Site: W	OH-252		Rater(s): BRH		Date: May 10, 2017
0	0	Metric 1. Wetland A	rea (size).		
max 6 pts.	subtotal	Select one size class and assign score >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20 10 to <25 acres (4 to <10.1h 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.2 0.1 to <0.3 acres (0.04 to <0	0.2ha) (5 pts) na) (4 pts) ı (3 pts) 2ha) (2pts)		
1	1	Metric 2. Upland bu	ffers and surround	ing land use.	
max 14 pts.	subtotal	MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth or LOW. Old field (>10 years) MODERATELY HIGH. Res	n (164ft) or more around wetland p 25m to <50m (82 to <164ft) around 10m to <25m (32ft to <82ft) arour 1verage <10m (<32ft) around wetlar	erimeter (7) wetland perimeter (4) nd wetland perimeter (1) nd perimeter (0) liverage. dlife area, etc. (7) forest. (5) ervation tillage, new fallo	ow field. (3)
12	13	Metric 3. Hydrology			
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (lake 3c. Maximum water depth. Select on >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic Recovered (7) Recovering (3) Recent or no recovery (1)	ce water (3) te or stream) (5) 3d. ly one and assign score. (2) tregime. Score one or double che	Part of wetland/u Part of riparian or Duration inundation/satu Semi- to permane Regularly inundat Seasonally inundat Seasonally satura ck and average. point source (non filling/grading road bed/RR trac dredging	in (1) lake and other human use (1) cland (e.g. forest), complex (1) cupland corridor (1) curation. Score one or dbl check ently inundated/saturated (4) ced/saturated (3) ated (2) ated in upper 30cm (12in) (1) stormwater)
6	19	Metric 4. Habitat Alt	· ·	ppment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)			
_		4c. Habitat alteration. Score one or d None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing clearcutting	shrub/sapling rem herbaceous/aqua sedimentation	
	19		selective cutting woody debris removal toxic pollutants	dredging farming nutrient enrichme	nt
last revised	btotal this pa 1 Februa	•			

Site: W	OH-252	Rater(s): BRH		Date: May 10, 2017
su	19 btotal first pa	lge			
0	19	Metric 5. Special Wetlan	ds.		
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Openi Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water Category 1 Wetland. See Question	estricted hydro ings) (10) atened or enda fowl habitat or 1 Qualitative R	logy (5) angered species (10) usage (10) ating (-10)	
-1	18	Metric 6. Plant communi	ties, int	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale. Aquatic bed Emergent	1	Absent or comprises <0.1ha (0.24 Present and either comprises small vegetation and is of moderate q	all part of wetland's uality, or comprises a
		Shrub Forest Mudflats Open water	2	significant part but is of low qua Present and either comprises sign vegetation and is of moderate q part and is of high quality	nificant part of wetland's
		Other	3	Present and comprises significant	part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.	· ·	vegetation and is of high quality	part, or more, or metiana
		Select only one.		regetation and to or might quality	
		High (5)	Narrative D	escription of Vegetation Quality	
		Moderately high(4) Moderate (3)	low	Low spp diversity and/or predomin disturbance tolerant native spec	
		Moderately low (2) Low (1) ✓ None (0)	mod	Native spp are dominant compone although nonnative and/or distuction can also be present, and species	rbance tolerant native spp
		6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generally v threatened or endangered spp	v/o presence of rare
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominance of native species and/or disturbance tolerant native absent, and high spp diversity a the presence of rare, threatened	e spp absent or virtually nd often, but not always,
		Nearly absent <5% cover (0)			
		Absent (1)		Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	acres)
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) dbh	Minuster	manha Carran Caala	
	Amphibian breeding pools			raphy Cover Scale	
			0 1	Absent Present very small amounts or if r	more common
			2	of marginal quality Present in moderate amounts, bu quality or in small amounts of hi	•
			3	Present in moderate or greater an and of highest quality	
18					

Site: WO	H-253	Į.	Rater(s): BRH	Date: May 10, 2017
0	0	Metric 1. Wetland Ar	ea (size).	
	subtotal	Select one size class and assign score >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20. 10 to <25 acres (4 to <10.1ha 3 to <10 acres (1.2 to <4ha) (0.3 to <3 acres (0.12 to <1.2ha) 0.1 to <0.3 acres (0.04 to <0. <0.1 acres (0.04ha) (0 pts)	2ha) (5 pts) a) (4 pts) (3 pts) na) (2pts)	
1	1	Metric 2. Upland buf	fers and surrounding land use.	
max 14 pts.	subtotal	WIDE. Buffers average 50m MEDIUM. Buffers average 2 NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth or of LOW. Old field (>10 years), MODERATELY HIGH. Resident	elect only one and assign score. Do not double check. (164ft) or more around wetland perimeter (7) 5m to <50m (82 to <164ft) around wetland perimeter (4) 10m to <25m (32ft to <82ft) around wetland perimeter (1) rerage <10m (<32ft) around wetland perimeter (0) Select one or double check and average. Older forest, prairie, savannah, wildlife area, etc. (7) shrub land, young second growth forest. (5) dential, fenced pasture, park, conservation tillage, new fallin pasture, row cropping, mining, construction. (1)	
8	9	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface Perennial surface water (lake 3c. Maximum water depth. Select only >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (7) < 0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	100 year floodpla Between stream/ Part of wetland/u Part of riparian o Semi- to perman Part of riparian o Semi- to perman Part of riparian o Semi- to perman Part of riparian o Part of wetland/u Seasonally inund Seasonally inund	ain (1) //lake and other human use (1) upland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) uted/saturated (3) dated (2) ated in upper 30cm (12in) (1)
16	25	Metric 4. Habitat Alto	eration and Development.	
max 20 pts.	subtotal	 4a. Substrate disturbance. Score one Vone or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) 		
_		Poor (1) 4c. Habitat alteration. Score one or do None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing shrub/sapling rer grazing herbaceous/aqua clearcutting sedimentation	
	25	<u> </u>	selective cutting dredging woody debris removal toxic pollutants nutrient enrichment	ent
last revised 1	reprua	y 200 i jjili		

Site: W	OH-253	Rater((s) : BRH		Date: May 10, 2017
su	25 btotal first pa	ge			
5	30	Metric 5. Special Wetlan	ds.		
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water Category 1 Wetland. See Question	estricted hydro ings) (10) atened or enda fowl habitat or	angered species (10) usage (10)	
1	31	Metric 6. Plant communi	ities, int	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale. Aquatic bed Emergent	<u>0</u> 1	Absent or comprises <0.1ha (0.24 Present and either comprises small vegetation and is of moderate q	all part of wetland's uality, or comprises a
		Shrub Forest Mudflats Open water	2	Present and either comprises sign vegetation and is of moderate q	nificant part of wetland's
		Other 6b. horizontal (plan view) Interspersion.	3	part and is of high quality Present and comprises significant vegetation and is of high quality	
		Select only one.		•	
		High (5)	Narrative D	escription of Vegetation Quality	
		Moderately high(4) Moderate (3)	low	Low spp diversity and/or predoming disturbance tolerant native spec	ies
		Moderately low (2) Low (1) ✓ None (0)	mod	Native spp are dominant compone although nonnative and/or distuction can also be present, and species	rbance tolerant native spp
		6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generally we threatened or endangered spp	v/o presence of rare
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominance of native species and/or disturbance tolerant native absent, and high spp diversity a the presence of rare, threatened	e spp absent or virtually nd often, but not always,
		Nearly absent <5% cover (0)			
		✓ Absent (1)		d Open Water Class Quality	
		6d. Microtopography. Score all present using 0 to 3 scale.	0 1	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres)	eroe)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) dbh		Triight ma (elee delee) et mele	
o Amphibian breeding pools Microtopography Cove		raphy Cover Scale			
			0	Absent	
			1	Present very small amounts or if r of marginal quality	more common
			2	Present in moderate amounts, bu quality or in small amounts of hi	•
			3	Present in moderate or greater an and of highest quality	nounts
31					

Site: WOH-254		Rater(s): BRH	Date: May 10, 2017
1 1	Metric 1. Wetland A	rea (size).	
max 6 pts. subtotal	Select one size class and assign scores (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20 10 to <25 acres (4 to <10.11) 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.2 0.1 to <0.3 acres (0.04 to <0.11) <p><0.1 acres (0.04ha) (0 pts)</p>	0.2ha) (5 pts) na) (4 pts) i (3 pts) 2ha) (2pts)	
1 2	Metric 2. Upland bu	ffers and surrounding land use.	
max 14 pts. subtotal	WIDE. Buffers average 50r MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers a 2b. Intensity of surrounding land use. VERY LOW. 2nd growth or LOW. Old field (>10 years) MODERATELY HIGH. Res	Select only one and assign score. Do not double check. In (164ft) or more around wetland perimeter (7) 25m to <50m (82 to <164ft) around wetland perimeter (4) 25m to <25m (32ft to <82ft) around wetland perimeter (1) 10m to <25m (32ft to <82ft) around wetland perimeter (0) 10m (<32ft) around wetland perimeter (0) 10m Select one or double check and average. 10m older forest, prairie, savannah, wildlife area, etc. (7) 10m shrub land, young second growth forest. (5) 10m idential, fenced pasture, park, conservation tillage, new faller pasture, row cropping, mining, construction. (1)	ow field. (3)
9 11	Metric 3. Hydrology		
max 30 pts. subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface Perennial surface water (lak 3c. Maximum water depth. Select on >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) 3e. Modifications to natural hydrologic None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	te water (3) te or stream) (5) Ity one and assign score. (2) Tregime. Score one or double check and average.	ain (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1)
	Recent of no recovery (1)	weir dredging stormwater input other	
16 27	Metric 4. Habitat Alt	teration and Development.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one / None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) / Fair (3) Poor to fair (2)		
	Poor (1) 4c. Habitat alteration. Score one or d		
27 subtotal this pa	•	Check all disturbances observed mowing shrub/sapling rer herbaceous/aqua sedimentation dredging woody debris removal toxic pollutants shrub/sapling rer herbaceous/aqua sedimentation dredging farming nutrient enrichmatics.	atic bed removal

