitat alteration. Score one or double check and average.

None or none apparent (9)

Recovered (6)

Recovering (3)

X Recent or no recovery (1)

other-list

4b. Habitat development. Select one.

Excellent (7)
Very good (6)
Good (5)
Moderately good (4)
Fair (3)
Poor to fair (2)
X
Poor (1)

stormwater input

☐ grazing ☐ herbaceous/aquatic bed removal ☐ clearcutting ☐ selective cutting ☐ dredging ☐ forming

 ☐ woody debris removal
 ☐ farming

 ☐ toxic pollutants
 ☐ nutrient emrichment

Site: Calvert C	liffs Nuclear Power Plant	1	Date:	February 21, 2008
Wétland:	WA-16C		Rater:	H. Fogell, A. Davis
23 subtotal firs	t page			
		_		
23 0	Metric 5. Special Wetlands. (max 10 pts	-}		
Subtotal Points	Check all that apply and score as indicated Bog (10 pts)			
1 4 64 - 4	Fen (10 pts)			
	Old Growth Forest (10 pts)			
	Mature forested wetland (5 pts)			
	Lake Erie coastal/tributary wetland-unres			
	Lake Erie coastal/tributary wetland-restri		(5 pts)	
	Lake Plain Sand Prairies (Oak Openings Relict Wet Prairies (10 pts)	(10 pts)		
	Known occurrence state/federal threater	ed or endanger	ed species (10)	
	Significant migatory songbird/waterfowl	_		
	Category 1 Wetland. See Question 1 of	Qualitative Rati	ng. (-10 pts)	
	Matric C. Diant Communities interespond	.!!		Lan 1
30 7 Subtotal Points	Metric 6. Plant Communities, interspers	sion, microt	opograpny. (max zu pi	.s.,
Subtotal Points	Score all present using 0 to 3 scale	Vegetatio	n Community Cover S	cale
	0 Aquatic bed	0		a (0.2471 acres) contiguous area
	1 Emergent		Present and either comprise	
	1 Shrub	1	vegetation and is of mode significant part but is of lo	erate quality, or comprises a
5(0):	0 Forest 0 Mudflats			
8 - 8 4	1 Open water	2	1	s significant part of wetland's erate quality or comprises a small
	0 Other (list)		part and is of high quality	
Pro-		3	1	ficant part, or more, of wetland's
	6b. Horizontal (plan view) interspersion		vegetation and is of high	quanty
	Select only one High (5)	Narrative	Description of Vegeta	tion Quality
e et	Moderately high (4)		Low spp diversity and/or pre	
w	Moderate (3)	low	disturbance tolerant nativ	e species
	X Moderately low (2)		Native spp are dominant cor	nponent of the vegetation,
	Low (1)	moderate	1	or disturbance tolerant native spp species diversity moderate to
	None (0)	Injuderate		erally w/o presence of rare
	6c. Coverage of invasive plants.		threatened or endangere	d spp
	Refer to Table 1 ORAM long form for list.		A predominance of native sp	pecies, with nonnative spp
	•	high		nt native spp absent or virtually
	Add or deduct points for coverage Extensive >75 % cover (-5)			ersity and often, but not always, eatened, or endangered spp
	X Moderate 25-75% cover (-3)	<u> </u>	Lattle Automot	
	Sparse 5-25% cover (-1)	Mudflat a	nd Open Water Class (Quality
	Nearly Absent <5% cover (0)	0	Absent <0.1 ha (0.2471 acre	
	Absent (1)	1	Low 0.1 ha to <1 ha (0.2471	
	6d. Microtopography	3	Moderate 1 ha to <4 ha (2.4) High 4 ha (9.88 acres) or mo	· · · · · · · · · · · · · · · · · · ·
	Score all present using 0 to 3 scale		Trigit 4 na (0.00 acros) or me	
11	2 Vegetated hummocks/tussocks	Microtopo	graphy Cover Scale	
	2 Coarse woody debris >15 cm (6")	0	Absent .	
A.	0 Standing dead > 25 cm (10") dbh	1	Present very small amounts	or if more common
	1 Amphibian breeding pools		of marginal quality	
•		2	Present in moderate amount quality or in small amoun	- · · · · · · · · · · · · · · · · · · ·
			Present in moderate or grea	
and the second		. 3	and of highest quality	

		Background Informa	ation Form	
	H. Fogell,		Date:	February 22, 2008
Affiliation:	MACTEC	Engineering & Consulting		
User Address:	3301 Atlan	tic Ave, Raleigh, NC.		
Phone:	919-876-04	416		
e-mail address	akdavis@ma	ctec.com		
Wetlands Name	WA-16C			
Location of Wetla including address available		See ORAM Figure in CCNPI Application	P Wetlands Master Pla	n/USACE IP
			Sources of information used (check all that apply)	
Lat/Lon or UTM	38.42982/-	76.44318	Site Visit	
USGS Quad	Cove Point, I	MD	USGS Topo	Z
Hydrologic Unit Co	de	20600060706	NWI Map	☑
Wetland Size (acre	es)	0.5	I OWI Map	
How was size esti	imated?		Aerial Photo	<
			Soil Survey	7
	\Alettanda Da	lineation/GIS	ODNR - DNAP	
	vvetands De	lineation/GIS	Delineation	
			Report/Map	V
Photograph				

Provisional Wetland Category:

1 or 2 gray zone

30

final score:

Name:	H. Fogell, A. Davis	Date:	February 22, 2008
Wetlands Name	WA-16C		
1: Critical Habit	at	✓NO	YES
2: Threatened o	r Endangered Species	☑ NO	YES
3: Documented	High Quality Wetland	✓ NO	YES
4: Significant B	reeding or Concentration Area (waterfowl)	☑NO	YES
5: Category 1 W	/etlands (hydrologically isolated)	✓NO	☐YES
6: Bogs		☑ NO	YES
7: Fens		☑NO	YES
8a: "Old Growth	ı Forest"	✓ NO	YES
8b: Mature Fore	ested Wetlands	☑ NO	YES
9a: Lake Erie C	pastal and Tributary Wetlands	✓ NO	YES
9b: Hydrology r	esult of Erosion Control Measures (Lake Erie)	✓NO	YES
9c: Hydrology ι	ınrestricted	☑ NO	YES
9d: Native Spec	ies Predominate	☑ NO	YES
9e: Non-native	Species Predominate	□NO	✓ YES
10: Oak Openin	gs	☑ NO	YES
11: Relict Wet F	rairies	☑NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100
	•

30 1 or 2 gray zone

ORAM v. 5.0 Field Form Quantitative Rating

liffs Nuclear Power Plant	L	Date:	February 22, 2008
WA-17	F	Rater:	H. Fogell, A. Davis
Select one size class and assign score >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) 10 to <25 acres (4 to <10.1ha) 3 to <10 acres (1.2 to <4ha) (3 X 0.3 to <3 acres (0.12 to <1.2ha)	na) (5 pts) (4 pts) pts) - a) (2pts)		
2a. Calculate average buffer width (select or X WIDE. Buffers average 50m (** MEDIUM. Buffers average 25r NARROW. Buffers average 10 VERY NARROW. Buffers average 11 VERY NARROW. Buffers average 12b. Intensity of surrounding land use (select X VERY LOW. 2nd growth or old LOW. Old field (>10 years), she MODERATELY HIGH. Reside	ne, do not double check) 164ft) or more around wetland pim to <50m (82 to <164ft) around 10m to <25m (32ft to <82ft) around 12m to <25m (32ft) around wetlar 12m to <25m (432ft) around wet	erimeter (7) wetland perimeter (4) nd wetland perimeter (6) nd perimeter (0) L dlife area, etc. (7) forest. (5) ervation tillage, new forest.	(1) .
3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface w X Perennial surface water (lake of the surface) 3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and othe Part of wetland/upland (e.g. for	water (3) or stream) (5) 3e. M (3) or human use (1) rest), complex (1) dor (1) Ch di dii	Select one or double of X Semi- to perman Regularly inunda Seasonally inunda Seasonally satur Select one or double of None or none as X Recovered (7) Recovering (3) Recent or no recent of the Kelect Select Se	theck & average) ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1) hydrologic regime. theck & average) oparent (12) covery (1)
•	Development. (max 20 pouble check and average. 4c. h	Abitat alteration. Scor None or none ap X Recovered (6) Recovering (3) Recent or no recess observed shrub/signature	ce one or double check and average. Exparent (9) Overy (1) Sapling removal eous/aquatic bed removal entation ng
	Metric 1. Wetland Area (size). (m Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2 10 to <25 acres (4 to <10.1ha) 3 to <10 acres (0.22 to <4ha) (3 X	Metric 1. Wetland Area (size). (max 6 pts) Select one size class and assign score. Sol acres (20 2na) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <14ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2 pts) 0.1 to <0.3 acres (0.12 to <1.2ha) (1 pt) <0.1 acres (0.04ha) (0 pts) Wetric 2. Upland buffers and surrounding land use. (max 2a. Calculate average buffer width (select one, do not double check) X WIDE. Buffers average 50m (184ft) or more around wetland pmedium. NarROW. Buffers average 25m to <50m (82 to <164ft) around NarROW. Buffers average 10m to <25m (32 fto <42ft) around very Very NarROW. Buffers average <10m (<32ft) around wetland NarROW. Buffers average <10m (<32ft) around wetland pmedium. Suffers average 10m to <55m (32 fto <42ft) around very NarROW. Buffers average <10m (<32ft) around wetland pmedium. Suffers average <10m (<32ft) around wetland pmedium. Suffers average 10m (<32ft) around wetland pmedium. Suffers average <10m (<32f	Metric 1. Wetland Area (size). (max 6 pts) Select one size class and assign score. So acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (0.2 to <12.ba) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (7 pts) -0.1 acres (0.04ha) (0 pts) -0.2 acres (0.04ha)

51 subtotal this page

Site: Calvert	Cliffs Nuclear Power Plant		Date:	February 21, 2008
Wetland:	WA-17		Rater:	H. Fogell, A. Davis
				-3-4
51 subtotal fir	rst page		•	
51 🔭 0	Metric 5. Special Wetlands. (max 10 pts	i.)		
Subtotal Points	Check all that apply and score as indicated			
	Bog (10 pts)			. 1
* *	Fen (10 pts)			
	Old Growth Forest (10 pts)			
• •	Mature forested wetland (5 pts)		(40)	
	Lake Erie coastal/tributary wetland-unre			
	Lake Erie coastal/tributary wetland-restr		(5 pts)	
	Relict Wet Prairies (10 pts)	s) (10 pts)		
•	Known occurrence state/federal threater	ned or endanger	red species (10)	
	Significant migatory songbird/waterfowl	_		
	Category 1 Wetland. See Question 1 of	_		
62 🎁 11 🧣	Metric 6. Plant Communities, interspers	sion, microt	opography. (max 20 p	ts.¦
Subtotal Points	6a. Wetland Vegetation Communities			
•	Score all present using 0 to 3 scale	Vegetatio	n Community Cover S	cale
,	0 Aquatic bed	0	Absent or comprises <0.1 ha	a (0.2471 acres) contiguous area
	0 Emergent	1 .	Present and either comprise	
	2 Shrub	1	vegetation and is of mode significant part but is of lo	erate quality, or comprises a
	2 Forest			
	0 Mudflats 0 Open water	2	'	s significant part of wetland's erate quality or comprises a small
h - 4	0 Other (list)	-	part and is of high quality	
• ,			Present and comprises sign	ificant part, or more, of wetland's
per, .	6b. Horizontal (plan view) interspersion	3	vegetation and is of high	·
1111	Select only one		•	
161	. High (5)	Narrative	Description of Vegeta	tion Quality
	Moderately high (4)	low	Low spp diversity and/or pre	
	X Moderate (3)		disturbance tolerant nativ	e species
	Moderately low (2)		Native spp are dominant cor	· -
	Low (1)	moderate	-	or disturbance tolerant native spp species diversity moderate to
	None (0)	moderate		erally w/o presence of rare
	6c. Coverage of invasive plants.		threatened or endangere	
	Refer to Table 1 ORAM long form for list.		A predominance of native sp	pecies with nonnative spn
	,	hiash		nt native spp absent or virtually
	Add or deduct points for coverage	high		ersity and often, but not always,
	Extensive >75 % cover (-5)		the presence of rare, three	eatened, or endangered spp
	Moderate 25-75% cover (-3)			
. ,	X Sparse 5-25% cover (-1)	Mudflat a	nd Open Water Class	
•	Nearly Absent <5% cover (0)	0	Absent <0.1 ha (0.2471 acre	
	Absent (1)	1	Low 0.1 ha to <1 ha (0.247	
	6d Microtonoments	3	Moderate 1 ha to <4 ha (2.4	
	6d. Microtopography Score all present using 0 to 3 scale	L	High 4 ha (9.88 acres) or mo	ore
	0 Vegetated hummocks/tussocks	Microtopo	graphy Cover Scale	
	1 Coarse woody debris >15 cm (6")	0	Absent	
	1 Standing dead > 25 cm (10") dbh		Present very small amounts	or if more common
	3 Amphibian breeding pools	1	of marginal quality	C. A. More Common
		2	Present in moderate amoun	ts, but not of highest
			quality or in small amoun	
. 1		3	Present in moderate or grea	ter amounts

Background Information Form

		ckground imorina			
Name:	H. Fogell, A. Davis			Date:	February 22, 2008
Affiliation:	MACTEC Enginee	ring & Consulting			
User Address:	3301 Atlantic Ave,	Raleigh, NC.			200 mg
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com				
Wetlands Name	WA-17				
Location of Wetle including address available	SAA ()	RAM Figure in CCNPP	Wetlands N	/laster Plar	/USACE IP
			Sources of in used (check all the		
Lat/Lon or UTM	38.42677/-76.4549	99	Site Visit		7
USGS Quad	Cove Point, MD		USGS Top	0	<u> </u>
Hydrologic Unit C	ode	20600060706	NWI Map		 ✓
Wetland Size (acr	es)	0.3	OWI Map		
How was size es	timated?		Aerial Phot	0	V
			Soil Survey		V
	- C. P. C. L		ODNR - DI	IAP	
	Wetlands Delineation/	GIS	Delineation Report/Mar		7
Photograph					
final score:	62	Provisional Wetland C	ategory:	Category 2 o	r3

Name:	H. Fogell, A. Davis	Date:	February 22, 2008
Wetlands Na	ame WA-17		
1: Critical Ha	abitat	✓NO	YES
2: Threatene	ed or Endangered Species	NO	YES
3: Documen	ted High Quality Wetland	√ NO	YES
4: Significar	nt Breeding or Concentration Area (waterfowl)	☑ NO	YES
5: Category	1 Wetlands (hydrologically isolated)	☑ NO	YES
6: Bogs	,	☑ NO	YES
7: Fens		✓NO	YES
8a: "Old Gro	owth Forest"	☑ NO	YES
8b: Mature F	orested Wetlands	IJNO	YES
9a: Lake Eri	e Coastal and Tributary Wetlands	√ NO	YES
9b: Hydrolog	gy result of Erosion Control Measures (Lake Erie)	IJ NO	YES
9c: Hydrolog	gy unrestricted	✓NO	YES
9d: Native S	pecies Predominate	□no	✓ YES
9e: Non-nati	ve Species Predominate	☑ NO	YES
10: Oak Ope	nings	NO	YES
11: Relict W	et Prairies	[₹]NO:	□ves