Site: W	OH-254	Rater	(s): BRH		Date: May 10, 2017
su	27 obtotal first pa	nge			
5	32	Metric 5. Special Wetlan	ds.		
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) ✓ Mature forested wetland (5) Lake Erie coastal/tributary wetland-u Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water Category 1 Wetland. See Question	estricted hydro ings) (10) atened or enda fowl habitat or	angered species (10) usage (10)	
1	33	Metric 6. Plant communi	ities, int	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale. Aquatic bed Emergent Shrub	1	Absent or comprises <0.1ha (0.24 Present and either comprises small vegetation and is of moderate qualificant part but in of law and	all part of wetland's uality, or comprises a
		Forest Mudflats Open water	2	significant part but is of low qua Present and either comprises sign vegetation and is of moderate q part and is of high quality	nificant part of wetland's
		Other	3	Present and comprises significant	part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
		Select only one.			
		High (5)		escription of Vegetation Quality	
		Moderately high(4) Moderate (3)	low	Low spp diversity and/or predoming disturbance tolerant native spec	
		Moderately low (2)	mod	Native spp are dominant compone	
		Low (1)		although nonnative and/or distu	
		✓ None (0)		can also be present, and specie	s diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally v	v/o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	20 0
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominance of native species and/or disturbance tolerant native absent, and high spp diversity a the presence of rare, threatened	e spp absent or virtually nd often, but not always,
		Nearly absent <5% cover (0)			
		Absent (1)		Open Water Class Quality	
		6d. Microtopography.	0 1	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres)	uroo)
		Score all present using 0 to 3 scale. 0 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	40103)
		Standing dead >25cm (10in) dbh		[
	· · · · · · · · · · · · · · · ·		Microtopog	raphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if r of marginal quality	more common
			2	Present in moderate amounts, bu quality or in small amounts of hi	ghest quality
			3	Present in moderate or greater an and of highest quality	nounts
33					

Site: WOH-255	F	Rater(s): BRH	Date: May 10, 2017
2 2	Metric 1. Wetland Ar	ea (size).	
max 6 pts. subtotal	Select one size class and assign score. 550 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20. 10 to <25 acres (4 to <10.1ha 3 to <10 acres (1.2 to <4ha) (0.3 to <3 acres (0.12 to <1.2ha 0.1 to <0.3 acres (0.04 to <0. <0.1 acres (0.04ha) (0 pts)	2ha) (5 pts) a) (4 pts) (3 pts) na) (2pts)	
14 16	Metric 2. Upland buf	fers and surrounding land use.	
max 14 pts. subtotal	✓ WIDE. Buffers average 50m MEDIUM. Buffers average 2 NARROW. Buffers average VERY NARROW. Buffers av 2b. Intensity of surrounding land use. ✓ VERY LOW. 2nd growth or of LOW. Old field (>10 years), and MODERATELY HIGH. Resident	elect only one and assign score. Do not double check. (164ft) or more around wetland perimeter (7) 5m to <50m (82 to <164ft) around wetland perimeter (4) 10m to <25m (32ft to <82ft) around wetland perimeter (1) terage <10m (<32ft) around wetland perimeter (0) Select one or double check and average. Older forest, prairie, savannah, wildlife area, etc. (7) shrub land, young second growth forest. (5) dential, fenced pasture, park, conservation tillage, new fallon pasture, row cropping, mining, construction. (1)	ow field. (3)
19 35	Metric 3. Hydrology.		
max 30 pts. subtotal	3a. Sources of Water. Score all that an High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface Perennial surface water (lake 3c. Maximum water depth. Select only >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (3) Vo.4m (<15.7in) (1) 3e. Modifications to natural hydrologic None or none apparent (12) Recovered (7) Recovering (3)	a water (3) be or stream) (5) cone and assign score. 2) 100 year floodpla Between stream/ Part of wetland/u Part of riparian of Duration inundation/sat Semi- to permane Regularly inunda Seasonally inunda	nin (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1)
	Recent or no recovery (1)	dike road bed/RR trace weir dredging stormwater input other	k
15 50	Metric 4. Habitat Alto	eration and Development.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one Vone or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only of Excellent (7) Very good (6) Vogod (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)		
	4c. Habitat alteration. Score one or do		
50 subtotal this pa	·	Check all disturbances observed mowing grazing clearcutting voody debris removal toxic pollutants shrub/sapling ren herbaceous/aqua sedimentation dredging farming nutrient enrichme	ttic bed removal

Site: W	OH-255	Rater	(s): BRH		Date: May 10, 2017
su	50 btotal first pa	ge			
5	55	Metric 5. Special Wetlan	ds.		
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) ✓ Mature forested wetland (5) Lake Erie coastal/tributary wetland-ru Lake Erie coastal/tributary wetland-ru Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question	estricted hydro ings) (10) atened or end fowl habitat or 1 Qualitative F	angered species (10) usage (10) atting (-10)	
11	66	Metric 6. Plant communi	ities, int	erspersion, microto _l	ography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.247	
		Aquatic bed	1	Present and either comprises small	
		2 Emergent		vegetation and is of moderate qu	
		2 Shrub		significant part but is of low qualit	-
		2 Forest	2	Present and either comprises signif	
		Mudflats		vegetation and is of moderate qu	ality or comprises a small
		Open water		part and is of high quality	
		Other	3	Present and comprises significant p	part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
		Select only one.			
		High (5)		escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predomina	
		Moderate (3)		disturbance tolerant native specie	
		Moderately low (2)	mod	Native spp are dominant componer	
		✓ Low (1)		although nonnative and/or disturb	
		None (0)		can also be present, and species	•
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/	o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species,	
		Extensive >75% cover (-5)		and/or disturbance tolerant native	
		Moderate 25-75% cover (-3)		absent, and high spp diversity an	
		Sparse 5-25% cover (-1)		the presence of rare, threatened,	or endangered spp
		✓ Nearly absent <5% cover (0)			
		Absent (1)		d Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acre	
		1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 a	icres)
		1 Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) dbh			
2 Amphibian breeding pools			graphy Cover Scale		
			0	Absent	
			1	Present very small amounts or if more of marginal quality	
			2	Present in moderate amounts, but quality or in small amounts of hig	_
			3	Present in moderate or greater amo	ounts
				and of highest quality	
66			<u></u>		

Site: WOH-256		Rater(s): BRH	Date: May 10, 2017
1 1	Metric 1. Wetland Ar	rea (size).	
max 6 pts. subtotal	Select one size class and assign score >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20) 10 to <25 acres (4 to <10.1h 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.2 ✓ 0.1 to <0.3 acres (0.04 to <0 <0.1 acres (0.04ha) (0 pts)	.2ha) (5 pts) a) (4 pts) (3 pts) ha) (2pts)	
14 15	Metric 2. Upland buf	fers and surrounding land use.	
max 14 pts. subtotal	✓ WIDE. Buffers average 50m MEDIUM. Buffers average 2 NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth or LOW. Old field (>10 years), MODERATELY HIGH. Resi	elect only one and assign score. Do not double check. (164ft) or more around wetland perimeter (7) 1.5m to <50m (82 to <164ft) around wetland perimeter (4) 1.0m to <25m (32ft to <82ft) around wetland perimeter (1) 1.0m to <25m (32ft) around wetland perimeter (1) 1.0m to <25m (32ft) around wetland perimeter (0) 1.0m to <32ft) around wetland perimeter (0) 1.0m Select one or double check and average. 1.0m toler forest, prairie, savannah, wildlife area, etc. (7) 1.0m shrub land, young second growth forest. (5) 1.0m dential, fenced pasture, park, conservation tillage, new faller pasture, row cropping, mining, construction. (1)	ow field. (3)
18 33	Metric 3. Hydrology.		
max 30 pts. subtotal	✓ None or none apparent (12)	a water (3) be or stream) (5) cy one and assign score. 2) regime. Score one or double check and average. 100 year floodpla Between stream/ Part of wetland/u Part of riparian o Part of wetland/u Part of riparian o Semi- to perman Seasonally inund Seasonally satur	sin (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1)
	Recovered (7) Recovering (3) Recent or no recovery (1)	ditch point source (nor filling/grading dike road bed/RR trace dredging stormwater input other	, I
17 50	Metric 4. Habitat Alt	eration and Development.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)		
	4c. Habitat alteration. Score one or do		
50 subtotal this pa		Check all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants shrub/sapling rer herbaceous/aqua sedimentation dredging farming nutrient enrichma	atic bed removal

Site: W	OH-256	R	ater(s): BRH		Date: May 10, 2017
Oite. W	011 200	170	ater(3). Bian		Date: May 10, 2017
		1			
	50				
su	btotal first pa	」 gge			
_		Metric 5. Special Wet	lands		
5	55	Decide of Opeoidi Wei	ilaiia3.		
max 10 pts.	subtotal	J Check all that apply and score as indicat	ed.		
		Bog (10)			
		Fen (10)			
		Old growth forest (10)			
		✓ Mature forested wetland (5)	land commandatated brid		
		Lake Erie coastal/tributary wet Lake Erie coastal/tributary wet			
		Lake Plain Sand Prairies (Oak	•	ogy (o)	
		Relict Wet Prairies (10)	1 3 / (/		
		Known occurrence state/federa		. ,	
		Significant migratory songbird/		- , ,	
		Category 1 Wetland. See Que		= ' '	-
2	57	Metric 6. Plant comm	iunities, inte	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	
		Score all present using 0 to 3 scale. Aquatic bed	<u>0</u> 1	Absent or comprises <0.1ha (0.24) Present and either comprises small	
		o Emergent	ı	vegetation and is of moderate q	
		Shrub		significant part but is of low qua	
		0 Forest	2	Present and either comprises sign	nificant part of wetland's
		Mudflats		vegetation and is of moderate q	uality or comprises a small
		Open water	3	part and is of high quality	
		Other 6b. horizontal (plan view) Interspersion.	3	Present and comprises significant vegetation and is of high quality	
		Select only one.		Togotation and to or riight quality	
		High (5)	Narrative De	escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predomin	
		Moderate (3)		disturbance tolerant native spec	
		Moderately low (2) ✓ Low (1)	mod	Native spp are dominant compone although nonnative and/or distu	
		None (0)		can also be present, and specie	• • • • • • • • • • • • • • • • • • • •
		6c. Coverage of invasive plants. Refer		moderately high, but generally v	•
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species	
		Extensive >75% cover (-5) Moderate 25-75% cover (-3)		and/or disturbance tolerant native absent, and high spp diversity a	
		Sparse 5-25% cover (-1)		the presence of rare, threatened	
		Nearly absent <5% cover (0)			,
		✓ Absent (1)	Mudflat and	Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	s <u>1</u>	Low 0.1 to <1ha (0.247 to 2.47 ac	
		 Vegetated hummucks/tussuck Coarse woody debris >15cm (Moderate 1 to <4ha (2.47 to 9.88 High 4ha (9.88 acres) or more	acres)
		Standing dead >25cm (10in) d	, <u> </u>	Trigit ma (elec derec) el mere	
		Amphibian breeding pools		raphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if r of marginal quality	
			2	Present in moderate amounts, but quality or in small amounts of hi	•
			3	Present in moderate or greater an	
				and of highest quality	