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

62 Category 2 or 3

ORAM v. 5.0 Field Form Quantitative Rating

Site: Calvert C	liffs Nuclear Power Plant	,	Date:	February 21, 2008
Wetlands:	WA-2		Rater:	H. Fogell, A. Davis
1 Points	Metric 1. Wetland Area (size). (ma Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) 10 to <25 acres (4 to <10.1ha) (3 to <10 acres (1.2 to <4ha) (3 pta) 0.3 to <3 acres (0.12 to <1.2ha) X 0.1 to <0.3 acres (0.04 to <0.12ha) <0.1 acres (0.04ha) (0 pts)	a) (5 pts) 4 pts) ots)) (2pts)		,
15 (14.)	Metric 2. Upland buffers and surre 2a. Calculate average buffer width (select one X WIDE. Buffers average 50m (16 MEDIUM. Buffers average 25m NARROW. Buffers average 10r VERY NARROW. Buffers average 10r VERY LOW. Buffers average 10r X VERY LOW. 2nd growth or olde LOW. Old field (>10 years), shr MODERATELY HIGH. Residen HIGH. Urban, industrial, open p	e, do not double check) 64ft) or more around wetland 1 to <50m (82 to <164ft) arou 1 to <25m (32ft to <82ft) arou 1 age <10m (<32ft) around wet 1 age <10m (<32ft) around wet 1 age or double check & averau 1 age around, young second growt 1 age around, young second growt 1 age around growt 1 age ar	perimeter (7) nd wetland perimeter (4) bund wetland perimeter (1) land perimeter (0) ge) vildlife area, etc. (7) h forest. (5) inservation tillage, new fa	
36 21	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface w Perennial surface water (lake or 3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other X Part of wetland/upland (e.g. fore X Part of riparian or upland corrido	ater (3) stream) (5) 3e. human use (1) est), complex (1) or (1)	Regularly inundat Seasonally inundat Seasonally satura Modifications to natural is (select one or double ct None or none ap X Recovered (7) Recovering (3) Recent or no rec Check all disturbance	neck & average) antly inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1) thydrologic regime. heck & average) parent (12) overy (1)
49 313	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1) Metric 4. Habitat Alteration and D		dike	filling/grading road bed/RR track dredging other- list
Subtotal Points	4a. Substrate disturbance. Score one or doc None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1)	-	Habitat alteration. Score None or none ap X Recovered (6) Recovering (3)	e one or double check and average. parent (9)
	4b. Habitat development. Select one. Excellent (7) Very good (6) Good (5) X Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	Check all disturban mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/s herbace sedime dredgin	apling removal eous/aquatic bed removal ntation

49 subtotal this page

6d. Microtopography

Score all present using 0 to 3 scale

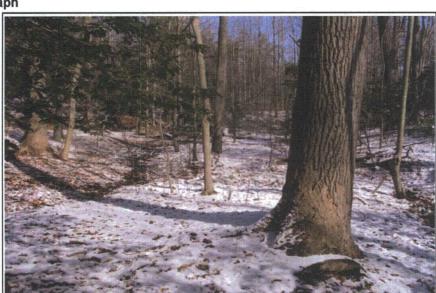
0	Vegetated hummocks/tussocks
	Coarse woody debris >15 cm (6"
0	Standing dead > 25 cm (10") dbh
2	Amphibian breeding pools

0	Absent <0.1 ha (0.2471 acres)
1	Low 0.1 ha to <1 ha (0.2471 acres to 2.47 acres)
2	Moderate 1 ha to <4 ha (2.47 acres 9.88 acres)
3	High 4 ha (9.88 acres) or more

Microtopography Cover Scale

L	0	Absent
	1 '	Present very small amounts or if more common of marginal quality
	2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
	3	Present in moderate or greater amounts and of highest quality

		Background inform	iation Form		
Name:	H. Fogell, A.	Davis		Date:	February 21, 2008
Affiliation:	MACTEC Er	ngineering & Consulting			
User Address:	r Address: 3301 Atlantic Ave, Raleigh, NC.				
Phone:	919-876-041	6			
e-mail address	akdavis@mact	ec.com			Control Control
Wetlands Name	WA-2				
Location of Wetle including address available	e if	See ORAM Figure in CCNI	PP Wetlands N	laster Pla	IN/USACE IP
			Sources of in used (check all tha		
Lat/Lon or UTM	38.42448/-7	6.43513	Site Visit		
USGS Quad	Cove Point, MI)	USGS Topo)	7
Hydrologic Unit C			03 NWI Map		7
Wetland Size (acr	es)		.3 OWI Map		
How was size es	timated?		Aerial Photo)	Į.
			Soil Survey		7
Wetlands Delineation/GIS			ODNR - DN	IAP	
			Delineation Report/Map		v
Photograph					
			A Secretarion 1 A MANAGE	40 mm and 1 mm	



Category 3 72 Provisional Wetland Category: final score:

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands Name	WA-2		
1: Critical Habita	at ·	☑ NO	YES
2: Threatened or	Endangered Species	☑ NO	YES
3: Documented	High Quality Wetland	⊿ NO	YES
4: Significant Br	eeding or Concentration Area (waterfowl)	NO	✓ YES
5: Category 1 W	etlands (hydrologically isolated)	☑ NO	YES
6: Bogs	, ,	☑ NO	YES
7: Fens		☑no	YES
8a: "Old Growth	Forest"	☑NO	YES
8b: Mature Fore	sted Wetlands	☑ NO	YES
9a: Lake Erie Co	astal and Tributary Wetlands	☑ NO	YES
9b: Hydrology re	esult of Erosion Control Measures (Lake Erie)	✓NO	YES
9c: Hydrology u	nrestricted	☑no	YES
9d: Native Speci	es Predominate	□NO	✓ YES
9e: Non-native S	pecies Predominate	Øи⊡	YES
10: Oak Opening	js	✓NO	YES
11: Relict Wet P	rairies	√ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

72 Category 3

ORAM v. 5.0 Field Form Quantitative Rating Site: Calvert Cliffs Nuclear Power Plant Date: February 21, 2008 Wetlands: WA-3 Rater: H. Fogell, A. Davis Metric 1. Wetland Area (size). (max 6 pts) Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts) Metric 2. Upland buffers and surrounding land use. (max 14 pts) 10% Points 2a. Calculate average buffer width (select one, do not double check) Subtotal WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) X MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use (select one or double check & average) X VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrubland, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) 21 Metric 3. Hydrology. (max 30 pts) 3d. Duration inundation/saturation. 3a. Sources of Water. Score all that apply. Points (select one or double check & average) Subtotal High pH groundwater (5) Semi- to permanently inundated/saturated (4) Other groundwater (3) Regularly inundated/saturated (3) X Precipitation (1) Seasonally inundated (2) X Seasonal/Intermittent surface water (3) Seasonally saturated in upper 30cm (12in) (1) Perennial surface water (lake or stream) (5) 3e. Modifications to natural hydrologic regime. 3b. Connectivity. Score all that apply. (select one or double check & average) 100 year floodplain (1) None or none apparent (12) Between stream/lake and other human use (1) Recovered (7) X Part of wetland/upland (e.g. forest), complex (1) Recovering (3) X Part of riparian or upland corridor (1) Recent or no recovery (1) Check all disturbances observed 3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) ditch point source (nonstormwater) X 0.4 to 0.7m (15.7 to 27.6in) (2) ___ dike ✓ filling/grading <0.4m (<15.7in) (1) tile wei road bed/RR track] weir ✓ dredging stormwater input other- list

44.5 12.5

Metric 4. Habitat Alteration and Development. (max 20 pts.)

clearcutting

selective cutting

Subtotal Points 4a. Substrate disturbance. Score one or double check and average.

None or none apparent (4) Recovered (3) х Recovering (2) Recent or no recovery (1)

Habitat alteration. Score one or double check and average None or none apparent (9) Recovered (6) Recovering (3)

4b. Habitat development. Select one Excellent (7)

> Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)

Check all disturbances observed mowing shrub/sapling removal grazing herbaceous/aquatic bed removal

Recent or no recovery (1)

sedimentation

✓ dredging

6d. Microtopography

Score all present using 0 to 3 scale

1	Vegetated hummocks/tussocks
	Coarse woody debris >15 cm (6")
	Standing dead > 25 cm (10") dbh
3	Amphibian breeding pools

Microtopography Cover Scale

High 4 ha (9.88 acres) or more

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

	Dac	kground informat	uon Form		
Name:	H. Fogell, A. Davis			Date:	February 21, 2008
Affiliation:	MACTEC Engineering & Consulting				
User Address:	3301 Atlantic Ave, Raleigh, NC.				
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com				
Wetlands Name	WA-3				
Location of Wetla including addres available	SAACIR				/USACE IP
			Sources of in used (check all tha		
Lat/Lon or UTM	38.42573/-76.43598		Site Visit		V
USGS Quad	Cove Point, MD		USGS Topo)	V
Hydrologic Unit Co	ode	20600040403	NWI Map		· •
Wetland Size (acre	es)		OWI Map		
How was size est	timated?		Aerial Photo)	J
			Soil Survey		7
		NO.	ODNR - DN	IAP	
	Wetlands Delineation/G	315	Delineation	:	
			Report/Map)	✓
Photograph					
final score:	50.5	Provisional Wetland C	ategory:	Category 2	

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands Name	WA-3		
1: Critical Habita	nt .	✓ NO	YES
2: Threatened or	Endangered Species	✓ NO	YES
3: Documented I	High Quality Wetland	☑ NO	YES
4: Significant Br	eeding or Concentration Area (waterfowl)	✓NO	YES
5: Category 1 W	etlands (hydrologically isolated)	✓NO	YES
6: Bogs		☑ NO	YES
7: Fens		√ NO	YES
8a: "Old Growth	Forest"	☑ NO	YES
8b: Mature Fores	sted Wetlands	✓NO	YES
9a: Lake Erie Co	astal and Tributary Wetlands	✓NO	YES
9b: Hydrology re	esult of Erosion Control Measures (Lake Erie)	☑ NO	YES
9c: Hydrology u	nrestricted	☑ NO	YES
9d: Native Speci	es Predominate	✓NO	YES
9e: Non-native S	pecies Predominate	□ио	☑ YES
10: Oak Opening	gs	✓NO	YES
11: Relict Wet Pr	rairies	☑ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

50.5 Category 2

Site: Calvert C	Cliffs Nuclear Power Plant	Date:	February 21, 2008
Wetlands:	WA-4 North	Rater:	H. Fogell, A. Davis
1 Points	Metric 1. Wetland Area (size). (max 6 pts) Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) X 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)		
14 点13点 Subtotal Points	Metric 2. Upland buffers and surrounding land u 2a. Calculate average buffer width (select one, do not double che X WIDE. Buffers average 50m (164ft) or more around MEDIUM. Buffers average 25m to <50m (82 to <16 NARROW. Buffers average 10m to <25m (32ft to < VERY NARROW. Buffers average <10m (<32ft) are 2b. Intensity of surrounding land use (select one or double check X VERY LOW. 2nd growth or older forest, prairie, sav LOW. Old field (>10 years), shrubland, young secon MODERATELY HIGH. Residential, fenced pasture,	Ack) I wetland perimeter (7) Aft) around wetland perimeter (82ft) around wetland perimeter (82ft) around wetland perimeter (0) & average) Arannah, wildlife area, etc. (7) and growth forest. (5) park, conservation tillage, ne	er (1)
29 25 Subtotal Points	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3b. Connectivity. Score all that apply. 100 year floodplain (1) X Between stream/lake and other human use (1) X Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1)	3d. Duration inundation/ (select one or doub. X Semi- to perm Regularly inun Seasonally in Seasonally se 3e. Modifications to nature (select one or doub.)	te check & average) nanently inundated/saturated (4) ndated/saturated (3) undated (2) sturated in upper 30cm (12in) (1) ural hydrologic regime. te check & average) te apparent (12))
111 4. 141.	3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)	Check all disturbation of the control of the contro	ances observed point source (nonstormwater) filling/grading road bed/RR track dredging other- list
37 8 8 8 8 8 Subtotal Points	Metric 4. Habitat Alteration and Development. (r 4a. Substrate disturbance. Score one or double check and avera None or none apparent (4) Recovered (3) X Recovering (2) Recent or no recovery (1)	age. 4c. <u>Habit</u> at alteration. S	core one or double check and average e apparent (9)

X Recovering (3) Recent or no recovery (1)

4b. Habitat development. Select one. Excellent (7)

Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)

Check all disturbances observed mowing shrub/sapling removal grazing herbaceous/aquatic bed removal

 \square clearcutting $\ \ \, \bigsqcup sedimentation$ ✓ dredging selective cutting farming woody debris removal toxic pollutants

nutrient emrichment

Site: Calvert Cliffs Nuclear Power Plant			Date:	February 21, 2008
Wetland:	WA-4 North		Rater:	H. Fogell, A. Davis
37 subtotal fil	st page			
07 10001				
37	Metric 5. Special Wetlands. (max 10 pts.)	,		
Subtotal Points	Check all that apply and score as indicated		•	
	Bog (10 pts) Fen (10 pts)			
	Old Growth Forest (10 pts)		•	
	Mature forested wetland (5 pts)			
	Lake Erie coastal/tributary wetland-unrest	ricted hydrolog	y (10 pts)	
	Lake Erie coastal/tributary wetland-restric			
**	Lake Plain Sand Prairies (Oak Openings)	(10 pts)	•	
	Relict Wet Prairies (10 pts)			
	Known occurrence state/federal threatene	d or endanger	ed species (10)	
	Significant migatory songbird/waterfowl ha	_		
.	Category 1 Wetland. See Question 1 of C	≀ualitative Rati	ng. (-10 pts)	
44 7	Metric 6. Plant Communities, interspersi	on, microte	pography, (max 20 nts	s.'
Subtotal Points	6a. Wetland Vegetation Communities	,	- E - 9 - m E - 13 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	1
·	Score all present using 0 to 3 scale	Vegetation	n Community Cover So	ale
	0 Aquatic bed	0		(0.2471 acres) contiguous area
	0 Emergent		Present and either comprises	small part of wetland's
	0 Shrub	1		rate quality, or comprises a
	0 Forest		significant part but is of lov	v quality
	0 Mudflats		Present and either comprises	significant part of wetland's
	0 Open water	2		rate quality or comprises a small
-	0 Other (list)		part and is of high quality	
	Ch. Harimantal (also visco) internancian	3	Present and comprises signification and is of high of	cant part, or more, of wetland's
	6b. Horizontal (plan view) interspersion Select only one	L	Togotation and to or riight	
	High (5)	Narrative	Description of Vegetat	ion Quality
· ·	Moderately high (4)		Low spp diversity and/or pred	
	Moderate (3)	low	disturbance tolerant native	
	Moderately low (2)		Native spp are dominant com	ponent of the vegetation.
	X Low (1)			disturbance tolerant native spp
	None (0)	moderate	, , ,	species diversity moderate to
			moderately high, but gene threatened or endangered	• •
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list.			
	Relei to Table i ORAW long lotti loi list.		A predominance of native spe	acies, with nonnative spp t native spp absent or virtually
	Add or deduct points for coverage	high		rsity and often, but not always,
	Extensive >75 % cover (-5)			atened, or endangered spp
	Moderate 25-75% cover (-3)			
21	Sparse 5-25% cover (-1)	Mudflat ar	nd Open Water Class C	luality
in serve Higgs of the	Nearly Absent <5% cover (0)	0	Absent < 0.1 ha (0.2471 acres	3)
	X Absent (1)	1	Low 0.1 ha to <1 ha (0.2471	acres to 2.47 acres)
		2	Moderate 1 ha to <4 ha (2.47	
	6d. Microtopography	3	High 4 ha (9.88 acres) or mor	re
	Score all present using 0 to 3 scale	Microtono	graphy Cover Scale	
	0 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6")	0	Absent	.
	2 Coarse woody debris >15 cm (6") 0 Standing dead > 25 cm (10") dbh			as if more common
	3 Amphibian breeding pools	1	Present very small amounts of marginal quality	or it more common
		2	Present in moderate amounts quality or in small amounts	·
		3	Present in moderate or greate and of highest quality	er amounts

final score:

44

		Background Informa	ition Forn	n	
Name:	H. Fogell,			Date:	February 21, 2008
Affiliation:	MACTEC	Engineering & Consulting			
User Address:	3301 Atlan	itic Ave, Raleigh, NC.			
Phone:	919-876-0	416			
e-mail address	akdavis@ma	actec.com			
Wetlands Name	WA-4 Nort	h			
Location of Wetla including addres available		See ORAM Figure in CCNPF Application			n/USACE IP
			Sources of i used (check all th		
Lat/Lon or UTM	38.42671/-	76.43335	Site Visit		7
USGS Quad	Cove Point, I		USGS Top	00	V
Hydrologic Unit Co		20600040403	NWI Map		 ☑
Wetland Size (acr		0.16	OWI Map		
How was size es	timated?		Aerial Phot		7
			Soil Surve	у	V
	Mottanda Da	lineation/GIS	ODNR - DI	NAP	
	v vedarios De	an lead of y GIS	Delineation Report/Map		v
Photograph					