Site: W	OH-257		Rater(s): BRH	Date: May 10, 2017
2	2	Metric 1. Wetland A	rea (size).	
max 6 pts.	subtotal	Select one size class and assign scor >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <2) 10 to <25 acres (4 to <10.1) 3 to <10 acres (1.2 to <4ha ✓ 0.3 to <3 acres (0.12 to <1. 0.1 to <0.3 acres (0.04 to <1. <0.1 acres (0.04ha) (0 pts)	0.2ha) (5 pts) na) (4 pts)) (3 pts) 2ha) (2pts)	
14	16	Metric 2. Upland bu	ffers and surrounding land use) .
max 14 pts.	subtotal	WIDE. Buffers average 50r MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers a 2b. Intensity of surrounding land use. VERY LOW. 2nd growth or LOW. Old field (>10 years) MODERATELY HIGH. Res	Select only one and assign score. Do not double check. In (164ft) or more around wetland perimeter (7) 25m to <50m (82 to <164ft) around wetland perimeter (4) 25m to <25m (32ft to <82ft) around wetland perimeter (4) 25m to <25m (32ft to <82ft) around wetland perimeter (7) 25m (32ft) around wetland perimeter (7) 25m (32ft) around wetland perimeter (9) 25m (32ft) around wetland perimeter (10) 25m (32ft) around perimeter (10) 25m	,
19	35	Metric 3. Hydrology		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface Perennial surface water (lal 3c. Maximum water depth. Select on >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) ✓ 0.4m (<15.7in) (1) 3e. Modifications to natural hydrologi ✓ None or none apparent (12 Recovered (7) Recovering (3) Recent or no recovery (1)	to e water (3) to e water (3) to e or stream) (5) Ity one and assign score. (2) to regime. Score one or double check and average. 100 year flood, Between stream Part of wetland Part of riparian Semi- to perma Regularly inunc Seasonally inunc Seasonally sational stream.	plain (1) n/lake and other human use (1) n/lake and other human use (1) n/lake and other human use (1) n/upland (e.g. forest), complex (1) or upland corridor (1) aturation. Score one or dbl check nently inundated/saturated (4) lated/saturated (3) ndated (2) urated in upper 30cm (12in) (1) onstormwater)
15	50	Metric 4. Habitat Al	teration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score on / None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) / Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	e or double check and average.	
Ī		4c. Habitat alteration. Score one or construction.	Check all disturbances observed mowing shrub/sapling r grazing herbaceous/aq clearcutting sedimentation	emoval uatic bed removal
su	50 btotal this pa	ge	✓ selective cutting dredging woody debris removal toxic pollutants dredging farming nutrient enrichr	nent
last revised	1 Februa	y 2001 jjm		

Site: W	OH-257	Rater	(s): BRH		Date: May 10, 2017
su	50 btotal first pa		`		
5	55	Metric 5. Special Wetlan	ds.		
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-u Lake Erie coastal/tributary wetland-ru Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question	estricted hydro ings) (10) atened or enda fowl habitat or	angered species (10) usage (10)	
11	66	Metric 6. Plant commun	ities, int	erspersion, microto	pography.
max 20 pts.	subtotal	J 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.24	71 acres) contiguous area
		Aquatic bed	1	Present and either comprises sma	
		2 Emergent		vegetation and is of moderate q	
		2 Shrub 2 Forest	2	significant part but is of low qua Present and either comprises sign	
		Mudflats	2	vegetation and is of moderate q	
		Open water		part and is of high quality	,
		Other	3	Present and comprises significant	part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
		Select only one.	Nametice D	and in the second secon	
		High (5) Moderately high(4)	low	escription of Vegetation Quality Low spp diversity and/or predomin	nance of nonnative or
		Moderate (3)	1000	disturbance tolerant native spec	
		Moderately low (2)	mod	Native spp are dominant compone	
		✓ Low (1)		although nonnative and/or distu	• • • • • • • • • • • • • • • • • • • •
		None (0)		can also be present, and specie	•
		6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generally we threatened or endangered spp	v/o presence of rare
		or deduct points for coverage	high	A predominance of native species	with nonnative spn
		Extensive >75% cover (-5)	9.1	and/or disturbance tolerant nativ	
		Moderate 25-75% cover (-3)		absent, and high spp diversity a	
		Sparse 5-25% cover (-1)		the presence of rare, threatened	d, or endangered spp
		✓ Nearly absent <5% cover (0)	BA	I Ou ou Water Olana Oualite	
		Absent (1) 6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 acres)	res)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
		1 Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) dbh			
		2 Amphibian breeding pools	Microtopog 0	raphy Cover Scale Absent	
			1	Present very small amounts or if r	nore common
			•	of marginal quality	
			2	Present in moderate amounts, bu quality or in small amounts of hi	
			3	Present in moderate or greater an	
66				and of highest quality	

Site: W	OH-259	Rate	er(s): BRH	Date: May 11, 2	2017
2	2	Metric 1. Wetland Area	(size).		
max 6 pts.	subtotal	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) (4 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2 0.1 to <0.3 acres (0.04 to <0.12ha) <0.1 acres (0.04ha) (0 pts)	pts) (c) (c) (c) (c)		
1	3	Metric 2. Upland buffer	s and surroundi	ng land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select of WIDE. Buffers average 50m (164 MEDIUM. Buffers average 25m to NARROW. Buffers average 10m VERY NARROW. Buffers average 2b. Intensity of surrounding land use. Sele VERY LOW. 2nd growth or older LOW. Old field (>10 years), shrub MODERATELY HIGH. Residentia HIGH. Urban, industrial, open pas	ft) or more around wetland per co <50m (82 to <164ft) around voto <25m (32ft to <82ft) around voto <25m (32ft to <82ft) around wetland of the condition of the	rimeter (7) vetland perimeter (4) I wetland perimeter (1) I perimeter (0) erage. ife area, etc. (7) prest. (5) rvation tillage, new fallow field. (3)	
21	24	Metric 3. Hydrology.			
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water Perennial surface water (lake or si 3c. Maximum water depth. Select only one > 0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regin	er (3) tream) (5) 3d. I and assign score.	Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other huma Part of wetland/upland (e.g. forest), cr Part of riparian or upland corridor (1) Curation inundation/saturation. Score one of Semi- to permanently inundated/saturated (3) Regularly inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm (4) and average.	omplex (1) or dbl check rated (4)
		Recovered (7) Recovering (3) Recent or no recovery (1)	ck all disturbances observed ditch tile dike weir stormwater input	point source (nonstormwater) filling/grading road bed/RR track dredging other	
14	38	Metric 4. Habitat Altera	tion and Develo	pment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or do None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one a Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)			
		4c. Habitat alteration. Score one or double			
	38	Recovered (6) Recovering (3) Recent or no recovery (1)	ck all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling removal herbaceous/aquatic bed removal sedimentation dredging farming nutrient enrichment	
last revised	ı Februa	y zou i jjm			

Site: W	OH-259	Rater	(s): BRH		Date: May 11, 2017
	38				
su	btotal first pa	ge			
0	38	Metric 5. Special Wetlan	ds.		
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-relate Erie coastal/tributary wetland-relate Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water Category 1 Wetland. See Question	estricted hydro ings) (10) atened or enda fowl habitat or	angered species (10) usage (10)	
0	38	Metric 6. Plant communi	ities, int	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	
		Score all present using 0 to 3 scale. Aquatic bed Emergent Shrub	<u>0</u> 1	Absent or comprises <0.1ha (0.24 Present and either comprises sma vegetation and is of moderate q significant part but is of low qual	all part of wetland's uality, or comprises a
		Forest Mudflats Open water	2	Present and either comprises sign vegetation and is of moderate q part and is of high quality	nificant part of wetland's
		Other	3	Present and comprises significant	part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
		Select only one.	Name the D	and the state of the sector of	
		High (5) Moderately high(4) Moderate (3)	low	Escription of Vegetation Quality Low spp diversity and/or predomind disturbance tolerant native spec	
		Moderately low (2) ✓ Low (1) None (0)	mod	Native spp are dominant compone although nonnative and/or distur- can also be present, and specie	rbance tolerant native spp
		6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generally v threatened or endangered spp	•
		or deduct points for coverage Extensive >75% cover (-5) ✓ Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominance of native species and/or disturbance tolerant native absent, and high spp diversity a the presence of rare, threatened	e spp absent or virtually nd often, but not always,
		Nearly absent <5% cover (0)	Mudfleten	d Onen Water Class Quality	
		Absent (1) 6d. Microtopography.	Wudflat and	Dopen Water Class Quality Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	res)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) dbh			
		1 Amphibian breeding pools	Microtopog	raphy Cover Scale	
			1	Absent Present very small amounts or if r	nore common
			2	of marginal quality Present in moderate amounts, but	•
			3	quality or in small amounts of hi Present in moderate or greater an and of highest quality	
38				and or mignoot quality	