Provisional Wetland Category:

modified 2

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands N	ame WA-4 North		
1: Critical Habitat		✓ NO	YES
2: Threaten	ed or Endangered Species	✓NO	YES
3: Documented High Quality Wetland			YES
4: Significa	nt Breeding or Concentration Area (waterfowl)	☑ NO	YES
5: Category	1 Wetlands (hydrologically isolated)	√ NO	YES
6: Bogs		☑ NO	YES
7: Fens		☑ NO	YES
8a: "Old Gre	owth Forest"	☑ NO	YES
8b: Mature Forested Wetlands			YES
9a: Lake Eri	ie Coastal and Tributary Wetlands	☑ NO	YES
9b: Hydrolo	gy result of Erosion Control Measures (Lake Erie)	 ✓ NO	YES .
9c: Hydrolo	gy unrestricted	√NO	YES
9d: Native S	Species Predominate	□ NO	✓ YES
9e: Non-nat	ive Species Predominate	✓NO	YES
10: Oak Ope	enings	No	YES
11: Relict W	let Prairies	☑ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score			
1	0-29.9			
1 or 2 gray zone	30-34.9			
modified 2	35-44.9			
2	45-59.9			
2 or 3	60-64.9			
3	65-100			
i e				

44 modified 2

ORAM v. 5.0 Field Form Quantitative Rating

Site: Calvert Cliffs Nuclear Power Plant			Date:	February 21, 2008
Wetlands:	WA-4 South		Rater:	H. Fogell, A. Davis
2 2 Subtotal Points	Metric 1. Wetland Area (size). (masselect one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2h 10 to <25 acres (4 to <10.1ha) (3 to <10 acres (1.2 to <4ha) (3 to <10 acres (0.12 to <1.2ha) 0.1 to <0.3 acres (0.04 to <0.12 colon) <p><0.1 acres (0.04ha) (0 pts)</p>	a) (5 pts) (4 pts) pts)) (2pts)		
11 Points Subtotal Points	Metric 2. Upland buffers and surrounding land use (select on VERY LOW. 2nd growth or old X MODERATELY HIGH. Resider MODERATELY HIGH. Resider HIGH. Urban, industrial, open p.	ne, do not double check) 64ft) or more around wetland in to <50m (82 to <164ft) around in to <25m (32ft to <82ft) around age <10m (<32ft) around wetl in to constant of the co	perimeter (7) and wetland perimeter (4) und wetland perimeter (*) and perimeter (0) and perimeter (0) are) riddlife area, etc. (7) an forest. (5) anservation tillage, new fa	
29 A18 Points	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface w X Perennial surface water (lake of 10) 3b. Connectivity. Score all that apply. 100 year floodplain (1) X Between stream/lake and other Part of wetland/upland (e.g. fore Part of riparian or upland corridors.	vater (3) r stream) (5) 3e. human use (1) est), complex (1) or (1)	Regularly inundated Seasonally inundated	heck & average) ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1) hydrologic regime. heck & average) parent (12)
	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)		ditch dike tile weir	point source (nonstormwater) filling/grading road bed/RR track dredging other- list
39 10 1	Metric 4. Habitat Alteration and D	Development (max 20	pts.)	
Subtotal Points	4a. Substrate disturbance. Score one or do: None or none apparent (4) X Recovered (3) X Recovering (2) Recent or no recovery (1)	, and the second	Habitat alteration. Score None or none ap Recovered (6) Recovering (3)	e one or double check and average. parent (9)
	4b. Habitat development. Select one. Excellent (7) Very good (6) Good (5) Moderately good (4) X Fair (3) Poor to fair (2) Poor (1)	Check all disturbance mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	Recent or no reco	apling removal cous/aquatic bed removal ntation

39 subtotal this page

Site: Calvert	Cliffs Nuclear Power Plant		Date:	February 21, 2008
Wetland:	WA-4 South		Rater:	H. Fogell, A. Davis
39 subtotal fi	rst page			
390	Metric 5. Special Wetlands. (max 10 pts.)		
Subtotal Points	Check all that apply and score as indicated			
	Bog (10 pts)	4		
*	Fen (10 pts)			
	Old Growth Forest (10 pts)			
	Mature forested wetland (5 pts) Lake Erie coastal/tributary wetland-unrest	tricted bydrolog	nv (10 nts)	•
•	Lake Erie coastal/tributary wetland-restric			
	Lake Plain Sand Prairies (Oak Openings)	(10 pts)	•	
•	Relict Wet Prairies (10 pts)			
	Known occurrence state/federal threatene	_		
	Significant migatory songbird/waterfowl h	=	, , ,	
	Category 1 Wetland. See Question 1 of 0	Juanialive Kati	ng. (-10 pts)	
52 313	Metric 6. Plant Communities, interspers	ion, microt	opography. (max 20 pt	s.;
Subtotal Points	6a. Wetland Vegetation Communities	•		
	Score all present using 0 to 3 scale	Vegetatio	n Community Cover So	
	0 Aquatic bed	0		(0.2471 acres) contiguous area
	0 Emergent	1 1	Present and either comprises	small part of wetland's rate quality, or comprises a
	1 Shrub 2 Forest	'	significant part but is of lov	
	0 Mudflats		Present and either comprises	significant part of wetland's
	0 Open water	2	l ·	rate quality or comprises a small
	0 Other (list)		part and is of high quality	
***		3	Present and comprises signification and is of high of	icant part, or more, of wetland's
	6b. Horizontal (plan view) interspersion Select only one		vegetation and is of high o	quanty
	High (5)	Narrative	Description of Vegetat	ion Quality
	Moderately high (4)	low	Low spp diversity and/or pred	
	Moderate (3)	IOW	disturbance tolerant native	e species
•	X Moderately low (2)	· ·	Native spp are dominant com	
	Low (1)	moderate	1 -	disturbance tolerant native spp species diversity moderate to
	None (0)	moderate	moderately high, but gene	•
	6c. Coverage of invasive plants.		threatened or endangered	spp
	Refer to Table 1 ORAM long form for list.		A predominance of native spe	ecies, with nonnative spp
÷		high		nt native spp absent or virtually
	Add or deduct points for coverage			rsity and often, but not always, atened, or endangered spp
	Extensive >75 % cover (-5) Moderate 25-75% cover (-3)			·
Salawa e	Sparse 5-25% cover (-1)	Mudflat a	nd Open Water Class C	Quality
•	Nearly Absent <5% cover (0)	0	Absent < 0.1 ha (0.2471 acres	5)
•	X Absent (1)	1	Low 0.1 ha to <1 ha (0.2471	
		2	Moderate 1 ha to <4 ha (2.47	
	6d. Microtopography Score all present using 0 to 3 scale	3	High 4 ha (9.88 acres) or mor	re `
	2 Vegetated hummocks/tussocks	Microtopo	graphy Cover Scale	
	2 Coarse woody debris >15 cm (6")	0	Absent	
	0 Standing dead > 25 cm (10") dbh 3 Amphibian breeding pools	1	Present very small amounts of marginal quality	or if more common
		2 ·	Present in moderate amounts quality or in small amounts	=
. •		3	Present in moderate or greate and of highest quality	er amounts
				

, 1 m		ckground Informat				
Name:	H. Fogell, A. Davis			Date:	February 21, 2008	
Affiliation:	MACTEC Engineering & Consulting					
User Address:	3301 Atlantic Ave,	Raleigh, NC.				
Phone:	919-876-0416					
e-mail address	akdavis@mactec.com	<u> </u>				
Wetlands Name	WA-4 South					
Location of Wetla including addres available	200	RAM Figure in CCNPP	-		/USACE IP	
			Sources of in used (check all tha			
Lat/Lon or UTM	38.42603/-76.4336	67	Site Visit	Service Commence of the Commen	7	
USGS Quad	Cove Point, MD		USGS Topo)	7	
Hydrologic Unit Co	ode	20600040403	NWI Map		7	
Wetland Size (acr	es)	0.6	OWI Map			
How was size es	timated?		Aerial Photo)	V	
			Soil Survey		v	
	ODNR - DN	AP				
Wetlands Delineation/GIS			Delineation		was a	
			Report/Map		•	
Photograph						
final score:	52	Provisional Wetland C	ategory:	Category 2		

Narrative Rating Questions

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands Name	e WA-4 South		
		·	.*
1: Critical Habi	tat	✓NO	YES
2: Threatened	or Endangered Species	√ NO	YES
3: Documented	l High Quality Wetland	☑ NO	YES
4: Significant E	Breeding or Concentration Area (waterfowl)	✓NO	YES
5: Category 1 V	Vetlands (hydrologically isolated)	Ои⊡	YES
6: Bogs		☑ NO	YES
7: Fens		☑NO	YES
8a: "Old Growt	h Forest"	☑ NO	YES
8b: Mature For	ested Wetlands	☑ NO	YES
9a: Lake Erie C	oastal and Tributary Wetlands	☑ NO	YES
9b: Hydrology	result of Erosion Control Measures (Lake Erie)	☑NO	YES
9c: Hydrology	unrestricted	IJNO	YES
9d: Native Spe	cies Predominate	□NO	☑ YES
9e: Non-native	Species Predominate	✓NO	YES
10: Oak Openir	ngs	☑ NO	☐ YES.
11: Relict Wet	Prairies	☑ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

52 Category 2

Table based on FEB 2001 OEPA Standards

ORAM v. 5.0 Field Form Quantitative Rating Date: February 21, 2008 Site: Calvert Cliffs Nuclear Power Plant Rater: H. Fogell, A. Davis Wetlands: WA-5 Metric 1. Wetland Area (size). (max 6 pts) 2 Select one size class and assign score. Subtotal >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts) Metric 2. Upland buffers and surrounding land use. (max 14 pts) 16 14 2a. Calculate average buffer width (select one, do not double check) Subtotal X WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use (select one or double check & average) X VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrubland, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) 36 20 Metric 3. Hydrology. (max 30 pts) 3d. Duration inundation/saturation. 3a. Sources of Water. Score all that apply. (select one or double check & average) Subtotal Points Semi- to permanently inundated/saturated (4) High pH groundwater (5) Other groundwater (3) Regularly inundated/saturated (3) Seasonally inundated (2) X Precipitation (1) X Seasonal/Intermittent surface water (3) Seasonally saturated in upper 30cm (12in) (1) Perennial surface water (lake or stream) (5) 3e. Modifications to natural hydrologic regime. (select one or double check & average) 3b. Connectivity. Score all that apply. 100 year floodplain (1) None or none apparent (12) Between stream/lake and other human use (1) Recovered (7) Recovering (3) Part of wetland/upland (e.g. forest), complex (1) X Part of riparian or upland corridor (1) Recent or no recovery (1) Check all disturbances observed 3c. Maximum water depth. Select only 1. >0.7 (27.6in) (3) ditch point source (nonstormwater) 0.4 to 0.7m (15.7 to 27.6in) (2) dike filling/grading <0.4m (<15.7in) (1) tile road bed/RR track weir dredging stormwater input other- list Metric 4. Habitat Alteration and Development. (max 20 pts.) 49 ²13 4a. Substrate disturbance. Score one or double check and average. Subtotal Points None or none apparent (4)

Х	Recovered (3)	4c.	Habitat alteration. Score one or double check and average
	Recovering (2)		None or none apparent (9)
	Recent or no recovery (1)		X Recovered (6)
			Recovering (3)
4b. Habitat d	levelopment. Select one.		Recent or no recovery (1)
	Excellent (7)		
	Very good (6)	Check all disturban	ces observed
	Good (5)	mowing	shrub/sapling removal
X	Moderately good (4)	grazing	herbaceous/aquatic bed removal
	Fair (3)	clearcutting	sedimentation
	Poor to fair (2)	Selective cutting	C) dredoing

woody debris removal toxic pollutants

farming

nutrient emrichment

Poor (1)

*				
ORAM v. 5.0 Field Form Qua			Deter	Fabruary 24, 2000
	liffs Nuclear Power Plant		Date:	February 21, 2008
Wetland:	WA-5		Rater:	H. Fogell, A. Davis
49 subtotal first	page			
			•	
49 0	Metric 5. Special Wetlands. (max 10 pts	s.)	•	
Subtotal Points	Check all that apply and score as indicated			
•	Bog (10 pts)			
	Fen (10 pts)			
	Old Growth Forest (10 pts)			
	Mature forested wetland (5 pts)			
4.5.	Lake Erie coastal/tributary wetland-unre	stricted hydrolog	gy (10 pts)	
•	Lake Erie coastal/tributary wetland-restr		(5 pts)	
	Lake Plain Sand Prairies (Oak Opening	s) (10 pts)		
•	Relict Wet Prairies (10 pts)			
	Known occurrence state/federal threate	•		
•	Significant migatory songbird/waterfowl			,
and the	Category 1 Wetland. See Question 1 or	Qualitative Rati	ng. (-10 pis)	• •
61 12	Metric 6. Plant Communities, intersper	sion, microt	opography. (max 20 pts.)	
Subtotal Points	6a. Wetland Vegetation Communities			•
•	Score all present using 0 to 3 scale	Vegetatio	n Community Cover Scale)
	0 Aquatic bed	0	Absent or comprises <0.1 ha (0.2	2471 acres) contiguous area
	0 Emergent		Present and either comprises sm	all part of wetland's
1. pt	2 Shrub	1	vegetation and is of moderate	•
47.7	1 Forest		significant part but is of low qu	Jality
e william in the contract of t	0 Mudflats		Present and either comprises sig	· ·
	0 Open water	2	vegetation and is of moderate	quality or comprises a small
	0 Other (list)		part and is of high quality	
	Sh. Havirantal (nlam view) internacion	3	Present and comprises significan vegetation and is of high quali	
	6b. Horizontal (plan view) interspersion Select only one	L	regeration and to enting it quan	
	High (5)	Narrative	Description of Vegetation	Quality
	Moderately high (4)		Low spp diversity and/or predomi	
	X Moderate (3)	low	disturbance tolerant native spe	
	Moderately low (2)		Native spp are dominant compon	eent of the vegetation
	Low (1)		although nonnative and/or dist	-
•	None (0)	moderate	can also be present, and spec	• •
			moderately high, but generally	/ w/o presence of rare
	6c. Coverage of invasive plants.		threatened or endangered spp)
	Refer to Table 1 ORAM long form for list.		A predominance of native species	s, with nonnative spp
		high	and/or disturbance tolerant na	The state of the s
	Add or deduct points for coverage	""	absent, and high spp diversity	
***	Extensive >75 % cover (-5)		the presence of rare, threaten	eu, or eriuangereu spp
C Library	Moderate 25-75% cover (-3)	Name of the A	nd Ones Wets Olses O	1:4
Establishment	Sparse 5-25% cover (-1)		nd Open Water Class Qua	iity
8 - 2.	Nearly Absent <5% cover (0)	0	Absent < 0.1 ha (0.2471 acres)	
	X Absent (1)	1	Low 0.1 ha to <1 ha (0.2471 acre	
	6d. Microtopography	3	Moderate 1 ha to <4 ha (2.47 acr High 4 ha (9.88 acres) or more	es a.oo acres)
	ou. wildiologiaphy	1 3	11 Hun 4 Ha (3.00 acres) UL HIOTE	

Score all present using 0 to 3 scale

2 Vegetated hummocks/tussocks

2 Amphibian breeding pools

1 Coarse woody debris >15 cm (6")

Standing dead > 25 cm (10") dbh

0

1

2

3

Microtopography Cover Scale

of marginal quality

and of highest quality

Absent

Present very small amounts or if more common

Present in moderate amounts, but not of highest

quality or in small amounts of highest quality
Present in moderate or greater amounts

Background Information Form

		ckground informa			
Name:	H. Fogell, A. Davis			Date:	February 21, 2008
Affiliation:	MACTEC Enginee	ring & Consulting			
User Address:	3301 Atlantic Ave,	Raleigh, NC.			and a second several second state of state of several second seco
Phone:	919-876-0416				Maria de la companya
e-mail address	akdavis@mactec.com			Anna Marina	
Wetlands Name	WA-5				
Location of Wetla including addres available	S00 ()	RAM Figure in CCNPP	Wetlands I	Master Plar	/USACE IP
			Sources of in used (check all the		
Lat/Lon or UTM	38.42157/-76.436	43	Site Visit		4
USGS Quad	Cove Point, MD		USGS Top	0	V
Hydrologic Unit Co	ode	20600060706	NWI Map		7
Wetland Size (acr		0.32	OWI Map		
How was size est	timated?		Aerial Phot		<u> </u>
			Soil Survey		V
	Wetlands Delineation	rais	ODNR - DI	NAP	
	Victarias Demicatoria	010	Delineation Report/Ma		v
Photograph	3 y				
final score:	61	Provisional Wetland C	ategory:	Category 2 o	r 3