Site: WOH-260		Rater(s): BRH		Date: May 11, 2017
0 0	Metric 1. Wetland A	rea (size).		
max 6 pts. subtotal	Select one size class and assign sco) 20,2ha) (5 pts) ha) (4 pts) ı) (3 pts) ,2ha) (2pts) :0,12ha) (1 pt)		
1 1	Metric 2. Upland bเ	iffers and surroundi	ng land use.	
max 14 pts. subtotal	WIDE. Buffers average 50 MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land use VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	Select only one and assign score. Dom (164ft) or more around wetland per 25m to <50m (82 to <164ft) around ve 10m to <25m (32ft to <82ft) around average <10m (<32ft) around wetland. Select one or double check and aver older forest, prairie, savannah, wildli), shrub land, young second growth fosidential, fenced pasture, park, consepen pasture, row cropping, mining, co	rimeter (7) vetland perimeter (4) d wetland perimeter (1) d perimeter (0) erage. ife area, etc. (7) prest. (5) rvation tillage, new fallo	ow field. (3)
7 8	Metric 3. Hydrology			
max 30 pts. subtotal	3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surfa Perennial surface water (la 3c. Maximum water depth. Select o >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in V <0.4m (<15.7in) (1) 3e. Modifications to natural hydrolog None or none apparent (12 Recovered (7) Recovering (3) Recent or no recovery (1)	ice water (3) ke or stream) (5) 3d. Inly one and assign score. (2) ic regime. Score one or double check	Part of wetland/up Part of riparian or Duration inundation/sate Semi- to permane Regularly inundat Seasonally inund Seasonally satura	in (1) lake and other human use (1) pland (e.g. forest), complex (1) pland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1)
7 15	Metric 4. Habitat Al	teration and Develo		
max 20 pts. subtotal	4a. Substrate disturbance. Score or None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select onl Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)			
	4c. Habitat alteration. Score one or			
15 subtotal this pa	•	Check all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal

Site: W	OH-260	R	ater(s): BRH		Date: May 11, 2017
		-	2001(0): =::::		Dato: may 11, 2011
	15				
	15				
su	btotal first pa	ge			
0	15	Metric 5. Special Wet	lands.		
max 10 pts.	subtotal	Check all that apply and score as indicat	ed.		
		Bog (10)			
		Fen (10) Old growth forest (10)			
		Mature forested wetland (5)			
		Lake Erie coastal/tributary wet			
		Lake Erie coastal/tributary wet	•	ogy (5)	
		Relict Wet Prairies (10)	Openings) (10)		
		Known occurrence state/feder	al threatened or enda	ngered species (10)	
		Significant migratory songbird			
		Category 1 Wetland. See Que		= ' '	_
-3	12	Metric 6. Plant comm	iunities, inte	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	174
		Score all present using 0 to 3 scale. Aquatic bed	0	Absent or comprises <0.1ha (0.24 Present and either comprises small	
		0 Emergent	·	vegetation and is of moderate q	
		Shrub		significant part but is of low qua	
		Forest	2	Present and either comprises sign	
		Mudflats Open water		vegetation and is of moderate q part and is of high quality	uality or comprises a small
		Other	3	Present and comprises significant	t part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	1
		Select only one.	Namatica De	and the second s	
		High (5) Moderately high(4)	low	escription of Vegetation Quality Low spp diversity and/or predomin	nance of nonnative or
		Moderate (3)	1011	disturbance tolerant native spec	
		Moderately low (2)	mod	Native spp are dominant compone	
		Low (1)		although nonnative and/or distu	• • • • • • • • • • • • • • • • • • • •
		✓ None (0) 6c. Coverage of invasive plants. Refer		can also be present, and specie moderately high, but generally was	•
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species	
		Extensive >75% cover (-5)		and/or disturbance tolerant nativ	
		✓ Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)		absent, and high spp diversity a the presence of rare, threatened	
		Nearly absent <5% cover (0)		The presence of fare, threatened	a, or cridarigered app
		Absent (1)	Mudflat and	Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale. Vegetated hummucks/tussuck	s <u>1</u>	Low 0.1 to <1ha (0.247 to 2.47 ac Moderate 1 to <4ha (2.47 to 9.88	
		Coarse woody debris >15cm (High 4ha (9.88 acres) or more	acres)
		Standing dead >25cm (10in) d	, <u> </u>		
		Amphibian breeding pools	Microtopog	raphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if r of marginal quality	nore common
			2	Present in moderate amounts, bu	t not of highest
				quality or in small amounts of hi	ghest quality
	1		3	Present in moderate or greater ar	mounts
				and of highest quality	

Site: WOH-262	Rater(s): BRH	Date: May 11, 2017
2 2	Metric 1. Wetland Area (size).	
max 6 pts. subtotal	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)	
14 16	Metric 2. Upland buffers and surrounding land use.	
max 14 pts. subtotal	2a. Calculate average buffer width. Select only one and assign score. 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 and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow tilling. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
18 34	Metric 3. Hydrology.	
max 30 pts. subtotal	✓ Precipitation (1) ✓ Part of wetland/u Seasonal/Intermittent surface water (3) ✓ Part of riparian o Perennial surface water (lake or stream) (5) 3d. Duration inundation/sat 3c. Maximum water depth. Select only one and assign score. Semi- to perman >0.7 (27.6in) (3) ✓ Regularly inunda 0.4 to 0.7m (15.7 to 27.6in) (2) Seasonally inunda ✓ Seasonally inunda Seasonally satura 3e. Modifications to natural hydrologic regime. Score one or double check and average. Check all disturbances observed point source (nor filling/grading Recovered (7) ditch filling/grading road bed/RR trad dredging Recent or no recovery (1) weir dredging dredging stormwater input other	ain (1) //lake and other human use (1) //lake and other human use (1) //lake and other human use (1) // upland (e.g. forest), complex (1) r upland corridor (1) // uration. Score one or dbl check ently inundated/saturated (4) // ited/saturated (3) // dated (2) ated in upper 30cm (12in) (1) // instormwater)
14 48	Metric 4. Habitat Alteration and Development.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	
	4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Check all disturbances observed	
48 subtotal this pa	Recovered (6) Recovering (3) Recent or no recovery (1)	atic bed removal

Site: W	OH-262	Rater(s): BRH		Date: May 11, 2017
	48 btotal first pa		,		
5	53	Metric 5. Special Wetland	ds.		
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Auture forested wetland (5) Lake Erie coastal/tributary wetland-ur Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Openi Relict Wet Prairies (10) Known occurrence state/federal threa Significant migratory songbird/water for Category 1 Wetland. See Question 1	estricted hydrolo ngs) (10) atened or endar fowl habitat or u	ogy (5) ngered species (10) usage (10)	
14	67	Metric 6. Plant communi	ties, inte	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation C	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.24	71 acres) contiguous area
		Aquatic bed	1	Present and either comprises sma	·
		2 Emergent		vegetation and is of moderate qu	uality, or comprises a
		2 Shrub		significant part but is of low qual	
		2 Forest	2	Present and either comprises sign	•
		Mudflats		vegetation and is of moderate qu	
		Open water		part and is of high quality	, , , , , , , , , , , , , , , , , , , ,
		Other	3	Present and comprises significant	nart or more of wetland's
			3		
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
		Select only one.			
		High (5)		scription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predomir	
		Moderate (3)		disturbance tolerant native spec	
		Moderately low (2)	mod	Native spp are dominant compone	ent of the vegetation,
		✓ Low (1)		although nonnative and/or distu	rbance tolerant native spp
		None (0)		can also be present, and specie	s diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally v	v/o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species	, with nonnative spp
		Extensive >75% cover (-5)	Ü	and/or disturbance tolerant nativ	
		Moderate 25-75% cover (-3)		absent, and high spp diversity a	• •
		Sparse 5-25% cover (-1)		the presence of rare, threatened	
		✓ Nearly absent <5% cover (0)	-	and production of rare, unroaterior	i, or oridarigoroa opp
		Absent (1)	Mudflat and	Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	uroo)
		1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
			3		acres)
		2 Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		2 Standing dead >25cm (10in) dbh	BA! 4		
		2 Amphibian breeding pools		aphy Cover Scale	
			0	Absent	
			1 	Present very small amounts or if n of marginal quality	
			2	Present in moderate amounts, but quality or in small amounts of his	_
			3	Present in moderate or greater an	nounts
0.7				and of highest quality	
, . 7	1			· · · · · · · · · · · · · · · · · · ·	

Site: WOH-263	Rater(s): BRH	Date: May 11, 2017
2 2	Metric 1. Wetland Area (size).	
max 6 pts. subtotal	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)	
8 10	Metric 2. Upland buffers and surrounding land us	e.
max 14 pts. subtotal	2a. Calculate average buffer width. Select only one and assign score. 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 (9) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) Intensity of surrounding land use. Select one or double check and average. ✓ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new ✓ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	(1)
18 28	Metric 3. Hydrology.	
max 30 pts. subtotal	Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3d. Duration inundation. 3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) V <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime. Score one or double check and average. Very None or none apparent (12) Check all disturbances observed	dplain (1) am/lake and other human use (1) ad/upland (e.g. forest), complex (1) n or upland corridor (1) /saturation. Score one or dbl check nanently inundated/saturated (4) ndated/saturated (3) undated (2) aturated in upper 30cm (12in) (1)
	weir dredging stormwater input dredging	
11 39	Metric 4. Habitat Alteration and Development.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one or double check and average. Vone or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Vonderately good (4) Fair (3) Poor to fair (2)	
	Poor (1) 4c. Habitat alteration. Score one or double check and average.	
39 subtotal this pa	Recent or no recovery (1) Recent or no recovery (1) clearcutting selective cutting woody debris removal toxic pollutants sedimentation dredging farming nutrient enrich	nquatic bed removal