Narrative Rating Questions

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands Na	me WA-5		
,			
1: Critical Ha	bitat	☑ NO	YES
2: Threatene	d or Endangered Species	☑ NO	YES
3: Document	ed High Quality Wetland	✓NO	YES
4: Significant	Breeding or Concentration Area (waterfowl)	☑no	YES
5: Category 1	Wetlands (hydrologically isolated)	✓NO	YES
6: Bogs		√ NO	☐YES ·
7: Fens		✓NO	☐YES .
8a: "Old Grov	wth Forest"	✓ NO	YES
8b: Mature Fo	orested Wetlands	✓NO	YES
9a: Lake Erie	Coastal and Tributary Wetlands	✓NO	YES
9b: Hydrolog	y result of Erosion Control Measures (Lake Erie)	✓NO	YES
9c: Hydrolog	y unrestricted	 ✓ NO	YES
9d: Native Sp	ecies Predominate	□no	✓YES
9e: Non-nativ	re Species Predominate	√ NO	YES
10: Oak Oper	nings	√ NO	YES
11: Relict We	t Prairies	. I NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

61 Category 2 or 3

Table based on FEB 2001 OEPA Standards

Site: Calvert Cl	iffs Nuclear Power Plant		Date:	February 21, 2008
Wetlands:	WA-6		Rater:	H. Fogell, A. Davis
0 0 3	Metric 1. Wetland Area (size). (m	ax 6 pts)		
ubtotal Points	Select one size class and assign score.	ш. о р.с.,		
	>50 acres (>20.2ha) (6 pts)		•	
	25 to <50 acres (10.1 to <20.2)			
	10 to <25 acres (4 to <10.1ha)			
	3 to <10 acres (1.2 to <4ha) (3 0.3 to <3 acres (0.12 to <1.2ha			•
	0.1 to <0.3 acres (0.04 to <0.12			
	X <0.1 acres (0.04ha) (0 pts)			
14 14	Metric 2. Upland buffers and sur	rounding land use.	. (max 14 pts)	
Subtotal Points	2a. Calculate average buffer width (select or	_		
	X WIDE. Buffers average 50m (*			
	MEDIUM. Buffers average 25r	n to <50m (82 to <164ft)	around wetland perimeter (4	4)
	NARROW. Buffers average 10 VERY NARROW. Buffers aver	,	,	(1)
•	VERT NARROW. Builets aver	lage - form (-5211) aroun	d wetland perimeter (b)	
	2b. Intensity of surrounding land use (select			
	X VERY LOW. 2nd growth or old LOW. Old field (>10 years), sh			
	MODERATELY HIGH. Reside			fallow field. (3)
	HIGH. Urban, industrial, open	pasture, row cropping, n	nining, construction. (1)	
34 20	Metric 3. Hydrology. (max 30 pts)	3d. Duration inundation/sa	turation.
Subtotal Points	3a. Sources of Water. Score all that apply.		(select one or double	check & average)
	High pH groundwater (5)		X Semi- to perma	nently inundated/saturated (4)
	. X Other groundwater (3)			ated/saturated (3)
	X Precipitation (1)	tan (2)	Seasonally inun	
	X Seasonal/Intermittent surface v Perennial surface water (lake of		Seasonally salu	urated in upper 30cm (12in) (1)
	· · · · · · · · · · · · · · · · · · ·	or stream) (o)	3e. Modifications to natura	al hydrologic regime.
	3b. Connectivity. Score all that apply.		(select one or double	check & average)
	100 year floodplain (1)	- 1 (4)	None or none a	apparent (12)
	Between stream/lake and othe Part of wetland/upland (e.g. for		X Recovered (7) Recovering (3)	•
	X Part of riparian or upland corrid		Recent or no re	ecovery (1)
•	3c. Maximum water depth. Select only 1.		Check all disturbar	nces observed
4.1.1	>0.7 (27.6in) (3)		l — —	point source (nonstormwater)
	0.4 to 0.7m (15.7 to 27.6in) (2)			filling/grading
	X <0.4m (<15.7in) (1)			road bed/RR track
			weir	dredging
		1	stormwater input	other- list
47	Metric 4. Habitat Alteration and	•	• •	
Subtotal Points	4a. Substrate disturbance. Score one or do	ouble check and average	9.	
	None or none apparent (4) X Recovered (3)		Ac Habitat alteration Sco	ore one or double check and avera
	Recovering (2)		None or none a	
	Recent or no recovery (1)		X Recovered (6)	apparonn (o)
			Recovering (3)	
	4b. Habitat development. Select one.		Recent or no re	covery (1)
	Excellent (7)	Observation attention	whomana sheers	
	Very good (6)	Cneck all distui	rbances observed	
	Very good (0)			
	Good (5)	mowing	shrub	/sapling removal
	Good (5) X Moderately good (4)	grazing	herba	ceous/aquatic bed removal
	Good (5) X Moderately good (4) Fair (3)	grazing clearcutting	herba	nceous/aquatic bed removal
	Good (5) X Moderately good (4)	grazing	herba	nceous/aquatic bed removal nentation ging

47 subtotal this page

Site: Calvert (Cliffs Nuclear Power Plant		Date:	February 21, 2008
Wetland:	WA-6		Rater:	H. Fogell, A. Davis
			,	
47 subtotal fir	st page			
·				
47 🔆 0, 🕸	Metric 5. Special Wetlands. (max 10 pts.	.)		
Subtotal Points	Check all that apply and score as indicated			·
•	Bog (10 pts)			
	Fen (10 pts)			
	Old Growth Forest (10 pts)	-		
	Mature forested wetland (5 pts) Lake Erie coastal/tributary wetland-unres	tricted hydrolog	nv (10 nts)	•
	Lake Erie coastal/tributary wetland-restric	-		
	Lake Plain Sand Prairies (Oak Openings		(C p. 0)	
	Relict Wet Prairies (10 pts)			
	Known occurrence state/federal threaten	ed or endanger	red species (10)	
1.	Significant migatory songbird/waterfowl h	-		
	Category 1 Wetland. See Question 1 of	Qualitative Rati	ng. (-10 pts)	
56 9 %	Metric 6. Plant Communities, interspers	ion microt	onography (may 20 pt	e '
Subtotal Points	6a. Wetland Vegetation Communities	ion, iniciot	opograpny. (max 20 pt	3. ,
oubtotal Tollito	Score all present using 0 to 3 scale	Vegetatio	n Community Cover So	cale
	0 Aquatic bed	0	Absent or comprises <0.1 ha	(0.2471 acres) contiguous area
	0 Emergent		Present and either comprises	s small part of wetland's
5	1 Shrub	1	_	rate quality, or comprises a
	1 Forest		significant part but is of lov	w quality
remaining the second of the se	0 Mudflats	2	Present and either comprises	- · · ·
pri e	0 Open water 0 Other (list)	2	part and is of high quality	rate quality or comprises a small
	o Journel (list)			icant part, or more, of wetland's
V I	6b. Horizontal (plan view) interspersion	3	vegetation and is of high o	
	Select only one	<u> </u>		
	High (5)	Narrative	Description of Vegetat	ion Quality
	Moderately high (4)	low	Low spp diversity and/or pred	
	Moderate (3)		disturbance tolerant native	e species
	Moderately low (2) X Low (1)		Native spp are dominant com	· -
	X Low (1) None (0)	moderate	1 *	r disturbance tolerant native spp species diversity moderate to
			moderately high, but gene	•
	6c. Coverage of invasive plants.		threatened or endangered	І spp
	Refer to Table 1 ORAM long form for list.		A predominance of native spe	ecies, with nonnative spp
	i	high		nt native spp absent or virtually
	Add or deduct points for coverage Extensive >75 % cover (-5)			rsity and often, but not always, atened, or endangered spp
	Moderate 25-75% cover (-3)	L	<u></u>	
1 12	Sparse 5-25% cover (-1)	Mudflat a	nd Open Water Class C	Quality
and the second	Nearly Absent <5% cover (0)	0	Absent <0.1 ha (0.2471 acres	
	X Absent (1)	. 1 '	Low 0.1 ha to <1 ha (0.2471	acres to 2.47 acres)
		2	Moderate 1 ha to <4 ha (2.47	acres 9.88 acres)
	6d. Microtopography	3	High 4 ha (9.88 acres) or mo	re
	Score all present using 0 to 3 scale 1 Vegetated hummocks/tussocks	Microtone	graphy Cover Scale	
	1 Vegetated hummocks/tussocks 2 Coarse woody debris >15 cm (6")	0	Absent	
	0 Standing dead > 25 cm (10") dbh			
	2 Amphibian breeding pools	1	Present very small amounts of marginal quality	or in more commun
•	•	2	Present in moderate amounts quality or in small amounts	<u> </u>
		. 3	Present in moderate or greate and of highest quality	er amounts

		ckground informat					
Name:	H. Fogell, A. Davis			Date:	February 21, 2008		
Affiliation:	MACTEC Enginee	ring & Consulting					
User Address:	3301 Atlantic Ave, Raleigh, NC.						
Phone:	919-876-0416			:			
e-mail address	akdavis@mactec.com						
Wetlands Name	WA-6						
Location of Wetla including address available	See OF	RAM Figure in CCNPP tion	Wetlands N	/laster Plan	/USACE IP		
			Sources of ir used (check all tha				
Lat/Lon or UTM	38.42040/-76.4381	1	Site Visit		v		
USGS Quad	Cove Point, MD		USGS Top	0	 ☑		
Hydrologic Unit Co	ode	20600060706	NWI Map		3		
Wetland Size (acre		0.08	OWI Map				
How was size est	imated?		Aerial Phot	0	7		
			Soil Survey		2		
	ODNR - DN		a				
Wetlands Delineation/GIS			Delineation				
			Report/Map		2		
Photograph							
	50						
final score:	56	Provisional Wetland C	ategory:	Category 2			

Narrative Rating Questions

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands Name	WA-6		
1: Critical Habita	at	☑ NO	□YES
2: Threatened o	r Endangered Species	☑ NO	YES
3: Documented	High Quality Wetland	☑ NO	YES
4: Significant Br	reeding or Concentration Area (waterfowl)	☑ NO	YES
5: Category 1 W	etlands (hydrologically isolated)	☑ NO	YES
6: Bogs		☑ NO	□YES
7: Fens		✓NO	YES
8a: "Old Growth	Forest"	☑ NO	YES
8b: Mature Fore	sted Wetlands	☑ NO	YES
9a: Lake Erie Co	pastal and Tributary Wetlands	☑ NO	YES
9b: Hydrology re	esult of Erosion Control Measures (Lake Erie)	☑ NO	YES
9c: Hydrology u	nrestricted	☑ NO	YES
9d: Native Spec	ies Predominate	□NO	✓ YES
9e: Non-native S	Species Predominate	☑ NO	YES
10: Oak Opening	gs	☑NO	YES
11: Relict Wet P	rairies	☑ NO	□YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	· 35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

56 Category 2

Table based on FEB 2001 OEPA Standards

ORAM v. 5.0 Field Form Qu		ID-1-	
Site: Calvert C	Cliffs Nuclear Power Plant	Date:	February 21, 2008
Wetlands:	. WA-7	Rater:	H. Fogell, A. Davis
2 2	Metric 1. Wetland Area (size). (max 6 pts)	•	
Subtotal Points	Select one size class and assign score.		
	>50 acres (>20.2ha) (6 pts)		
	25 to <50 acres (10.1 to <20.2ha) (5 pts)		
•	10 to <25 acres (4 to <10.1ha) (4 pts)		
	3 to <10 acres (1.2 to <4ha) (3 pts) X 0.3 to <3 acres (0.12 to <1.2ha) (2pts)		
•	0.1 to <0.3 acres (0.04 to <0.12ha) (2pts)	4	
	<0.1 acres (0.04ha) (0 pts)		
16 14.	Metric 2. Upland buffers and surrounding land u	se. (max 14 pts)	
Subtotal Points	2a. Calculate average buffer width (select one, do not double che		
	X WIDE. Buffers average 50m (164ft) or more around		
	MEDIUM. Buffers average 25m to <50m (82 to <16	4ft) around wetland perimeter (4))
	NARROW. Buffers average 10m to <25m (32ft to <		(1)
	VERY NARROW. Buffers average <10m (<32ft) are	ound wetland perimeter (0)	
	2b. Intensity of surrounding land use (select one or double check	& average)	
	X VERY LOW. 2nd growth or older forest, prairie, sav	annah, wildlife area, etc. (7)	
	LOW. Old field (>10 years), shrubland, young second		
	MODERATELY HIGH. Residential, fenced pasture,		fallow field. (3)
•	HIGH. Urban, industrial, open pasture, row cropping	g, mining, construction. (1)	
39 23.	Metric 3. Hydrology. (max 30 pts)	3d. Duration inundation/sa	turation.
Subtotal Points	3a. Sources of Water. Score all that apply.	(select one or double o	check & average)
• 1	High pH groundwater (5)		nently inundated/saturated (4)
	X Other groundwater (3)		ated/saturated (3)
	X Precipitation (1)	Seasonally inun	dated (2)
	Seasonal/Intermittent surface water (3)	Seasonally satu	rated in upper 30cm (12in) (1)
4 - ex 5 - 1	X Perennial surface water (lake or stream) (5)		
	Ob Comment is Comment that and the	3e. Modifications to natural	• = =
	3b. Connectivity. Score all that apply. 100 year floodplain (1)	(select one or double of None or none a	- '
	Between stream/lake and other human use (1)	X Recovered (7)	pparent (12)
	Part of wetland/upland (e.g. forest), complex (1)	Recovering (3)	
	X Part of riparian or upland corridor (1)	Recent or no re	covery (1)
	3c. Maximum water depth. Select only 1.	Check all disturban	ces observed
	>0.7 (27.6in) (3)	ditch	point source (nonstormwater)
·	X 0.4 to 0.7m (15.7 to 27.6in) (2)	dike	filling/grading
•	, <0.4m (<15.7in) (1)	tile	road bed/RR track
		weir	dredging
		stormwater input	other- list
58 19	Metric 4. Habitat Alteration and Development (r	nax 20 pts.)	
Subtotal Points	4a. Substrate disturbance. Score one or double check and avera	· ·	,
	X None or none apparent (4)		
*	Recovered (3)	4c. Habitat alteration. Sco.	re one or double check and average
	Recovering (2)	X None or none a	
	Recent or no recovery (1)	Recovered (6)	,
		Recovering (3)	
	4b. Habitat development. Select one.	Recent or no rec	covery (1)
•	Excellent (7)		

Check all disturbances observed

shrub/sapling removal

nutrient emrichment

sedimentation
dredging
farming

herbaceous/aquatic bed removal

mowing

grazing
clearcutting
selective cutting

woody debris removal toxic pollutants

58 subtotal this page

Very good (6) Good (5)

Poor to fair (2)

Fair (3)

Poor (1)