Site: W	OH-263	Rater(s): BRH	Date: May 11, 2017
	39]		
su	btotal first pa	Metric 5. Special Wetlan	de	
5	44	Weth C 3. Special Wethan	us.	
max 10 pts.	subtotal	Check all that apply and score as indicated.		
		Bog (10) Fen (10)		
		Old growth forest (10)		
		✓ Mature forested wetland (5)		
		Lake Eric coastal/tributary wetland-u		
		Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Open		logy (5)
		Relict Wet Prairies (10)	3-7 (- 7	
		Known occurrence state/federal threa		
		Significant migratory songbird/water Category 1 Wetland. See Question		
		, <u> </u>		
11	55	wether 6. Plant communi	illes, inte	erspersion, microtopography.
max 20 pts.	subtotal] 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
		Aquatic bed	1	Present and either comprises small part of wetland's
		2 Emergent		vegetation and is of moderate quality, or comprises a
		2 Shrub 2 Forest	2	significant part but is of low quality Present and either comprises significant part of wetland's
		Mudflats	۷	vegetation and is of moderate quality or comprises a small
		Open water		part and is of high quality
		Other	3	Present and comprises significant part, or more, of wetland's
		6b. horizontal (plan view) Interspersion. Select only one.		vegetation and is of high quality
		High (5)	Narrative Do	escription of Vegetation Quality
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
		Moderate (3)		disturbance tolerant native species
		Moderately low (2) ✓ Low (1)	mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp
		None (0)		can also be present, and species diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp
		or deduct points for coverage Extensive >75% cover (-5)	high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
		✓ Nearly absent <5% cover (0)		10 W 1 O B
		Absent (1) 6d. Microtopography.	0	Open Water Class Quality Absent <0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		1 Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
		Standing dead >25cm (10in) dbh Amphibian breeding pools	Microtopog	raphy 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
	1		3	Present in moderate or greater amounts
				and of highest quality

Site:	WOH-26	4	Rater(s):	Ben Hess	Date:	December 4, 2017
2	2	Metric 1. Wetland Area (size).	Project:	Apex Republic		
max 6 pts.	subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pt) 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) (2 pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)	rs)			
14	16	Metric 2. Upland buffers and su	rrounding	land use.		
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only of a WIDE. Buffers average 50m (164ft) or MEDIUM. Buffers average 25m to <50 NARROW. Buffers average 10m to <25 VERY NARROW. Buffers average <10m very NARROW. Buf	one and assign some are around wom (82 to <164f 5m (32ft to <82ft) around e or double chett, prairie, savan, young second ed pasture, pari	core. Do not double check vetland perimeter (7'; t) around wetland perimeteft) around wetland perimeteft) around wetland perimetef (0'; ck and average nah, wildlife area, etc. (7'; growth forest. (5'; k, conservation tillage, new	er (4) eer (1)	
26	42	Metric 3. Hydrology				
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) x Seasonal/Intermittent surface water (3) Perennial surface water (lake or strear stream) 3c. Maximum water depth. Select only one and >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) x <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime.	m) (5) assign score.	x Part of wetla Part of ripar 3d. Duration inundation/ x Semi- to per Regularly into Seasonally in Seasonally souble check and average	odplain (1) eam/lake and other and/upland (e.g. for- ian or upland corrid saturation. Score o manently inundated undated/saturated (1) aturated in upper 30 cce (nonstormwater ding	est), complex (1) or (1) ne or dbl check. d/saturated (4) (3) 0cm (12in) (1)
			stormwater ir			
14	56	Metric 4. Habitat Alteration and D	evelopmer	nt.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double x None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and an excellent (7) Very good (6) Good (5) x Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double checking the content of	issign score.	es observe <u>d</u>	ling removal	
S	56 subtotal this page	Recovering (3) Recent or no recovery (1) X	grazing clearcutting selective cutti woody debris toxic pollutan	sedimenta ing dredging removal farming	us/aquatic bed remo ation nrichment	oval

Site:	WOH-26	4	Rater(s):	Ben Hess	Date:	December 4, 2017
	9		Site:	Apex Republic		
O max 10 pt	Subtotal thi O ts subtotal	Metric 5. Special Wetlands Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10)				
		Mature forested wetland (5) Lake Erie coastal/tributary wetland-ur Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Opening: Relict Wet Prairies (10) Known occurrence state/federal threa Significant migratory songbird/water f Category 1 Wetland. See Question 1 (2) Not Applicable (0)	stricted hydrolo s) (10) Itened or endan Towl habitat or u	gy (5) gered species (10) isage (10)		
9	9	Matria C. Diant communities into				
	ts subtotal	Metric 6. Plant communities, inter	•	nicrotopograny. Immunity Cover Scale		
max 20 p	is subtotal	Score all present using 0 to 3 scale.	vegetation CC		ses <0.1ha (0.2471	acres) contiguous area
		Aquatic bed 1 Emergent 1 Shrub	1	Present and either vegetation ar significant pa	r comprises small p nd is of moderate q rt but is of low qua	part of wetland's quality, or comprises a ulity
		2 Forest Mudflats Open water	2	vegetation ar part and is of	nd is of moderate q high quality	ant part of wetland's quality or comprises a small
		Other 6b. Horizontal (plan view) Interspersion.	3		rises significant pand is of high quality	rt, or more, of wetland's
		Select only one.	Nametica Dea	:ti	L .	
		High (5) Moderately high (4)		cription of Vegetation Qualit		nce of nonnative or
		x Moderate (3)	low		olerant native spec	
		Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	although non can also be p moderately h	resent, and species	of the vegetation, urbance tolerant native spp diversity moderate to w/o presence of rare
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominance of and/or distur absent, and h	nigh spp diversity a	ith nonnative spp ive spp absent or virtually nd often, but no always, d, or endangered spp
		Nearly absent <5% cover (0) x Absent (1)	Mudflat and (Open Water Class Quality		
		6d. Microtopography.	0	Absent < 0.1ha (0.2		
		Score all present using 0 to 3 scale. Vegetated hummocks/tussocks	1	Present very small of marginal q	uality	
		O Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	2		ate amounts, but n small amounts of h	0
		1 Amphibian breading pools	3	Present in modera and of highes	ate or greater amo	unts
	most recent ORAN	(max 100 pts) M Score Calibration Report for the scoring breakpoints between wet	tland categories at th	e following address: http://www.epa	state.oh.us/dsw/401/40	1.html
Commen	15:					

Site:	WOH-26	5	Rater(s):	Ben Hess	Date:	December 4, 2017
1 max 6 pts.	1 subtotal	Metric 1. Wetland Area (size). Selectone size class and assign score.	Project:	Apex Republic		
		>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 p 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) (2 pts x)			
14	15	Metric 2. Upland buffers and su	ırrounding	land use.		
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only width. Select only width. Select only of the width of the wid	one and assign s r more around v 0m (82 to <164f .5m (32ft to <82 m (<32ft) around ee or double che st, prairie, savan I, young second ded pasture, par	core. Do not double check vetland perimeter (7); t) around wetland perimeter (t) around wetland perimeter (d) ck and average nah, wildlife area, etc. (7) growth forest. (5) k, conservation tillage, new to vetland perimeter (6); ck and average nah, wildlife area, etc. (7) growth forest. (5)	er (1	
22	37	Metric 3. Hydrology				
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) x Seasonal/Intermittent surface water (x) Perennial surface water (lake or strea		x Part of wetla	dplain (1) am/lake and other nd/upland (e.g. fore an or upland corride	est), complex (1) or (1)
		3c. Maximum water depth. Select only one and >0.7 (27.6in) (3) x 0.4 to 0.7m (15.7 to 27.6in) (2) <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime.	_	Regularly inu x Seasonally in Seasonally sa	nanently inundated ndated/saturated (undated (2) turated in upper 30	3)
		None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1)	all disturbances ditch tile dike weir stormwater ir	observed point source filling/grad road bed/R dredging		
12	49	Metric 4. Habitat Alteration and D	Developmer	nt.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double None or none apparent (4) x Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and a Excellent (7) Very good (6) Good (5) Moderately good (4)	check and aver			
	49	x Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double che None or none apparent (9) x Recovered (6) Recovering (3) Recent or no recovery (1)	k all disturbance mowing grazing clearcutting selective cutti woody debris	shrub/sapli herbaceou: sedimental dredging removal farming		oval
S	subtotal this page		toxic pollutan	ts nutrient en	mannent	

Site:	WOH-26	5	Rater(s):	Ben Hess	Date:	December 4, 2017
	2		Site:	Apex Republic		
O max 10 pt	O ss subtotal	Metric 5. Special Wetlands Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-uni Lake Erie coastal/tributary wetland-res Lake Plain Sand Prairies (Oak Openings Relict Wet Prairies (10) Known occurrence state/federal threat Significant migratory songbird/water for Category 1 Wetland. See Question 1 Q x Not Applicable (0)	tricted hydrolo) (10) tened or endan owl habitat or u	gy (5) gered species (10) ssage (10)		
2	2	Metric 6. Plant communities, inter	spersion. n	nicrotopograhy.		
max 20 pt	s subtotal	6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale. Aquatic bed Emergent Shrub	•	mmunity Cover Scale Absent or compris Present and either vegetation an	comprises small	quality, or comprises a
		0 Forest Mudflats Open water Other	2	Present and either vegetation an part and is of	comprises significed is of moderate of high quality	cant part of wetland's quality or comprises a smal art, or more, of wetland's
		6b. Horizontal (plan view) Interspersion. Select only one.	3	vegetation an	d is of high quality	y wettand :
		High (5) Moderately high (4)		cription of Vegetation Qualit		nce of nonnative or
		Moderately low (2) x Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	disturbance to Native spp are dor although non can also be pr moderately hi	olerant native spe minant componen native and/or dist esent, and specie	
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominance o and/or disturl absent, and h	f native species, w bance tolerant nat igh spp diversity a	vith nonnative spp tive spp absent or virtually and often, but no always, ad, or endangered spp
		Nearly absent <5% cover (0) x Absent (1)		pen Water Class Quality		
		6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummocks/tussocks	1	Absent <0.1ha (0.2 Present very small of marginal qu	amounts or if mo	re common
		O Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	2	Present in modera		
		O Amphibian breading pools	3	Present in modera and of highes		ounts
51		(max 100 pts) A Score Calibration Report for the scoring breakpoints between wetl	and categories at th	e following address: http://www.epa.	state.oh.us/dsw/401/40	D1.html
Comment	s:					