Moderately good (4)

	orm Quantitative Rating		Data	5 1 01 000	
	ert Cliffs Nuclear Power Plant		Date:	February 21, 2008	
Wetland:	WA-7		Rater:	H. Fogell, A. Davis	
58 subtot	tal first page				
	Metric 5. Special Wetlands. (max 10 pts	.)			
Subtotal Point	ts Check all that apply and score as indicated Bog (10 pts)				
	Fen (10 pts)				
	Old Growth Forest (10 pts)				
	X Mature forested wetland (5 pts)				
•	Lake Erie coastal/tributary wetland-unres	stricted hydrolog	gy (10 pts)		
	Lake Erie coastal/tributary wetland-restri	cted hydrology	(5 pts)		
	Lake Plain Sand Prairies (Oak Openings) (10 pts)			
	Relict Wet Prairies (10 pts)				
	Known occurrence state/federal threaten				
	Significant migatory songbird/waterfowl h	ŭ	• • •		
	Category 1 Wetland. See Question 1 of	Qualitative Rati	ng. (-10 pts)		
81 18	Metric 6. Plant Communities, interspers	ion, microt	opography. (max 20 pts	s.'	
Subtotal Poin	· ·		· · · · · · · · · · · · · · · · · · ·	,	
	Score all present using 0 to 3 scale	Vegetatio	n Community Cover So	ale	
	2 Aquatic bed	0	Absent or comprises <0.1 ha	(0.2471 acres) contiguous area	
	0 Emergent		Present and either comprises	small part of wetland's	
	0 Shrub	1	II =	rate quality, or comprises a	
	2 Forest ,		significant part but is of lov	v quality	
	0 Mudflats		Present and either comprises		
	Open water	2	part and is of high quality	rate quality or comprises a small	
e* - 4	0 Other (list)			cant part, or more, of wetland's	
	6b. Horizontal (plan view) interspersion	3	vegetation and is of high q		
	Select only one				
	High (5)	Narrative	Description of Vegetati	ion Quality	
•	Moderately high (4)	low	Low spp diversity and/or pred	ominance of nonnative or	
	X Moderate (3)	10₩	disturbance tolerant native	species	
	Moderately low (2)		Native spp are dominant com	ponent of the vegetation,	
	Low (1)		1	disturbance tolerant native spp	
	None (0)	moderate	can also be present, and s moderately high, but gene	species diversity moderate to	
			threatened or endangered		
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list.				
*	The state of the s		A predominance of native spe	cles, with nonnative spp t native spp absent or virtually	
	Add or deduct points for coverage	high		sity and often, but not always,	
	Extensive >75 % cover (-5)	1	the presence of rare, threa	itened, or endangered spp	
	Moderate 25-75% cover (-3)				
	Sparse 5-25% cover (-1)	Mudflat a	nd Open Water Class Q	uality	
Maria Company	Nearly Absent <5% cover (0)	0	Absent <0.1 ha (0.2471 acres	;)	
	X Absent (1)	1	Low 0.1 ha to <1 ha (0.2471		
		2	Moderate 1 ha to <4 ha (2.47		
	6d. Microtopography	3	High 4 ha (9.88 acres) or mor	e	

Score all present using 0 to 3 scale

2	Vegetated hummocks/tussocks
3	Coarse woody debris >15 cm (6")
2	Standing dead > 25 cm (10") dbh
3	Amphibian breeding pools

Microtopography Cover Scale

0	Absent	(*)
1	Present very small amounts or if more common of marginal quality	
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality	
3	Present in moderate or greater amounts and of highest quality	

Background Information Form

Affiliation: MACTEC Engineering & Consulting User Address: 3301 Atlantic Ave, Raleigh, NC. Phone: 919-876-0416 e-mail address Wetlands Name WA-7 Location of Wetlands including address if Application See ORAM Figure in CCNPP Wetlands Master Plan/USACE IP Application Sources of information used (check all that apply) Lat/Lon or UTM 38.42200/-76.43982 Site Visit I USGS Quad Cove Point, MD USGS Topo I Hydrologic Unit Code 20600060706 NW Map I Wetland Size (acres) 1.66 OWI Map I How was size estimated? Wetland Size (acres) 1.66 OWI Map I Delineation Wetlands Delineation/GIS Delineation Photograph Photograph			background informa			
User Address: 3301 Atlantic Ave, Raleigh, NC. Phone: 919-876-0416 e-mail address akdavis@mactec.com Wetlands Name WA-7 Location of Wetlands including address if available See ORAM Figure in CCNPP Wetlands Master Plan/USACE IP Application Sources of information used (check all that apply) Lat/Lon or UTM 38.42200/-76.43982 Site Visit IZ USGS Quad Cove Point, MD USGS Topo IZ Hydrologic Unit Code 20600060706 NWI Map IZ Wetland Size (acres) 1.66 OWI Map IZ How was size estimated? Wetlands Delineation/GIS Photograph Photograph Photograph	Name:			Date:	February 21, 2008	
Phone: 919-876-0416 e-mail address akdavis@mactec.com Wetlands Name WA-7 Location of Wetlands including address if available See ORAM Figure in CCNPP Wetlands Master Plan/USACE IP Application Sources of information used (check all that apply) Lat/Lon or UTM 38.42200/-76.43982 Site Visit USGS Quad Cove Point, MD USGS Topo IMPUSION IN MAP IMPU		MACTEC Engineering & Consulting				
Wetlands Name WA-7 Location of Wetlands including address if available See ORAM Figure in CCNPP Wetlands Master Plan/USACE IP Application Sources of Information used (check all that apply) Lat/Lon or UTM 38.42200/-76.43982 Site Visit USGS Quad Cove Point, MD USGS Topo Wetland Size (acres) 1.66 OWI Map Wetland Size (acres) 1.66 OWI Map How was size estimated? Wetlands Delineation/GIS Photograph Photograph Photograph	User Address:	3301 Atlantic	Ave, Raleigh, NC.			
Wetlands Name WA-7 Location of Wetlands including address if available See ORAM Figure in CCNPP Wetlands Master Plan/USACE IP Application Sources of Information used (check all that apply) Lat/Lon or UTM 38.42200/-76.43982 Site Visit USGS Quad Cove Point, MD USGS Topo USGS Quad Cove Point, MD USGS Topo Wetland Size (acres) 1.66 OWI Map Wetland Size (acres) 1.66 OWI Map How was size estimated? Wetlands Delineation/GIS Photograph Photograph Photograph	Phone:	919-876-0416				
Location of Wetlands including address if available See ORAM Figure in CCNPP Wetlands Master Plan/USACE IP Application Sources of information used (check all that apply) Lat/Lon or UTM 38.42200/-76.43982 Site Visit	e-mail address	akdavis@mactec	.com			
including address if available See ORAM Figure in CCNPP Wetlands Master Plan/USACE IP Application	Wetlands Name	WA-7				
Lat/Lon or UTM 38.42200/-76.43982 Site Visit USGS Quad	including addres	Se Se				
USGS Quad Cove Point, MD USGS Topo				used		
Hydrologic Unit Code 20600060706 NWI Map	Lat/Lon or UTM	38.42200/-76.4	43982	Site Visit		
Wetland Size (acres) How was size estimated? Wetlands Delineation/GIS Photograph	USGS Quad	Cove Point, MD				
How was size estimated? Wetlands Delineation/GIS Aerial Photo Soil Survey ODNR - DNAP Delineation Report/Map Photograph	Hydrologic Unit Co	ode	20600060706	NWI Map		
Wetlands Delineation/GIS Soil Survey	Wetland Size (acr	es)	1.66	OWI Map		
Wetlands Delineation/GIS Delineation Report/Map Photograph	How was size es	timated?				
Wetlands Delineation/GIS Delineation Report/Map Photograph					Ø	
Photograph Photograph		Mottanda Dalinas	stion/CIS	ODNR - DNAP		
		veuarius Deililea	audi/JGIG		V	
final score: 81 Provisional Watland Catagony: Catagony 3	Photograph					
final score: 81 Provisional Watland Category: Category 3						
illiai socie. Oi Flovisional Wetland Category. Category 5	final score:	81	Provisional Wetland C	Category: Category	3	

Narrative Rating Questions

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands N	ame WA-7		
1: Critical H	abitat	☑no	YES
2: Threaten	ed or Endangered Species	☑no	YES
3: Documer	nted High Quality Wetland	☑ NO	YES
4: Significa	nt Breeding or Concentration Area (waterfowl)	√NO	YES
5: Category	1 Wetlands (hydrologically isolated)	√ NO	YES
6: Bogs		√ NO	YES
7: Fens		☑ NO	YES
8a: "Old Gre	owth Forest"	✓NO	YES
8b: Mature	Forested Wetlands	□no ·	☑ YES
9a: Lake Eri	ie Coastal and Tributary Wetlands	✓NO	YES
9b: Hydrolo	gy result of Erosion Control Measures (Lake Erie)	☑ NO	YES
9c: Hydrolo	gy unrestricted	√ NO	☐ YES
9d: Native S	Species Predominate	□NO	✓ YES
9e: Non-nat	ive Species Predominate	☑ NO	YES
10: Oak Ope	enings	√ NO	YES
11: Relict W	let Prairies	✓ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100
•	

81 Category 3

Table based on FEB 2001 OEPA Standards

ORAM v. 5.0 Field Form Quantitative Rating Date: Site: Calvert Cliffs Nuclear Power Plant February 21, 2008 Wetlands: WA-8 [Did Not Score] Rater: H. Fogell, A. Davis Metric 1. Wetland Area (size). (max 6 pts) 0 0 ~ Points Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts) 0 Metric 2. Upland buffers and surrounding land use. (max 14 pts) Subtotal Points 2a. Calculate average buffer width (select one, do not double check) WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use (select one or double check & average) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrubland, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) 0. Metric 3. Hydrology. (max 30 pts) 3d. Duration inundation/saturation. (select one or double check & average) Points 3a. Sources of Water. Score all that apply. Subtotal High pH groundwater (5) Semi- to permanently inundated/saturated (4) Regularly inundated/saturated (3) Other groundwater (3) Precipitation (1) Seasonally inundated (2) Seasonal/Intermittent surface water (3) Seasonally saturated in upper 30cm (12in) (1) Perennial surface water (lake or stream) (5) 3e, Modifications to natural hydrologic regime. 3b. Connectivity. Score all that apply. (select one or double check & average) 100 year floodplain (1) None or none apparent (12) Between stream/lake and other human use (1) Recovered (7) Part of wetland/upland (e.g. forest), complex (1) Recovering (3) Part of riparian or upland corridor (1) Recent or no recovery (1) Check all disturbances observed 3c. Maximum water depth. Select only 1. ditch point source (nonstormwater) >0.7 (27.6in) (3) X 0.4 to 0.7m (15.7 to 27.6in) (2) ___ dike filling/grading <0.4m (<15.7in) (1) ∐ tile ___ road bed/RR track weir dredging stormwater input other- list Metric 4. Habitat Alteration and Development (max 20 pts.) 0. 4a. Substrate disturbance. Score one or double check and average Subtotal Points rage.

Tal. Dagonato andianbantos. Google one or as	abio oriobit aria avorago.	
None or none apparent (4)		·
Recovered (3)	4c. <u>1</u>	Habitat alteration. Score one or double check and aver
Recovering (2)		None or none apparent (9)
Recent or no recovery (1)		Recovered (6)
	. [Recovering (3)
4b. Habitat development. Select one.		Recent or no recovery (1)
Excellent (7)		
Very good (6)	Check all disturbanc	es observed
Good (5)	mowing	shrub/sapling removal
Moderately good (4)	grazing	herbaceous/aquatic bed removal
Fair (3)	clearcutting	sedimentation
Poor to fair (2)	selective cutting	dredging
Poor (1)	woody debris removal	farming
	toxic pollutants	nutrient emrichment

0 subtotal this page

Contraction of the Contraction o						
ORAM v. 5.0 Field Form Quar				D-4	5.4.0000	_
Site: Calvert Cli	iffs Nuclear	Power Plant		Date:	February 21, 2008	
Wetland:		WA-8 [Did Not Score]		Rater:	H. Fogell, A. Davis	
0 subtotal first	page					
0 50-	Metric 5.	. Special Wetlands. (max 10 pts	5.)			
Subtotal Points	Check all th	hat apply and score as indicated				
	ļ	Bog (10 pts)				
		Fen (10 pts) Old Growth Forest (10 pts)				
	<u> </u>	Mature forested wetland (5 pts)				
		Lake Erie coastal/tributary wetland-unre	stricted hydrolog	gy (10 pts)		
		Lake Erie coastal/tributary wetland-rest	-			
		Lake Plain Sand Prairies (Oak Opening	s) (10 pts)			
		Relict Wet Prairies (10 pts)				
	-	Known occurrence state/federal threate	_			
		Significant migatory songbird/waterfowl Category 1 Wetland. See Question 1 or	_			
: * * * *		Joansgory i Welland. See Question i o	i Qualitativo i tat	ing. (-10 pts)		
0 5.0*	Metric 6.	. Plant Communities, intersper	sion, microt	opography. (max 20 pt	s.;	
Subtotal Points	6a. Wetlan	nd Vegetation Communities				
	Score all pr	resent using 0 to 3 scale	Vegetatio	n Community Cover Se	cale	
· · · · · · · · · · · · · · · · · · ·		Aquatic bed	0	Absent or comprises <0.1 ha	(0.2471 acres) contiguous area	_
·.		Emergent		Present and either comprises		
Tara in Time	-	Shrub Forest	1	significant part but is of lo	erate quality, or comprises a w quality	
et, v		Mudflats		Present and either comprises		_
		Open water	2.		erate quality or comprises a small	
		Other (list)		part and is of high quality		
		- · · · · · ·	3		ficant part, or more, of wetland's	
		ntal (plan view) interspersion		vegetation and is of high	quality	_
	Select only	one High (5)	Narrativa	Description of Vegetat	ion Quality	
		Moderately high (4)	Italiative	Low spp diversity and/or pred		_
		Moderate (3)	low	disturbance tolerant native		
		Moderately low (2)		Native spp are dominant con	apponent of the vegetation	_
		Low (1)	·	* * *	r disturbance tolerant native spp	
	L	None (0)	moderate		species diversity moderate to	
	60 Covere	ago of invasive plants		threatened or endangered	erally w/o presence of rare I spp	
		oge of invasive plants. ble 1 ORAM long form for list.		Adi		_
			·	A predominance of native sp and/or disturbance tolerar	ecies, with nonnative spp nt native spp absent or virtually	
	Add or ded	uct points for coverage	high	absent, and high spp dive	rsity and often, but not always,	
		Extensive >75 % cover (-5)		the presence of rare, three	atened, or endangered spp	
garage de	<u> </u>	Moderate 25-75% cover (-3)				
		Sparse 5-25% cover (-1)		nd Open Water Class (_
7. v		Nearly Absent <5% cover (0)	0	Absent <0.1 ha (0.2471 acre	<u> </u>	_
	<u> </u>	Absent (1)	2	Low 0.1 ha to <1 ha (0.2471 Moderate 1 ha to <4 ha (2.47	·····	_
	6d. Microto	ppography	3	High 4 ha (9.88 acres) or mo		_
•		resent using 0 to 3 scale		1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		_
		Vegetated hummocks/tussocks	Microtopo	graphy Cover Scale		_
		Coarse woody debris >15 cm (6")	0	Absent		
		Standing dead > 25 cm (10") dbh	1	Present very small amounts	or if more common	

2

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts and of highest quality **Background Information Form**

	Dat	kground informa	uon Forn		
Name:	H. Fogell, A. Davis			Date:	February 21, 2008
Affiliation:	MACTEC Enginee	ring & Consulting			
User Address:	3301 Atlantic Ave,	Raleigh, NC.			
Phone:	919-876-0416				
e-mail address	akdavis@mactec.com	8	<u> </u>		98 000
	WA-8 [Did Not Sco	ore]			
Location of Wetla including address available	See OF	RAM Figure in CCNPP tion. Did not score this	area, beca	use it was	
			Sources of in used (check all the		
Lat/Lon or UTM	38.42233/-76.4424	5	Site Visit		2
USGS Quad	Cove Point, MD	90 9 90 50 50 5	USGS Top	0	7
Hydrologic Unit Co		20600060706			7
Wetland Size (acre			OWI Map		
How was size est	imated?		Aerial Phot		₽
			Soil Survey		7
	31/4		ODNR - DI	NAP	
	N/A		Delineation Report/Map		V
Photograph	A				
final score:	0	Provisional Wetland C	ategory.	Category 1	

Narrative Rating Questions

Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Wetlands Name	WA-8 [Did Not Score]		
1: Critical Habita	t .	☑ NO	YES
2: Threatened or	Endangered Species	☑ NO	YES
3: Documented I	High Quality Wetland	☑NO	YES
4: Significant Bro	eeding or Concentration Area (waterfowl)	☑ NO	YES
5: Category 1 We	etlands (hydrologically isolated)	☑ NO	YES
6: Bogs		☑ NO	YES
7: Fens		☑ NO	YES
8a: "Old Growth	Forest"	☑ NO	YES
8b: Mature Fores	sted Wetlands	✓NO	YES
9a: Lake Erie Co	astal and Tributary Wetlands	☑ NO	YES
9b: Hydrology re	esult of Erosion Control Measures (Lake Erie)	☑ NO	☐ YES
9c: Hydrology ur	nrestricted	☑ NO	YES
9d: Native Specie	es Predominate	` ☑ NO	YES
9e: Non-native S	pecies Predominate	.☑ NO	YES
10: Oak Opening	JS .	☑ NO	YES
11: Relict Wet Pr	airies	☑ NO	YES