Site:	WOH-26	6	Rater(s):	Ben Hess	Date:	December 4, 2017
O max 6 pts.	0 subtotal	Metric 1. Wetland Area (size). Select one size class and assign score.	Project:	Apex Republic		
шах б різ.	Subtotal	>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pt) 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) (2 pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 x <0.1 acres (0.04ha) (0 pts))			
14	14	Metric 2. Upland buffers and su	ırrounding	land use.		
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only of a WIDE. Buffers average 50m (164ft) of MEDIUM. Buffers average 25m to <50 NARROW. Buffers average 10m to <2 VERY NARROW. Buffers average <10r 2b. Intensity of surrounding land use. Select on X VERY LOW. 2nd growth or older fores LOW. Old field (>10 years), shrubland MODERATELY HIGH. Residential, fend HIGH. Urban, industrial, open pasture	one and assign s r more around w 0m (82 to <164f .5m (32ft to <82 m (<32ft) around ee or double che st, prairie, savan I, young second ded pasture, pari	core. Do not double check vetland perimeter (7); t) around wetland perimeter (t) around wetland perimeter (d) ck and average nah, wildlife area, etc. (7) growth forest. (5) k, conservation tillage, new to vetland perimeter (6); ck and average nah, wildlife area, etc. (7) growth forest. (5)	er (1	
20	34	Metric 3. Hydrology				
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) x Seasonal/Intermittent surface water (Perennial surface water (lake or strea	m) (5)	x Part of wetlan Part of riparia 3d. Duration inundation/s	dplain (1) am/lake and other nd/upland (e.g. for an or upland corrid aturation. Score o	est), complex (1) lor (1) one or dbl check
		3c. Maximum water depth. Select only one and >0.7 (27.6in) (3)	_	x Regularly inu Seasonally in Seasonally sa	nanently inundated ndated/saturated (undated (2) turated in upper 30	(3)
		x None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	all disturbances ditch tile dike weir stormwater ir	observed point source filling/grad road bed/R dredging)
17	51	Metric 4. Habitat Alteration and D	Developmer	nt.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double x None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	•			
		4b. Habitat development. Select only one and a Excellent (7) Very good (6) Good (5) X Moderately good (4) Fair (3)	assign score.			
		Recovered (6)	k all disturbance mowing	shrub/sapli	ing removal	nual .
S	51	Recovering (3) Recent or no recovery (1)	grazing clearcutting selective cutti woody debris toxic pollutan	sedimental dredging removal farming)VdI

Site:	WOH-26	66	Rater(s):	Ben Hess	Date:	December 4, 2017
	2		Site:	Apex Repul	alic	
	subtotal thi	s nage	Site.	Арех кериі	JIIC	
		5 page				
0	0	Metric 5. Special Wetlands				
nax 10 p	ts subtotal	Check all that apply and score as indicated.				
		Bog (10) Fen (10)				
		Old growth forest (10)				
		Mature forested wetland (5)				
		Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland-				
		Lake Plain Sand Prairies (Oak Openi		ogy (o)		
		Relict Wet Prairies (10)				
		Known occurrence state/federal the Significant migratory songbird/water)'	
		Category 1 Wetland. See Question				
		x Not Applicable (0)		,		
2	2					
2		Metric 6. Plant communities, int	erspersion, r	nicrotopogra	nhy.	
nax 20 p	ts subtotal	6a. Wetland Vegetation Communities.		ommunity Cover S		
		Score all present using 0 to 3 scale. Aquatic bed	0		or comprises <0.1ha (0.2471 t and either comprises small p	
		0 Emergent	1		getation and is of moderate q	
		Shrub		sig	nificant part but is of low qua	lity
		0 Forest Mudflats	2		t and either comprises signific getation and is of moderate q	
		Open water	2		rt and is of high quality	dailty of comprises a small
		Other	3	Present	t and comprises significant pa	
		6b. Horizontal (plan view) Interspersion. Select only one.		ve	getation and is of high quality	
		High (5)	Narrative Des	cription of Vegeta	ation Quality	
		Moderately high (4)	low		p diversity and/or predomina	
		Moderate (3) Moderately low (2)		dis	sturbance tolerant native spec spp are dominant component	
		x Low (1)			hough nonnative and/or distu	
		None (0)	mod	l ca	n also be present, and species	diversity moderate to
		6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add			oderately high, but generally v reatened or endangered spp	w/o presence of rare
		or deduct points for coverage	-		ominance of native species, w	ith nonnative spp
		Extensive >75% cover (-5)	high		d/or disturbance tolerant nat	
		Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	J	ар	sent, and high spp diversity a e presence of rare, threatened	
		Nearly absent <5% cover (0)		1 (1)	e presence or rare, uncatelled	a, or chadingered app
		x Absent (1)		Open Water Class		
		6d. Microtopography. Score all present using 0 to 3 scale.	0		<0.1ha (0.247 acres) t very small amounts or if more	re common
		Vegetated hummocks/tussocks	1	of	marginal quality	
		O Coarse woody debris >15cm (6in)	2		t in moderate amounts, but no	
		Standing dead >25cm (10in) dbh O Amphibian breading pools			ality or in small amounts of hit in moderate or greater amou	
		a mp.ma.an a. caamg pools	3		d of highest quality	
	7					
53	Grand Tota	(max 100 pts)				
<u> </u>		(max 100 pts)				
-fk ··		A Course Collingation Deposit for the		a fallanda a 11	the House and the house the	4 hamil
efer to the	most recent ORAI	M Score Calibration Report for the scoring breakpoints between	wetland categories at th	ne following address: ht	tp://www.epa.state.oh.us/dsw/401/40	1.html
ommen	ts:					

Site:	WOH-26	7	Rater(s):	Ben Hess	Date:	December 5, 2017
1 max 6 pts.	1 subtotal	Metric 1. Wetland Area (size). Select one size class and assign score.	Project:	Apex Republic		
		>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pt) 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) (2 pts) x				
14	15	Metric 2. Upland buffers and su	rrounding	land use.		
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only o X WIDE. Buffers average 50m (164ft) or MEDIUM. Buffers average 25m to <50 NARROW. Buffers average 10m to <25 VERY NARROW. Buffers average <10m 2b. Intensity of surrounding land use. Select one X VERY LOW. 2nd growth or older forest LOW. Old field (>10 years), shrubland, MODERATELY HIGH. Residential, fence HIGH. Urban, industrial, open pasture	ne and assign somore around wim (82 to <164ff som (32ft to <82ft) arounded or could be or double cheet, prairie, savan young second ed pasture, parlied	core. Do not double check etland perimeter (7): c) around wetland perimeter (4): t) around wetland perimeter (6): wetland perimeter (0): ck and average nah, wildlife area, etc. (7): growth forest. (5): c, conservation tillage, new fal	1	
19	34	Metric 3. Hydrology				
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) x Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream	n) (5)	x Part of wetland Part of riparian 3d. Duration inundation/sat	olain (1) n/lake and other hu /upland (e.g. forest) or upland corridor (uration. Score one o), complex (1) (1) or dbl check
		3c. Maximum water depth. Select only one and >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) x <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime. x None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	_	Regularly inund x Seasonally inun Seasonally satu wble check and average point source filling/grading road bed/RR dredging	rated in upper 30cm (nonstormwater)	
17	51	Metric 4. Habitat Alteration and D	evelonmen	+		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double x None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and a Excellent (7) Very good (6) Good (5)	check and avera			
s	51	Recovered (6) Recovering (3) Recent or no recovery (1)	k and average. c all disturbance mowing grazing clearcutting selective cutti woody debris toxic pollutan	shrub/sapling herbaceous/a sedimentation dredging removal farming	aquatic bed removal n	
		<u> </u>				

Site:	WOH-26	7	Rater(s):	Ben Hess	Date:	December 5, 2017
	2		Site:	Apex Republic		
O max 10 pt	Subtotal th	Metric 5. Special Wetlands Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-un Lake Erie coastal/tributary wetland-res Lake Plain Sand Prairies (Oak Openings Relict Wet Prairies (10) Known occurrence state/federal threat Significant migratory songbird/water for Category 1 Wetland. See Question 1 Or x Not Applicable (0)	tricted hydrolo) (10) tened or endan owl habitat or u	gy (5) gered species (10) sage (10)		
2	2	Metric 6. Plant communities, inter	spersion. n	nicrotopograhy.		
max 20 pt	s subtotal	6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale. Aquatic bed Emergent Shrub	•	Mmunity Cover Scale Absent or comprise Present and eith vegetation	er comprises small	quality, or comprises a
		O Forest Mudflats Open water Other	2	Present and eith vegetation a part and is o	er comprises significand is of moderate of high quality	cant part of wetland's quality or comprises a small
		6b. Horizontal (plan view) Interspersion. Select only one.	3	vegetation	and is of high quality	у
		High (5) Moderately high (4) Moderate (3)	Narrative Des	disturbance	y and/or predomina tolerant native spe	
		Moderately low (2) x Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	although no can also be moderately	present, and specie	t of the vegetation, urbance tolerant native spp s diversity moderate tc w/o presence of rare
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominance and/or distu absent, and	of native species, warbance tolerant nat high spp diversity a	vith nonnative spp tive spp absent or virtually and often, but no always, ad, or endangered spp
		Nearly absent <5% cover (0) x Absent (1)		pen Water Class Quality		
		6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummocks/tussocks	1	Absent <0.1ha (0 Present very sma of marginal	all amounts or if mo	ere common
		Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	2	Present in mode	rate amounts, but n small amounts of h	
		Amphibian breading pools	3		rate or greater amo	
53		(max 100 pts) A Score Calibration Report for the scoring breakpoints between wet	and categories at th	e following address: http://www.e	pa.state.oh.us/dsw/401/40	01.html
Comment	s:					