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

0 Category 1

Table based on FEB 2001 OEPA Standards

ORAM v. 5.0 Field Form Quantitative Rating

Site: Calvert	Cliffs Nuclear Power Plant		Date:	February 21, 2008
Wetlands:	WA-9		Rater:	H. Fogell, A. Davis
2 52 Subtotal Points	Metric 1. Wetland Area (size). (ma Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha 10 to <25 acres (4 to <10.1ha) (3 to <10 acres (1.2 to <4ha) (3 pt) X 0.3 to <3 acres (0.12 to <1.2ha) 0.1 to <0.3 acres (0.04 to <0.12ha) <0.1 acres (0.04ha) (0 pts)	a) (5 pts) 4 pts) ots)) (2pts)		
16 A 14.2 Subtotal Points	Metric 2. Upland buffers and surro 2a. Calculate average buffer width (select one X WIDE. Buffers average 50m (16 MEDIUM. Buffers average 25m NARROW. Buffers average 10r VERY NARROW. Buffers average 2b. Intensity of surrounding land use (select of the select of	e, do not double check) 34ft) or more around wetland to <50m (82 to <164ft) aroun to <25m (32ft to <82ft) aro age <10m (<32ft) around wetl to e or double check & average forest, prairie, savannah, w ubland, young second growth tial, fenced pasture, park, co	perimeter (7) and wetland perimeter (4) and wetland perimeter (8) and perimeter (9) are) vildlife area, etc. (7) and forest. (5) anservation tillage, new	(1)
44 28 Subtotal Points	Metric 3. Hydrology. (max 30 pts) 3a. Sources of Water. Score all that apply. High pH groundwater (5) X Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface water (lake or	ater (3) stream) (5)	Regularly inund Seasonally inun Seasonally satu Modifications to natura	check & average) nently inundated/saturated (4) ated/saturated (3) dated (2) rated in upper 30cm (12in) (1) I hydrologic regime.
	3b. Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other X Part of wetland/upland (e.g. fore X Part of riparian or upland corrido 3c. Maximum water depth: Select only 1. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1)	est), complex (1) or (1)	Select one or double X None or none a Recovered (7) Recovering (3) Recent or no recovering (3) Re	ecovery (1)
58 .14 🚉	Metric 4. Habitat Alteration and D	evelonment (max 20	nts)	
Subtotal Points	4a. Substrate disturbance. Score one or dou X None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1)	uble check and average.		re one or double check and average. apparent (9)
	4b. Habitat development. Select one. Excellent (7) Very good (6) Good (5) Moderately good (4) X Fair (3) Poor to fair (2) Poor (1)	Check all disturband mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	Recent or no reces observed Shrub, herba sedim dredg	/sapling removal ceous/aquatic bed removal entation ing
58 subtotal th	s page			

2	Vegetated hummocks/tussocks
2	Coarse woody debris >15 cm (6")
1	Standing dead > 25 cm (10") dbh
3	Amphibian breeding pools

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

Background Information Form - OR	Background Informa	tion Form	
Name:	H. Fogell, A. Davis	Date:	February 21, 2008
Affiliation:	MACTEC Engineering & Consulting		
User Address:	3301 Atlantic Ave, Raleigh, NC.		<u>২</u>
Phone:	919-876-0416		
e-mail address	akdavis@mactec.com		
Wetlands Name	WA-9		
Location of Wetle including addres available	See ODAM Figure in CONDE	Wetlands Master Pla	n/USACE IP
		Sources of information used (check all that apply)	
Lat/Lon or UTM	38.42359/-76.44224	Site Visit	
USGS Quad	Cove Point, MD	USGS Topo	V
Hydrologic Unit C	ode 20600060706	NWI Map	7
Wetland Size (acr		OWI Map	
How was size estimated?		Aerial Photo	Ø
		Soil Survey	7
	W. H. J. B. F. J. 2010	ODNR - DNAP	
Wetlands Delineation/GIS		Delineation Report/Map	V
Photograph			

Provisional Wetland Category:

67

final score:

Category 3

Narrative Rating Questions

Name:	H. Fogell, A. Davis	Date:	February 21, 2008	
Wetlands Name	Wetlands Name WA-9			
1: Critical Habita	t	☑no	YES	
2: Threatened or	Endangered Species	√ NO	YES	
3: Documented High Quality Wetland		☑no	YES	
4: Significant Bro	eeding or Concentration Area (waterfowl)	✓NO	YES	
5: Category 1 We	etlands (hydrologically isolated)	☑ NO	YES	
6: Bogs		✓ NO	YES.	
7: Fens		√ NO	YES	
8a: "Old Growth	Forest"	✓ NO	YES	
8b: Mature Fores	sted Wetlands	✓NO	YES	
9a: Lake Erie Co	astal and Tributary Wetlands	☑ NO	YES	
9b: Hydrology re	sult of Erosion Control Measures (Lake Erie)	✓NO	YES	
9c: Hydrology ur	nrestricted	√ NO	YES	
9d: Native Specie	es Predominate	√ NO	YES	
9e: Non-native S	pecies Predominate	□no	✓ YES	
10: Oak Opening	ıs	Øио	YES	
11: Relict Wet Pr	airies	☑ NO	YES	

Table 2. Interim scoring breakpoints for wetland regulatory categories for ORAM 5.0 scores

Category	ORAM 5.0 Score
1	0-29.9
1 or 2 gray zone	30-34.9
modified 2	35-44.9
2	45-59.9
2 or 3	60-64.9
3	65-100

67 Category 3

Table based on FEB 2001 OEPA Standards

APPENDIX B

PHOTO LOG OF IMPACTED STREAM REACHES



PHOTOLOG SHEET

Site: CCNPP/ UT-JC-I-1

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVC-A

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Upstream

Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 105 Benthic IBI Score: TBD Temp (degrees C): 13.4 D.O. (mg/liter): 10.3 Salinity (%): 0.00

pH: 6.0

Conductivity (uS): 0.03 Turbidity (NTU): <10.0

Site: CCNPP/ UT-JC-I-1

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVC-A

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 105

Benthic IBI Score: TBD Temp (degrees C): 13.4 D.O. (mg/liter): 10.3 Salinity (%): 0.00

pH: 6.0

Conductivity (uS): 0.03 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/ UT-JC-I-2

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVN-D

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Upstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact
zone.

RBP Score: 138 Benthic IBI Score: TBD Temp (degrees C): 15.8 D.O. (mg/liter):10.60

Salinity (%): 0.00

pH: 7.2

Conductivity (uS): 0.08 Turbidity (NTU): 0.79

Site: CCNPP/ UT-JC-I-2

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVN-D

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 138

Benthic IBI Score: TBD Temp (degrees C): 15.8 D.O. (mg/liter): 10.60 Salinity (%): 0.00

pH: 7.2

Conductivity (uS): 0.08 Turbidity (NTU): 0.79





PHOTOLOG SHEET

Site: CCNPP/ UT-JC-I-3

Calvert County, Maryland

Adjacent Rapanos ID: RA-IVN-A,B,C

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Upstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact
zone.

RBP Score: 129

Benthic IBI Score: TBD Temp (degrees C): 14.6 D.O. (mg/liter): 11.40 Salinity (%): 0.02

pH: 7.2

Conductivity (uS): 0.53 Turbidity (NTU): <10.0

Site: CCNPP/ UT-JC-I-3

Calvert County, Maryland

Adjacent Rapanos ID: RA-IVN-A,B,C Adjacent Wetland

Assessment Area IV Date: April, 2008

Photographed by: MACTEC

Description: Downstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact

zone.

RBP Score: 129
Benthic IBI Score

Benthic IBI Score: TBD Temp (degrees C): 14.6 D.O. (mg/liter): 11.40

Salinity (%): 0.02

pH: 7.2

Conductivity (uS): 0.53 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/ UT-JC-I-4

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVN-B

Adjacent Wetland

Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Upstream Photo Depicting a view of a

jurisdictional stream that is within the proposed impact

zone.

RBP Score: 126

Benthic IBI Score: N/A

Temp (degrees C): 16.9 D.O. (mg/liter): 10.98

Salinity (%): 0.00 pH: 6.4

Conductivity (uS): 0.05

Turbidity (NTU): <10.0

Site: CCNPP/ UT-JC-I-4

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVN-B

Adjacent Wetland

Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 126

Benthic IBI Score: N/A Temp (degrees C): 16.9 D.O. (mg/liter): 10.98

Salinity (%): 0.00

pH: 6.4

Conductivity (uS): 0.05 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/ UT-JC-I-5

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVN-C

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Upstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 111

Benthic IBI Score: N/A Temp (degrees C): 14.7 D.O. (mg/liter): 12.80

Salinity (%): 0.08

pH: 6.8

Conductivity (uS): 1.70 Turbidity (NTU): <10.0

Site: CCNPP / UT-JC-I-5

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVN-C

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 111

Benthic IBI Score: N/A Temp (degrees C): 14.7 D.O. (mg/liter): 12.80 Salinity (%): 0.08

pH: 6.8

Conductivity (uS):1.70 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/ UT-JC-I-6

Calvert County, Maryland

Adjacent Rapanos ID: RA-IVN-A

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Upstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact
zone.

RBP Score: 132

Benthic IBI Score: N/A Temp (degrees C): 16.9 D.O. (mg/liter): 11.20 Salinity (%): 0.02

pH: 7.1

Conductivity (uS): 0.43 Turbidity (NTU): <10.0

Site: CCNPP/ UT-JC-I-6

Calvert County, Maryland

Adjacent Rapanos ID:

RA-IVN-A

Adjacent Wetland Assessment Area IV

Date: April, 2008

Photographed by: MACTEC

Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

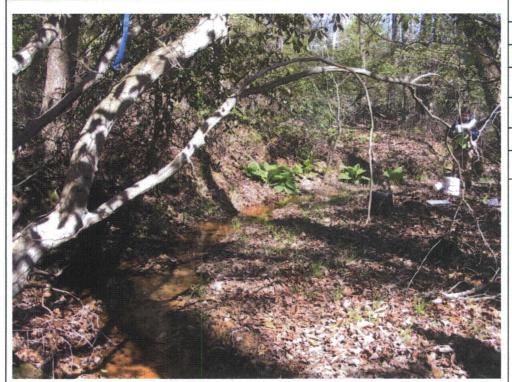
RBP Score: 132

Benthic IBI Score: N/A Temp (degrees C): 16.9 D.O. (mg/liter): 11.20 Salinity (%): 0.02

pH: 7.1

Conductivity (uS): 0.43 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/ UT-GB-I-1

Calvert County, Maryland

Adjacent Rapanos ID: RA-VIIN-A

Adjacent Wetland Assessment Area VII

Date: April, 2008

Photographed by: MACTEC

Description: Upstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact
zone.

RBP Score: 124

Benthic IBI Score: TBD Temp (degrees C): 14.0 D.O. (mg/liter): 11.70 Salinity (%): 0.07

pH: 7.2

Conductivity (uS): 1.60 Turbidity (NTU): <10.0

Site: CCNPP/ UT-GB-I-1

Calvert County, Maryland

Adjacent Rapanos ID:

RA-VIIN-A

Adjacent Wetland Assessment Area VII

Date: April, 2008

Photographed by: MACTEC

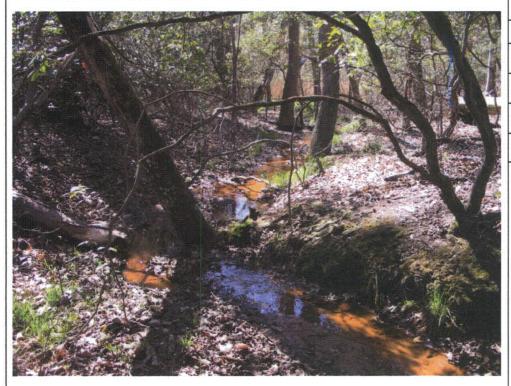
Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact zone.

RBP Score: 124

Benthic IBI Score: TBD Temp (degrees C): 14.0 D.O. (mg/liter): 11.70 Salinity (%): 0.07

pH: 7.2

Conductivity (uS): 1.60 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/ UT-GB-I-2

Calvert County, Maryland

Adjacent Rapanos ID:

RA-VIIN-A

Adjacent Wetland Assessment Area VII

Date: April, 2008

Photographed by: MACTEC

Description: Upstream

Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 134

Benthic IBI Score: N/A Temp (degrees C): 13.1 D.O. (mg/liter):12.50

Salinity (%): 0.00

pH: 7.1

Conductivity (uS): 0.21 Turbidity (NTU): <10.0

Site: CCNPP/ UT-GB-I-2

Calvert County, Maryland

Adjacent Rapanos ID:

RA-VIIN-A

Adjacent Wetland Assessment Area VII

Date: April, 2008

Photographed by: MACTEC

Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 134

Benthic IBI Score: N/A Temp (degrees C): 13.1 D.O. (mg/liter): 12.50

Salinity (%): 0.00

pH: 7.1

Conductivity (uS): 0.21 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/ UT-GB-I-3

Calvert County, Maryland

Adjacent Rapanos ID:

RA-VIIS-A Adjacent Wetland

Assessment Area VII

Date: April, 2008

Photographed by: MACTEC

Description: Upstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact

zone.

RBP Score: 60

Benthic IBI Score: TBD Temp (degrees C): 14.3 D.O. (mg/liter): 12.90 Salinity (%): 0.07

pH: 7.2

Conductivity (uS): 1.50 Turbidity (NTU): <10.0

Site: CCNPP/ UT-GB-I-3

Calvert County, Maryland

Adjacent Rapanos ID:

RA-VIIS-A Adjacent Wetland

Assessment Area VII

Date: April, 2008

Photographed by: MACTEC

Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

zone.

RBP Score: 60

Benthic IBI Score: TBD Temp (degrees C): 14.3 D.O. (mg/liter): 12.90

Salinity (%): 0.07

pH: 7.2

Conductivity (uS): 1.50 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/ UT-GB-I-4

Calvert County, Maryland

Adjacent Rapanos ID:

RA-VIIS-B Adjacent Wetland Assessment Area VII

Date: April, 2008

Photographed by: MACTEC

Description: Upstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact
zone.

RBP Score: 86

Benthic IBI Score: N/A Temp (degrees C): 14.4 D.O. (mg/liter): 12.70 Salinity (%): 0.01

pH: 7.1

Conductivity (uS): 0.30 Turbidity (NTU): <10.0



Calvert County, Maryland

Adjacent Rapanos ID: RA-VIIS-B

Adjacent Wetland Assessment Area VII

Date: April, 2008

Photographed by: MACTEC

Description: Downstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact

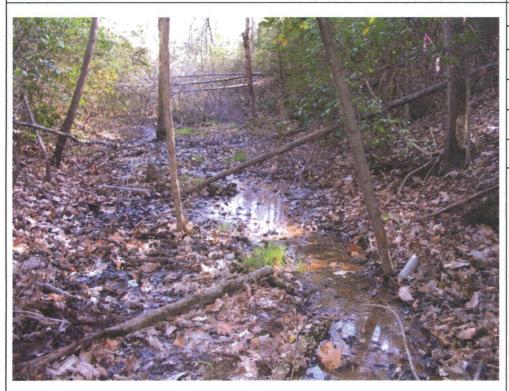
zone.

RBP Score: 86

Benthic IBI Score: N/A Temp (degrees C): 14.4 D.O. (mg/liter): 12.70 Salinity (%): 0.01

pH: 7.1

Conductivity (uS): 0.30 Turbidity (NTU): <10.0





PHOTOLOG SHEET

Site: CCNPP/LC-I-1 of 1

Calvert County, Maryland

Adjacent Rapanos ID:

RA-I-A

Adjacent Wetland Assessment Area I

Date: April, 2008

Photographed by: MACTEC

Description: Upstream
Photo Depicting a view of a
jurisdictional stream that is
within the proposed impact
zone.

RBP Score: 129

Benthic IBI Score: TBD Temp (degrees C): 11.7 D.O. (mg/liter): 10.50 Salinity (%): 0.05

pH: 6.3

Conductivity (uS): 0.45 Turbidity (NTU): <10.0

Site: CCNPP/LC-I-1 of 1

Calvert County, Maryland

Adjacent Rapanos ID:

RA-I-A

Adjacent Wetland Assessment Area I

Date: April, 2008

Photographed by: MACTEC

Description: Downstream Photo Depicting a view of a jurisdictional stream that is within the proposed impact

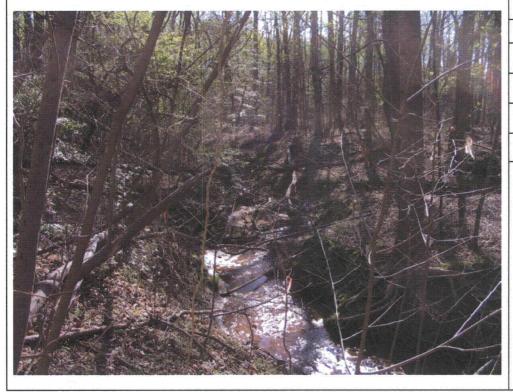
zone.

RBP Score: 129

Benthic IBI Score: TBD Temp (degrees C): 11.7 D.O. (mg/liter): 10.50 Salinity (%): 0.05

pH: 6.3

Conductivity (uS): 0.45 Turbidity (NTU): <10.0



APPENDIX C

RAPID BIOASSESSMENT METHOD DATA

Enclosure 3 RAI Letter Attachments

Responses to RAI Homo TE-10 \$TE-15

MBSS SF	PRING INDE	X PERIOD DA	TA SHEET	Page 1 or 2
SITE PAX WB-M1	Type Year 2 0 0	X .	Reviewer:	ADans / R.Solu
DATE 0.8. 04 1.5		R. Sain/A Woodland B		
TIME LOUS (Military)	LOCALITY:_	CCNPP		· · · · · · · · · · · · · · · · · · ·
SAMPLEABILITY Benthos Habitat Assessment Water Quality Vernal Pool PRESENT/ABSENT OTHER (SPECIFY)	the North	to Ha boon	Calvert C	Tiffe Pkuy to
SAMPLE LABE Verified by: QC LABEL Watershed Code Segment Type P A (Letters only) Dup. (D) on Blank (B): Verified	Year	WATER X AIR L LOCATION	EMP. LOGGE	Cond = . Z3 m/
Time Number	N/A Re	PHOTODOCU Tritle presentative Pho		(Y/N)
HERPETOFA Observed	AUNA Lifesta.	ge HEARD NEIFEGG SEEN YIN RETAIN		THIC HABITAT SAMPLED Riffle Rootwad/Woody Debris Leaf Pack Macrophytes Undercut Banks Other
SAMPLING CONSID.: (STREAM WIDTH (m) 0 9	NUM. ANODES)			

	MBSS SP	RING HAB	ITAT DATA SI	HEET Pag	e Z or 2	
Sami.	Segment Type S-M1 Dev	Year 2008		Reviewer: A.Do	Second Nu.5/R. Soin	
DATE 0.8.64	15	in and a state of the state of		. Habitian in a limit of the control		
1.0.00 Dist. from I		of to Site (ff)	RIP	ARIAN VEGETATI (facing upstream)	ON	
Trash Ratii	ng 0 - 20		Alleger (Alle Alleger) was complete the state of the stat	LEFT BANK	RIGHT BANK	
LANDUSE	(Y/N)				5.0	
Old Field	Residential		Width (50m max)	>50	7 <u>50</u>	
Deciduous Forest	Commercial/Inc	lustrial	Adjacent Lend Cover Vegetation Type	see budgaa		
Conferous Forest Wettand	Cropland Pasture		Buffer Breaks (Y/N)	<u>N</u>	4	
Surface Mine Landfill	Orchard/Vineya	ird/Nursery	Bollor Broads (1714)			. 4
) Con Course		Storm Drain		summer	· .
Present in Segment? (Y/N)	STREAM (m)	GRADIENT Holipht (m)	Tile Drain Impervious Dra Gully Orchard Crop Pasture		Parameter (1997)	
Width of Culvert (m) N/A	2		New Construct Dirt Road Gravel Road Raw Sewage	ion		
Length of Culvert (m) MA.	homeontone	·	Reilroad		- varade	
	3)		Buffer Br (M = minor;	eak Types S = severe)	
CHANNELIZATION			<u>Andria de maisinis de la casa de</u>	Weller The Astrair 6	oordinates	
W Ev	idence of Chan	nel Straightening	or Dredging (Y/N)	# # ### ##############################	ance between lates and stream)	: -
ТҮРЕ		EXTENT (1	m)		#FIGURES 1947/STEELS - 173	
and the same of th	LEFT BANK	BOTTOM	RIGHT BANK	kon		·
Concrete		· Lumbanus	Marie Carlos Car			
Gabion Rip-Rap				Stream Blockshit (m)		
Earthen Berm	-	N/A	terresinate considerate	Stream Block laye		
Dredge Spoll Off Channel	, and the same of	NIA	because the second			
Pipe Gulvert	<u> </u>		The second secon	Lon		
		5	57			
					*	
	•					

STREAM NAME Woodland Bran	LOCATION WIB - MI (SR-1)
STATION # RIVERMILE	STREAM CLASS
LATLONG	RIVER BASIN Patur 1
STORET# N/A-	AGENCY N/A
INVESTIGATORS 12 Sain / A	Dovi S
FORM COMPLETED BY	DATE 4/5/08 REASON FOR SURVEY
1650	TIME 10:45 @ PM NRC-USACE-MDE

	Habitat		Condition	Category		
	Parameter	Optimal	Suboptimal	Marginal	Poor	
	1, Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30-50% mix of stable habitat, well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Parameters to be evaluated in sampling reach	score 5	20 ± 19 ≘18 - 17 / 16*	35 14 13 12 FH	10 9 88 7 6	5) 4 3 2 1 0	
	2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay of bedrock; no root mat or vegetation.	
	SCORE 6	20 19 18 17 16	15: 14 -13 -12 -11	10 9 8 7 6	5 4 3 2 1 0	
	3. Pool Variability	Even mix of large- shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large- deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small- shallow or pools absent.	
mete	SCORE &	20 19 18 17 16	15 : 14 13 12 11	10 9 (8) 7 6	5 4 3 2 1 0	
Paran	4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development, more than 80% of the bottom changing frequently, pools almost absent due to substantial sediment deposition.	
	SCORE 4	20 19 18 17 16	15 14 . 13 12 11.	10 9 8 _ 7 6	55 3 2 1 0	
	5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	exposed.	Very little water in channel and mostly present as standing pools.	
	SCORE Z	20 19 18 17 16	i5 14 13 (2) ia	¥10	5, 4, 3 2 1 0	

	Habitat		Condition	Category	
	Parameter	Optimal	Suboptimal	Marginal	Poor
	6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization; i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
	SCORE 16	20 19 18 17 (16	15 14 13 12 11	40 9 8 7 6	5:4:3:2:1:0
ling reach	7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
Sam	SCORE 8	20 19 18 17 16	_15; 14 _ 13; 12; d1; 3	10 9 (8) 7 6	5 4 3 2 1 0
Parameters to be evaluated broader than sampling reach	8. Bank Stability (score each bank)	Banks stable; evidence of erosion of bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over: 5-30% of bank in reach has areas of erosion.	Moderately unstable, 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
e ev	SCORE (LB)	Left Bank 10 9	8 7 6	5 4 3 4	
s to b	SCORE (RB)	Right Bank 10 9	8 7 6	3 4 3	2 (1) 0
Parameters	9. Vegetative Protection (score each bank) Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	SCORE Z (LB)	Left Bank 10 9	7 6	5, 4, (3)	2 1 50
	SCORE 3 (RB)	Right Bank 10.9	8 7 6, 5,	5, 3, 4 (F)	$1, 2, 2, \dots$ 0
	10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12- 18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6- 12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
	SCORE (LB)	Left-Bank (10) 9	8 7= 6,	5 4 3	2 -1 0
ļ. ,	SCORE 2 O(RB)	Right Bank (10 / 9	=8 = ₹7 ; ;; 6 × }	5 4 4 32	2 1 0

MBSS SPRING INDEX PERIOD DATA SHEET Rage 1 01 2	
Watershed Code Segment Type Year First Second	
SITE PAN WR-MZ 2008 Reviewer A. Davis P.Soi	
Year Month Day CREW: 12 Sa -	
DATE 0.8. 0.4 14 STREAM: Wood and Broad	
LOCALITY: CONPO	
TIME 1 3.2.0 (Milhary)	
SAMPLEABILITY SITE ACCESS ROUTE	
1 Benthos C.C. Pokuay - Mec Visitors Centre	
✓ Habitat Assessment	
✓ Water Quality	
Vernal Pool _A_ eresentiassent	
OTHER (SPECIFY)	
SAMPLE LABELS TEMP. LOGGER Temp= 141°C	
Northead him (A) (Vat	
OC LABEL WATER NUM.	
Watershed Code Segment Type Year AIR 215.7 CNUM Cond. = 32 m/	;
(Letters only) LOCATION Kineters train d.S. pt. Tub : < 10 v	m1
OC LABEL Watershed Code Segment Type Year AIR 15.2 CNUM. PI = 7.2 " LOCATION 10 meters from d.s. pt. Cond. = .32 m/s LOCATION 10 meters from d.s. pt. Cond. = .32 m/s Dup. (D) or Blank (B): Verified by: 9.0 = 10.8 meters	-5/36
PHOTODOCUMENTATION	<i>J*</i> "
Time Number Title (Y/N)	
N/A Representative Photos were toler	
Water Company of the	
Complement bearing the second complement com	
HERPETOFAUNA Lifestage HEARD BENTHIC HABITAT	
Observed Adult Jay, Land Egg SEEN YN RETAINED SAMPLED	
Riffle	
Rootwad/Woody Debris	
Leaf Pack	
Macrophytes	
Undercut Banks	
Other Jab	
CONTRIBUTE CONTRIBUTE AND TO THE CONTRIBUTE OF T	
SAMPLING CONSID.: (NUM. ANODES)	
WIDTH (m) 0 3 7.5 0	

	MBSS SPRING HAB	ITAT DATA SHE	ET Page 2 Of 2
SITE PAY W	egment Type Year 3-M2 200, % Dev	٠	Reviewer: A.Deris / R. S.: _
<u>^</u>	Nearest Road to Site @	i	RIAN VEGETATION facing upstream)
Deciduous Forest Coniferous Forest Wetland Surface Mine Landfill	(Y/N) Residential Commercial/Industrial Cropland Pasture Orchard/Vineyard/Nursery Golf Course	Width (50m max) Adjacent Land Cover Vegetation Type Buffer Breaks (Y/N)	LEFT BANK RIGHT BANK S.O. S.O. S.O. S.O. See 3 ride
ROAD CULVERT Present in Segment? (Y/N) Sampleable? (Y/N) Width of Culvert (m) Length of Culvert (m)	STREAM GRADIENT Lecation (m) Height (m) 1 2	Storm Drain Tile Drain Impervious Drains Gully Orchard Crop Pasture New Construction Dirt Road Gravel Road Raw Sewage Railroad	
CHANNELIZATION W EVI	dence of Channel Straightening		Actual Coordinates (Ile Som Edistance the tween coligination or
Concrete Gabion Rip-Rap Earthen Berm	LEFT BANK BOTTOM	RIGHT BANK	Stream Black Stratt
Dredge Spoil Off Channel Pipe Culvert	N/A	57	200

STREAMNAME Wood - 1 13vo	LL LOCATION WB-M2 (SR-Z)
STATION# RIVERMILE_	STREAM CLASS 6
LATLONG	RIVER BASIN Potugrat
STORET # N/A	AGENCY N/A
INVESTIGATORS Z Soin / A	Douls
FORM COMPLETED BY	DATE 4/15/04 REASON FOR SURVEY
17. Salva	TIME 13.40 AM @ NEC-USAUE MORE

	Habitat	Condition Category					
	Parameter	Optimal	Suboptimal	Marginal	Poor		
	1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover, mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30-50% mix of stable habitat, well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious, substrate unstable or lacking.		
each	score 3	20 19 18 17 16	F15, 14 , 135, 12 11	10 9 8 7, 6	5 4 (3) 2 1 0		
Parameters to be evaluated in sampling reach	2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent, root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.		
	score <	20 19=18 17 16	15 14 13 12 11	₹10 9 -8 7 6	5 4 3 2 1 0		
	3. Pool Variability	Even mix of large- shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large- deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small- shallow or pools absent.		
mete	SCORE Z	20 19 18 17 16	15 14 (13 12 11	10 9 8 7 6	.5 4 3 D 1 0		
Parar	4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.		
	score 5	20: 19 18 17 16	15, 14 13 12 11	10:::9:-8:-7:-6.	(5)4 3 2 1 0		
	5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools:		
	score 7	120 19 18 17 16	345 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0		

	Habitat		Condition	Category	
	Parameter	Optimal	Suboptimal	Marginal	Poor
	6. Channel Alteration	Channelization or dredging absent or minimal, stream with normal pattern	Some channelization present, usually in areas of bridge abutiments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted Instream habitat greatly altered or removed entirely:
ing,reach	SCORE 18	20 = 19 (8) 17 - 16	15 .14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	7. Channel Sinuosity	The bends in the stream increase the stream length. 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream increase the stream length. I to 2 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
Sam	score 7	20 19 18 17 16	15 14 13 12 11	10 9 8 (1) 6	0:5 ::4 3 : .2 . 1 0
Parameters to be evaluated broader than sampling reach	8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal, little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing, 60-100% of bank has erosional scars.
e cva	SCORE (LB)	Left Bank . 10 9	8 7 6	5 5 4 5 3	32 CD 0 =
9	SCORE 1 (RB)	Right Bank 10 9	8 7 6	5 4 3	2 (1) 0
Parameters	9. Vegetative Protection (score each bank) Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	SCORE 2 (LB)	Left Bank 10 9	8 7 6	5 4 3	(2) - 1 - 0
	SCORE 2 (RB)	Right Bank 10 9	8 7 7 6	5 4 3	(2) 1 0
	10. Riparian Vegetative Zonc Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12- 18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6- 12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
	SCORE (LB)	Left Bank (10)9	8;:::-7::-6::	5 43	2 1 0
	SCORE (C) (RB)	Right Bank (10 9	8 7 6	. 35 4 3	2 * 1* 0.

MBSS SPRIN	G INDEX PERIOD DATA	A SHEET Page 1 of 2
Watershed Code Segment Type	Year	First Second
SITE CHES LEMS	2 0 0 %	Reviewer A. D. W. R. So.L
Year Month Day	CREW: 12.501-/A/	Dadis
	REAM: Love Creek	
	CALITY CONPP	
TIME 0930 (Milliony)		
SAMPLEABILITY SITE	ACCESS ROUTE	
	less road northwest	of Comp Canous
✓ Habitat Assessment		
Water Quality		
Vernal Pool A PRESENTIAL		
OTHER (SPEORY)		
SAMPLE LABELS	TEN	MP. LOGGER 562 m/s
Verified by: N/A		=1.50
QC LABEL	WATER X	NUM. Tob = 10 NUM. DO = 10,57 MATINE
Wätersheid Code Segment Type Ye	ar AIR	NUM. D. D. = 1.013
CHES	LOCATION	
(Letters only)		Saluty= 020
Dup. (D) or Blank (B): Verified by:		PH=7.0
	PHOTODOCUM	ENTATION Voucher
Time Number	Title	(Y/N)
$\sim \sim $	A Representative Pho	tos tolem
	•	
hanna da anna		**************************************
, Constant of the Constant of		· · · · · · · · · · · · · · · · · · ·
HERPÉTOFAUNA	Lifestage HEARD	BENTHIC HABITAT
Observed	Aded Jun Larval Ego SEEN Y/N RETAINED	SAMPLED
		Riffle
		Rootwad/Woody Debris
		Leaf Pack
		Macrophytes
New Production Control of the Contro	드러드는 그 드	Undercut Banks
	느느느느	•
		Other
SAMPLING CONSID.: (NUMLA	NODES)	
STREAM		
WIDTH (m) 1 0 7.5	5 0	

N	IBSS SPRING HAB	ITAT DATA SHE	ET Page	2 of 2
SITE CHES LC	pment Type Year 17013 2_0_0_ % av	:	Reviewer: A.Dov	Second
	arest Road to Site @		IAN VEGETATIO	DN
Deciduous Forest Conferous Forest Wetland Surface Mine	(/N) Residential Commercial/Industrial Cropland Pasture Orchard/Vineyard/Nursery Golf Course	Width (50m max) Adjacent Land Cover Vegetation Type Buffer Breaks (Y/N)	LEFT BANK 50 7.50 F.R.	RIGHT BANK
ROAD CULVERT Present in Segment? (Y/N) Sampleable? (Y/N) Width of Culvert (m) Length of Culvert (m)	STREAM GRADIENT Location (in) Height (in) 1 2 3	Storm Drain Tile Drain Impervious Draina Gully Orchard Crop Pasture New Construction Dirt Road Gravel Road Raw Sewage Railroad	Buffer Bre	ak Types S = severe)
CHANNELIZATION Evidently	ence of Channel Straightening EXTENT LEFT BANK BOTTOM		hat-	incerbetween
Concrete Gabion Rip-Rap Earthen Borm Dredge Spoil Off Channel Pipe Culvert	N/A N/A	· []	Stream Block Hight) Stream Block plype Lat	

STREAM NAME LONG Creek	LOCATION 4-M-03 (5R-3)
STATION#RIVERMILE	STREAM CLASS 6,4 (Possel)
LAT SAE GPS LONG	RIVER BASIN CLOSE DOCLE BOY
STORET# N/A	AGENCY N/A
INVESTIGATORS R. Ser. /ADev	
FORM COMPLETED BY	DATE 4/14/08 REASON FOR SURVEY
R. Sella	TIME 11:15 CM PM NRC - USACE MOE

Habitat	Condition Category			
Parameter	Optimal	Suboptimal	Marginal	Poor
i. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover, mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat, habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE 15	20 19 18 17 16	FTD+14 13 12 11 =	10 9 8 7 6	5 4 3 2 1 0
2. Pool Substrate Characterization SCORE #5 3. Pool Variability SCORE #0	Mixture of substrate materials, with gravel and firm sand prevalent, root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay, mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock no röot mat or vegetation
SCORE 15	20 19 18 17 :16	815) 14 13 12 11 2	10 9 8 7 6	5 4 3 2 1 0
3. Pool Variability	Even mix of large- shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large- deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small- shallow or pools absent.
SCORE 10	20 19 18 17 16	15 14 13 (12 11)	(0) 9 (8 7 6	15 4 3 2 1 0
4, Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; poo almost absent due to substantial sediment deposition.
SCORE / ()	20 : 19 - 18 - 17 - 16	15 14 19 12 11	(10) 9 8 27 96	5 4 3 2 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools
SCORE 17	20 19 18 17 16	15] 14 13(12)11	10 9 8 7 6	5 4 3 2 1 0

1-C-M-1

	Habitat	The state of the s			
	Parameter	Optimal	Suboptimal	Marginal	Poor
	6. Channel Alteration	Channelization or dredging absent or minimal, stream with normal pattern	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement, over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
	score 14	20 19 18 17 16	15/40/15 12:46	109 8 -7 6	5 4 3 2 1 0
pling reach	7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight-line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
SBI	SCORE 16	20 = 19 - 18 - 17/16	ig5 :14 :13 2 :1]	10 9 8 7 6	5 4 3 2 1 0
Parameters to be evaluated broader than sampling reach	8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal, little potential for future problems: <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30- 60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
e ev	SCORE 4 (LB)	Left Bank 10 9	8 7 - 6	5. (4) 33 sc	97 (2) 15 0
s to	SCORE 6 (RB)	Right Bank 10 9	8, 7 (1)	5 ¥, 3	. 2 -1 (0)
Parameters (9. Vegetative Protection (score each bank) Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	SCORE <u>\$</u> (LB)	Left Bank 10 9	8 7 6	<u>(5)</u> 4 3	2 10
	SCORE 5 (RB)	Right Bank 10 9.	7 - 8 - 7 - ± 5 6	<u>(5</u> 7 4	8 2 : 1: : 0
	10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12- 18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6- 12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
	SCORE (LB)	Left Bank 10 (9.)	8 7 6	5 4 3	2 1 10
	SCORE 9 (RB)	Right Bank 7.10 (9)	. 18 7 6 € ≥ €	5 4 3 .	2 1 0

MBSS SF	PRING IND	EX PERIOD D	ATA SHEET	Page 1 01 2
Watershert Code - Sagment	Type Year			First Second
SITE JC-M4	200	_\$_	Reviewer:	A. Bours / R. Sail
Year Month Day	CDEW	R. Soin / A	~ i.e	• •
DATE 0.8 0.4 16			200	
		Johns Cri		
TIME 1223 (Military)	LOCALITY	CCNPP		
Production of the second second	ricalive			
SAMPLEABILITY	SITE ACCE			
L Benthos	CCVIPP	- UT . JC		
Habitat Assessment		·		
Water Quality				· · · · · · · · · · · · · · · · · · ·
Vernal Pool PRESENTIASSENT				
OTHER (SPECIFY)				
SAMPLE LABE	LS		HEMP. LOGGE	R Terp = 12.8
Verified by: W/A		(Y/N)	•	501 = .01%
QC LABEL		WATER X	NUM,	PH = 7.3
Watershed Code Segment Type	Year	AIR	NUM.	
(Letters only)		LOCATION 30 M	erevista	Lad. = . 3
		540		Tirb = LIO NTU
Dup. (D) or Blank (B): Venified	by:			Do : 11.5
		PHOTODOC	UMENTATION	: Vou che r
Time Number			itte	(Y/N)
Company Company	N/\4	Representative	Arthy Mere	toka d
		-		
· ·				
Mone HERPETOF	Lites	tage HEARD	l l	THIC HABITAT
Observed	Adist Jili	Larval Ego SEEN Y/N RI	1	SAMPLED Riffle
Salarader Spp?				
				Rootwad/Woody Debris
				Leaf Pack
		丙丙酉 西		Macrophytes
			<u></u> .	
				Lindercut Banks
			<u></u>	Undercut Banks
			<u></u>	Undercut Banks Other J.
	7/4		<u></u>	
SAMPLING CONSID.: (NUM ANODES		<u></u>	
SAMPLING CONSID.: (STREAM WIDTH (m)	NUM. ANODES		<u></u>	

MBSS SPRING HAB	ITAT DATA SHEET Page 2 of 2	·
Watershed Code Segment Type Year SITE	First Second	·
	RIPARIAN VEGETATION (facing upstream)	
LANDUSE (Y/N) Old Field Residential Deciduous Forest Commercial/Industrial Coniferous Forest Cropland Wetland Pasture Surface Mine Ordhard/Vineyard/Nursery Landfill Golf Course	LEFT BANK RIGHT BANK Width (50m max) Adjacent Land Cover > 50 Sec + 100 Vegetation Type Buffer Breaks (Y/N)	
ROAD CULVERT STREAM GRADIENT Location (m) Height (m) Sampleable? (Y/N) Width of Culvert (m) Length of Culvert (m) MA 2 Length of Culvert (m) 3	Storm Drain Tile Drain Impervious Drainage Gully Orchard Crop Pasture New Censtruction Dirt Road Gravel Road Raw Sewage Rallroad Buffer Break Types (M = minor; S = severe)	
CHANNELIZATION Evidence of Channel Straightening TYPE EXTENT LEFT BANK BOTTOM Concrete Gabion Rip-Rap Earthen Berm Dredge Spoil Off Channel Pipe Culverl Pipe Culverl Pipe Culverl		

STREAM NAME John & Crepk	LOCATION OZ-M4+
STATION# RIVERMILE	STREAM CLASS 665
LAT LONG	RIVER BASIN Policyell
STORET# N/A	AGENCY N/A
INVESTIGATORS RS. / A.D.	À C
FORM COMPLETED BY	DATE 4/16/08 REASON FOR SURVEY
R. Soil	TIME 12:30 AM COO NRC-USANCE- MADE

	Habitat	Condition Category			
	Parameter	Optimal	Suboptimal	Marginal	Poor
	1. Epitaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat, lack of habitat is obvious; substrate unstable or lacking.
ea Ch	score 7	20 19 18 17 16	:15 :14_:/13 :(12':11)	30 9 8 (7) 6;	45.43.21. 0
Parameters to be evaluated in sampling reach	2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
uate	SCORE O	20 19 18 17 16	75 74 45 12 11	10 (9) 8 7 6	.5 4 3 2 1 10
rs to be eval	3, Pool Variability	Even mix of large- shallow, large-deep, small-shallow, small-deep pools present	Majority of pools large- deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small- shallow or pools absent.
mete	SCORE 7	20 19 18 17 16	15 44 13 12 11	10 9 8 7 6	5 4 3 2 1 0
Раган	4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars: 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
	score 7	20 ,19 18 17 16;	15 14 13 12 11	Mio 9 8 706	5 4 3 2 1 10
	5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
	SCORE 10	20 319 18 17 16	15 14 13 .12 11	(0)9 18% 7 6	5 4 3 2 1 0

	Habitat	Condition Category			
L	Parameter	Optimal	Suboptimal	Marginal	Poor
	6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present; but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
	SCORE 17	20 19 48 17 46	715 24 719 (12)11	⊿0 9 38 7 36	.5. 4. 3. 2. 1. 0.
pling reach	7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	The bends in the stream increase the stream length. I to 2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
sam	score 7	.20 .19 = 18 - 17 - 46.	15 94 .03 :12 :11	10 9 877) 6	5 4 3 2 3 10
Parameters to be evaluated bronder than sampling reach	8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods:	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
eva	SCORE L (LB)	Left Bank 10 9	8 7 6	3:5 4 3	* 2 (1) 0
to be	SCORE (RB)	Right-Bank 10 9		5	2 (4 0 :
Parameters	9. Vegetative Protection (score each bank) Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.		Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	SCORE 4 (LB)	Left Bank 10 9	18 7 46 N	3 (4) 3	32 3 0×
	SCORE 4 (RB)	Right Bank 10 9	8: 7. 6	5 (4) 3	12 11 11 10
	10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12- 18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6- 12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
	SCORE 10 (LB)	Left Bank (19) 9	8 7 6	5 4 3	2 1 0
	SCORE /D (RB)	Right Bank (10) 9	8 76	5 4. 3	2 1 0

MBSS SPRIN	G INDEX PERIOD DA	TA SHEET Page 1 of 2
Watershed Code Segment Type	Year	First Second
SITE PAX UTIC-MS.	<u>2008</u>	Reviewer A. Dovis P. St.
Year Month Day	CREW: RSain / A	1. Davis
DATE 0.8 04 1.6 ST	TREAM: UT to Joh	vis Eveck
TIME 1.0.4.0 (Military) LOC	CALITY: COMPP	
SAMPLEABILITY ISITE	ACCESS ROUTE	
		is Crook downstan to
Habitat Assessment	- Cl. 1200 - Ald 9	Poute mecess from South
	poly he	
Vernal Pool A PRESENTIASSENT		
OTHER (SPECIFY)		
SAMPLE LABELS	T	EMP. LOGGER Temp= 8.4°C
Verified by: W/A	(Y/N)	P4 = 72
QC LABEL	WATER Y	to the same the same that the
Watershed Code Segment Type Ye	AIR	NUM Sc 1.7.0%
(Letters only)	LOCATION	0.0=13.3
.		Turbetto
Dup. (D) or Blank (B): Verified by:		
	PHOTODOCU	MENTATION Voucher
Time Number	↑ Title	CM . A
N/	A Representative	1 botos telen w
	,	
Normalian and American America		
HERPETOFAUNA	Lifestage HEARD	BENTHIC HABITAT
Observed	Adult Jun Lineal Egg SEEN YW RETAL	SAMPLED
Leoperd Frag		Riffle
		Rootwad/Woody Debris
		Leaf Pack
		Macrophytes
		Undercut Banks
	[HHHHHH H	Other Job method
		Still O'D'S PARENTY
	NODES)	
STREAM WIDTH (m)	5.0	
75		

MBSS SPRING HAB	ITAT DATA SHEET Page 2 of 2
SITE Wolfeshed Code Segment. Type Year SITE Year Month Day DATE 08 94 16	Reviewer: A. Doviš/R. Soin
	RIPARIAN VEGETATION (facing upstream)
LANDUSE (Y/N) Old Field Residential Deciduous Forest Commercial/Industrial Conferous Forest Cropland Welland Pasture Surface Mine Orchard/Vineyard/Nursery Landfill Golf Course	LEFT BANK RIGHT BANK Width (50m max) Adjecent Land Cover Vegetation Type Buffer Breaks (Y/N) LEFT BANK RIGHT BANK RIGHT BANK RIGHT BANK S.O. 5.O. 7.5.O. S.O. 7.5.O. S.O. 7.5.O. S.O. 7.5.O. L.D. 1.D. 1.D. 1.D. 1.D. 1.D. 1.D. 1.D.
ROAD CULVERT STREAM GRADIENT Present in Segment? (Y/N) 1 Sampleable? (Y/N) HA 1 Width of Culvert (m) NA 2 Length of Culvert (m) NA 3	Storm Drain Tile Drain Impervious Drainage Gully Orchard Crop Pasture New Construction Dirt Road Gravel Road Raw Sewage Railroad Buffer Break Types (M = minor; S = severe)
CHANNELIZATION [V] Evidence of Channel Straightening	
Concrete Gabion Rip-Rap Earthen Berm Dredge Spoil Off Channel NIA	RIGHT BANK Lon Stream BlockHi Am) Stream BlockHi Am)
Pipe Culvert	150h

STREAM NAME UT to John's Coople	LOCATION UT JC-MS (SRS)
STATION# - RIVERMILE 6 KM	STREAM CLASS 65
LATLONG	RIVER BASIN Patureut
STORET # N/A	AGENCY N/A
INVESTIGATORS R.S / A.D.	V.S.
FORM COMPLETED BY	DATE 4/16/08 REASON FOR SURVEY TIME 11:13 CD PM DIG C ALCACE AND COLOR
1c. 50 -	TIME 17.73 AND PM NO C- USACE -MOE

	Habitat		Condition	Category	
	Parameter	Optimal	Suboptimal	Marginal	Poor
	i. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
евс	score (5	20 19 18 17 16	(15)14 313 12 11 °	10, 9 .8 7 6	5 4 3 2 1 0 0
Parameters to be evaluated in sampling reach	2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay, mud may be dominant, some root mats and submerged vegetation present.	All mud or clay or sand bottom, little or no root mat, no submerged vegetation.	Hard-pan clay or bedrock, no root mat or vegetation.
uate	SCORE 14	20 19 18 17 16	ii5 (4 ≯)3. i2.9i1.	30 9 8 7 6	5 4 3 2 1 0
ers to be eval	3. Pool Variability	Even mix of large- shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large- deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small- shallow or pools absent.
ımetı	score \6	20 .19 .18 .17 (16)	² 15 - 14 - 413 - 12 - 11 -	10 9 8 7 6	5 4 3 2 1 0
Pars	4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
	SCORE 12	20 19 18 17 16,	15 14 13 (12)1	10 9 8 7 6	5 4 3 2 1 0
	5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel, or	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
	SCORE 18	20 19 (18) 17 116	15 14 43 12-11	10 9 8 7 6	5-4-3 -2-1-0

	Habitat Condition Category				
Parameters to be evaluated broader than sampling reach	Parameter	Optimal	Suboptimal	Marginal	Poor
	6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement, over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
	SCORE (7	20 (19) 18 17 16	15 14 13 12 14	10 9 8 7 6	5 4 3 2 1 0
	7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
	SCORE 15	20 19 18 17 16	(15)14 13 (2:11)	10. 9 8: 7 6	5 4 3 2 4 9
	8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30- 60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
	SCORE 7 (LB)	Left Bank 10. 9	8 (7) 16	5 4 3	2 7 1 20
	SCORE 👤 (RB)	Right Bank = 10 9	(7) 6	, 5 . 4 . 3	2 1, 10
	9. Vegetative Protection (score each bank) Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented, disruption evident but not affecting full plant growth potential to any great extent, more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation, disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
	SCORE $\frac{\mathcal{Z}}{2}$ (LB)	Left Bank 10 9	8 7 6	5 4 🛈	2 1 0
	SCORE 3 (RB)	Right Bank 10 9	8 7 . 7 6	(* 5° 4 (3 ₂);	2 J ₂ 50
	10. Riparian Vegetative Zone: Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12- 18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6- 12 meters: human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
	SCORE (LB)	Left Bank (10)9	8 7 6	5 4 3	. 2 1 0
	SCORE (RB)	Right Bank (10) 9	4.8 2.7 6	, S 4 5 6	2 - 1 - 0 -