Site:	WOH-26	8	Rater(s):	Ben Hess	Date:	December 5, 2017
1 max 6 pts.	1 subtotal	Metric 1. Wetland Area (size). Select one size class and assign score.	Project:	Apex Republic		
		>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) (2 pts) x				
14	15	Metric 2. Upland buffers and sur	rrounding	land use.		
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only o X WIDE. Buffers average 50m (164ft) or MEDIUM. Buffers average 25m to <50 NARROW. Buffers average 10m to <25 VERY NARROW. Buffers average <10m 2b. Intensity of surrounding land use. Select one X VERY LOW. 2nd growth or older forest LOW. Old field (>10 years), shrubland, MODERATELY HIGH. Residential, fence HIGH. Urban, industrial, open pasture,	ne and assign somore around wim (82 to <164ft for (32ft to <82ft) arounded or double cheek, prairie, savanity young second ged pasture, parked	core. Do not double check etland perimeter (7): c) around wetland perimeter (6): t) around wetland perimeter (8): wetland perimeter (9): ck and average nah, wildlife area, etc. (7): growth forest. (5): c, conservation tillage, new fal	1	
20	35	Metric 3. Hydrology	,	6 , ,		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) x Seasonal/Intermittent surface water (3) Perennial surface water (lake or strean) 3c. Maximum water depth. Select only one and	n) (5)	x Part of wetland Part of riparian 3d. Duration inundation/sat	olain (1) n/lake and other hui /upland (e.g. forest) or upland corridor (1	I, complex (1) 1) or dbl check
		>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) x <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime.	-	x Regularly inund Seasonally inund Seasonally saturable check and average point source filling/grading road bed/RR dredging	lated/saturated (3) dated (2) rated in upper 30cm (nonstormwater)	
17	52	Metric 4. Habitat Alteration and D	evelopmen	t.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double of x None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and as Excellent (7) Very good (6) Good (5) x Moderately good (4) Fair (3) Poor to fair (2)	check and avera			
s	52 Lubtotal this page	Recovered (6) Recovering (3) Recent or no recovery (1)	k and average. call disturbance mowing grazing clearcutting selective cutti woody debris toxic pollutant	shrub/sapling herbaceous/s sedimentatio dredging removal farming	aquatic bed removal n	

Site:	WOH-26	8	Rater(s):	Ben Hess	Date:	December 5, 2017
	2		Site:	Apex Republic		
O max 10 pt	o Ses subtotal	Metric 5. Special Wetlands Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-uni Lake Frie coastal/tributary wetland-res Lake Plain Sand Prairies (Oak Openings Relict Wet Prairies (10) Known occurrence state/federal threat Significant migratory songbird/water for Category 1 Wetland. See Question 1 Q x Not Applicable (0)	tricted hydrolo) (10) tened or endan owl habitat or u	gy (5) gered species (10) ssage (10)		
2	2	Metric 6. Plant communities, inter	spersion. n	nicrotopograhy.		
max 20 pt	s subtotal	6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale. Aquatic bed Emergent	•	Absent or comprise Present and eithe vegetation ar	r comprises small nd is of moderate o	quality, or comprises a
		Shrub O Forest Mudflats Open water Other	2	Present and eithe vegetation ar part and is of	nd is of moderate of high quality	cant part of wetland's quality or comprises a small
		6b. Horizontal (plan view) Interspersion. Select only one.	3	vegetation ar	nd is of high quality	y
		High (5) Moderately high (4) Moderate (3)	Narrative Des	disturbance t	and/or predomina olerant native spe	
		Moderately low (2) x Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	although non can also be p moderately h	native and/or dist resent, and specie	t of the vegetation, urbance tolerant native spp s diversity moderate to w/o presence of rare
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominance of and/or distur absent, and h	of native species, we bance tolerant national species. We have a species of the s	vith nonnative spp tive spp absent or virtually ind often, but no always, d, or endangered spp
		Nearly absent <5% cover (0) Absent (1)		pen Water Class Quality		
		6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummocks/tussocks	1	Absent <0.1ha (0.2 Present very smal of marginal q	l amounts or if mo	re common
		Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	2	Present in modera quality or in s	ate amounts, but n small amounts of h	
		Amphibian breading pools	3	Present in modera and of highes		unts
54 Refer to the		(max 100 pts) A Score Calibration Report for the scoring breakpoints between wetle	and categories at th	e following address: http://www.epa	ustate.oh.us/dsw/401/40	01.html
Comment	ss:					

50

max 20 pts.

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or	double check and average.
None or none apparent (4)	
x Recovered (3)	
Recovering (2)	
Recent or no recovery (1)	
4b. Habitat development. Select only or	ne and assign score.
Excellent (7)	
Very good (6)	
Good (5)	
Moderately good (4)	
x Fair (3)	
Poor to fair (2)	
Poor (1)	
4c. Habitat alteration. Score one or dou	ble check and average.
x None or none apparent (9)	<u>Check</u> all disturbances observed
Recovered (6)	mowing shrub/sapling removal
Recovering (3)	grazing herbaceous/aquatic bed removal
Recent or no recovery (1)	clearcutting sedimentation
	selective cutting dredging

woody debris removal

toxic pollutants

farming

nutrient enrichment

50

subtotal this page

Site:	WOH-26	9	Rater(s):	Ben Hess	Date:	December 5, 2017
	2		Site:	Apex Republic		
O max 10 pt	o Ses subtotal	Metric 5. Special Wetlands Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-un Lake Erie coastal/tributary wetland-res Lake Plain Sand Prairies (Oak Openings Relict Wet Prairies (10) Known occurrence state/federal thread Significant migratory songbird/water for Category 1 Wetland. See Question 1 Co	stricted hydrolo s) (10) tened or endan owl habitat or u	gy (5) gered species (10) ssage (10)		
2	2	Metric 6. Plant communities, inter	spersion. n	nicrotopograhy.		
max 20 pt	s subtotal	6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale. Aquatic bed Emergent Shrub	•	mmunity Cover Scale Absent or comp Present and eit vegetation	her comprises small plant is of moderate of	quality, or comprises a
		0 Forest Mudflats Open water Other	2	Present and eit vegetation part and is	and is of moderate of high quality	quality or comprises a smal
		6b. Horizontal (plan view) Interspersion. Select only one.	3	vegetation	and is of high quality	/
		High (5) Moderately high (4) Moderate (3)	Narrative Des	disturbanc	ty and/or predomina e tolerant native spe	cies
		Moderately low (2) x Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	although n can also be moderatel	e present, and specie	t of the vegetation, urbance tolerant native spp s diversity moderate tc w/o presence of rare
		or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	high	A predominand and/or dist absent, an	e of native species, w turbance tolerant nat d high spp diversity a	vith nonnative spp cive spp absent or virtually nd often, but no always, d, or endangered spp
		Nearly absent <5% cover (0) x Absent (1)		pen Water Class Quality		_
		6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummocks/tussocks	1	Absent <0.1ha Present very sn of margina	nall amounts or if mo	re common
		O Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	2	Present in mod	erate amounts, but n in small amounts of h	
		Amphibian breading pools	3		erate or greater amo nest quality	unts
52		(max 100 pts) A Score Calibration Report for the scoring breakpoints between wet	land categories at th	e following address: http://www.	epa.state.oh.us/dsw/401/40)1.html
Comment	:s:					

Republic Wind Project

APPENDIX

WATERBODY ASSESSMENT FORMS



Chief Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-01 RIVER BASIN Indian Creek DRAINAGE AREA (mi²) 0.	.12
LENGTH OF STREAM REACH (ft) 2,612 LAT. 41.21910 LONG83.09296 RIVER CODE RIVER MILE	
DATE 09/28/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Point
BEDROCK [16 pt] BEDROCK [16 pt] O% FINE DETRITUS [3 pts] O%	Substrat
COBBLE (65-256 mm) [12 pts]	Max = 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] 0% ☐ SAND (<2 mm) [6 pts]	13
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	0
OMMENTS Roadside man-made agricultural ditch MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] (Check ONLY one box).	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS Heavily vegetated AVERAGE BANKFULL WIDTH (meters): 1.20	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Imager Forest, Shrub or Old Urban or Industrial	
Field —— Open Pasture Pow Cro	n
Residential, Park, New Field	۳
None Fenced Pasture Mining or Construction COMMENTS Sits within active field	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) OCMMENTS Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 3.0 3.0 0.5 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:
Photograph Information: 3 Photos taken, 1 upstream, 1 downstream, and 1 looking into feature DOH-06 which connects.
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located alongside a road and near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Google earth





Chief Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-02 RIVER BASIN Spicer creek DRAINAGE AREA (mi²)	0.85
LENGTH OF STREAM REACH (ft) 776 LAT. 41.21315 LONG83.11213 RIVER CODE RIVER MILE	
DATE 09/28/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECO	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	12
SAND (<2 mm) [6 pts]	12
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
The Witter of Manager (a per	15
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 6	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfu
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	liiux ou
COMMENTS Recently modified on east side of Jopp Rd. AVERAGE BANKFULL WIDTH (meters): 1.00	5
7.5.2.2.2.2.2.3.1.1.(11.05.3).	
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\times \text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\$	
RIPARIAN WIDTH FLOODPLAIN QUALITY L_R_ (Per Bank)L_R_ (Most Predominant per Bank)L_R_	
Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cr	ор
✓ None ☐ Fenced Pasture ☐ Mining or Construction	
COMMENTS Jopp road is on River Left.	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent	:)
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS	1
	ć -
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
□ 0.5	
0.5	
	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 09/26/16 Quantity:_ 0.43
Photograph Information: 3 Photos taken, 1 upstream, 1 downstream, and 1 looking into feature culvert under Jopp Rd
Elevated Turbidity? (Y/N): Y Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located alongside a road and near active crop areas with several field tile discharges. Recently modified with minor erosion.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
·
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW





	THIEI GOOTE (Sum of metrics 1, 2, 3) .	
SITE NAME/LOCATION Apex Republic W	Vind Farm	
SITE NUMBER D	DOH-05 RIVER BASIN Indian Creek DRAINAGE AREA (mi²) 2.00	0
LENGTH OF STREAM REACH (ft) 506	LAT. 41.22270 LONG83.07816 RIVER CODE RIVER MILE	
DATE 09/28/16 SCORER BJS	COMMENTS Portion of Indian Creek	
		tions
NOTE: Complete All Items On This For	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct	tions
STREAM CHANNEL NONE / NA MODIFICATIONS:	ATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVE	/ERY
1. SUBSTRATE (Estimate percent of ever	very type of substrate present. Check ONLY two predominant substrate TYPE boxes	
		HHE Metri
	THE PERCENT	Point
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]	0% SILT [3 pt] 40% 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	
BEDROCK [16 pt]	0% FINE DETRITUS [3 pts] 0% S	Substra
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt]	Max = 4
GRAVEL (2-64 mm) [9 pts]	5% MUCK [0 pts] 0%	13
SAND (<2 mm) [6 pts]	35% ARTIFICIAL [3 pts] 0%	13
Total of Percentages of	0.00% (A) Substrate Percentage	A + B
Bldr Slabs, Boulder, Cobble, Bedrock _	Cneck	Α.Β
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the m	maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	ool De
evaluation. Avoid plunge pools from roa		Max = 3
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	25
OMMENTS Limited pools along	the feature MAXIMUM POOL DEPTH (centimeters): 15	
OWINIENTS	MAXIMUM POOL DEPTH (centimeters): 15	
3. BANK FULL WIDTH (Measured as the		Bankfu
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]		Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	∑ 1.0 III (\-3 0) [0 pto]	WIGA-50
	0.00	_
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 0.60	5
RIPARIAN ZONE AND FLOODF	This information must also be completed PLAIN QUALITY ↑NOTE: River Left (L) and Right (R) as looking downstream ↑	
RIPARIAN WIDTH	FLOODPLAIN QUALITY	
L R (Per Bank)	L R (Most Predominant per Bank) L R	
Wide >10m	Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop	
V None COMMENTS Located between		
	raluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated poor	Moist Channel, isolated pools, no flow (Intermittent) ools (Interstitial) Dry channel, no water (Ephemeral)	
COMMENTS	. ,	
SINI IOSITY (Number of bonds r	per 61 m (200 ft) of channel) (Check ONLY one box):	
None None	1.0 Charmer) (Check ONLY one box).	
✓ 0.5	1.5 2.5 >3	
STREAM GRADIENT ESTIMATE		
Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)	t)
Flat (0.5 ft/100 ft)	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)	(t)

ADDITIONAL STREAM INF	FORMATION (This Information Must Also	be Completed):		
QHEI PERFORM	IED? - Yes ✓ No QHEI Score	(If Yes, Atta	ch Completed QHEI Forr	m)
DOWNSTREAM	DESIGNATED USE(S)			
WWH Name:			_ Distance from Evaluat	ed Stream
CWH Name: _			Distance from Evaluate	ed Stream
EWH Name:			Distance from Evaluate	ed Stream
MAPPING: ATTA	ACH COPIES OF MAPS, INCLUDING THE EI	NTIRE WATERSHED	AREA. CLEARLY MARK	THE SITE LOCATION
USGS Quadrangle Name:	Watson	NRCS Soil Map P	age: NRCS Soi	l Map Stream Order
County: Seneca	Towns	ship / City:		
MISCELLANEOU	JS			
Base Flow Conditions? (Y/N	N):_Y Date of last precipitation:_	09/26/16	Quantity: 0.43	
Photograph Information: _2	Photos taken, 1 downstream, and 1 loo	king into culverts w	hich cross to north sid	le of CR44
Elevated Turbidity? (Y/N): _	N Canopy (% open): 100	%		
Were samples collected for	r water chemistry? (Y/N): N (Note la	o sample no. or id. a	nd attach results) Lab No	umber:
Field Measures: Temp ((°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conductivity (µm	hos/cm)
Is the sampling reach repre	esentative of the stream (Y/N) Y If not	, please explain:		
Additional comments/descr	ription of pollution impacts:			
Located near active crop	areas.			
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biologo	(If Yes, Record all observations. Voucher ID number. Include appropriate field date Voucher? (Y/N) Salamanders Ced? (Y/N) Voucher? (Y/N) Aqua	a sheets from the Prin		
DRAWING	AND NARRATIVE DESCRIPTION	OF STREAM R	EACH (This <u>must</u> t	pe completed):
Include important la	ndmarks and other features of interest fo	r site evaluation an	d a narrative description	of the stream's location
FLOW -	le earth			Z





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-06 RIVER BASIN Indian Creek DRAINAGE AREA (mi²)	0.00
LENGTH OF STREAM REACH (ft) 1,937 LAT. 41.21924 LONG83.08901 RIVER CODE RIVER MILE	
DATE 09/28/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] O% SILT [3 pt] 55%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D'W LEAF PACK/WOODY DEBRIS [3 pts] O'W FINE DETRITUS [3 pts] O'W O'W	Substrat
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ 0%	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ 0% ☐ ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	12
Total of Percentages of 0.00% (A) Substrate Percentage 4.00% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts]	<u> </u>
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	0
OMMENTS MAXIMUM POOL DEPTH (centimeters): 0	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m = 4.0 m (> 9' 7" = 13') [25 pts] > 1.0 m (> 3' 3" - 4' 8") [15 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Widx-30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.60	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Moderate 5-10m Field Open Pasture, Row Cr	on
Narrow <5m Residential, Park, New Field V	
None Fenced Pasture Mining or Construction COMMENTS Located between agricultural fields.	_
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent	:)
	:)]
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	i)]_
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	i)]_
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 2.0 3.0 3.0 0.5 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	1
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral) (Check ONLY one box): 2.0 3.0	1

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:
Photograph Information: 2 Photos taken, 1 downstream, and 1 looking into culverts which cross to north side of CR44
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Vouc
Comments Regarding Biology:
Comments regarding bloogy.
DRAWING AND NARRATIVE RECORDS ON OF OTREAM REACH (TI.:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW -
Google earth





	Title 90010 (Sum of metrics 1, 2, 3) 1
SITE NAME/LOCATION Apex Republic W	/ind Farm
SITE NUMBER_	OH-07 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.02
LENGTH OF STREAM REACH (ft) 234	LAT. 41.21924 LONG83.08901 RIVER CODE RIVER MILE
DATE 09/29/16 SCORER BJS	COMMENTS
NOTE: Complete All Items On This Forr	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NAMODIFICATIONS:	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of ever	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes
	ant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
	ERCENT TYPE PERCENT POINT
BLDR SLABS [16 pts]	SILT [SPI]
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0% Substr
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] Max =
GRAVEL (2-64 mm) [9 pts]	5% MUCK (0 ptc) 0%
SAND (<2 mm) [6 pts]	40% ARTIFICIAL [3 pts] 0%
T. I. I. C. D	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	0.00% (A) Substrate Percentage 100% (B) A + E
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3
	Pool Deliverts or storm water pipes) (Check <i>ONLY</i> one box): Pool Deliverts or storm water pipes) (Check <i>ONLY</i> one box): Max =
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]
OMMENTS	MAXIMUM POOL DEPTH (centimeters): 0
3. BANK FULL WIDTH (Measured as the	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Widt 1.0 m (<=3' 3") [5 pts] Max=
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTO	AVERAGE BANKFULL WIDTH (meters): 0.60
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 0.60 5
DIDADIAN ZONE AND ELOOPE	This information must also be completed
RIPARIAN ZONE AND FLOODF RIPARIAN WIDTH	PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY
L R (Per Bank)	L R (Most Predominant per Bank) L R
Wide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
	Field Open Pasture, Row Crop
Narrow <5m	Residential, Park, New Field
None	Fenced Pasture Mining or Construction
COMMENTS	
`	aluation) (Check ONLY one box):
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated poor COMMENTS_	ols (Interstitial) Dry channel, no water (Ephemeral)
55nE.tt. 5_	<u>.</u>
	per 61 m (200 ft) of channel) (Check ONLY one box):
None 0.5	1.0 1.5 2.0 3.0 3.0 >3
STREAM GRADIENT ESTIMATE	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 09/28/16 Quantity: 0.42
Photograph Information: 2 Photos taken, 1 downstream, and 1 looking into culverts which cross to north side of CR44
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): _N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW Google earth





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-08 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	0.11
LENGTH OF STREAM REACH (ft) 85 LAT. 41.21934 LONG83.05454 RIVER CODE RIVER MILE	
DATE 09/29/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] D LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0% SAND (<2 mm) [6 pts] 40% ARTIFICIAL [3 pts] 0%	12
Title (B)	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check 100%	A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
The White Community of	0
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.50	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH ENDOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴ RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): O.50 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m One Pasture Power	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): O.50 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m One Pasture Power	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): O.50 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Under Shank) RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10m Narrow <5m Residential, Park, New Field None COMMENTS Located in a woodlot None COMMENTS Located in a woodlot	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream nature Forest, Wetland RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m None Residential, Park, New Field None COMMENTS Plow REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Noist Channel, isolated pools, no flow (Intermittee) Moderatte Signal and Signal an	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field None COMMENTS Located in a woodlot FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m Narrow <5m None COMMENTS Residential, Park, New Field None COMMENTS Residential, Park, New Field Penced Pasture COMMENTS Moist Channel, isolated pools, no flow (Intermitted Dry channel, no water (Ephemeral)) COMMENTS Moist Channel, no water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10m Narrow <5m None Residential, Park, New Field Penced Pasture COMMENTS Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 None 1.0 Check ONLY one box): None Check ONLY one box): None 1.0 Check ONLY one box): None	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH L R (Per Bank) Vide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m Residential, Park, New Field None COMMENTS Residential, Park, New Field None COMMENTS Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10m Narrow <5m None Residential, Park, New Field Penced Pasture COMMENTS Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 None 1.0 Check ONLY one box): None Check ONLY one box): None 1.0 Check ONLY one box): None	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEI	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map F	Page: NRCS Soil Map Stream Order
County: Seneca Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 09/28/16	Quantity: 0.42
Photograph Information: 2 Photos taken, 1 downstream, and 1 upstream	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id.	and attach results) Lab Number:
	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Located near active crop areas.	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional	·
ID number. Include appropriate field data sheets from the Pr	rimary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebra	Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	N
DRAWING AND NADDATIVE DECORPTION OF STREAM	DEAGUE (This can also be a local)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-009 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.7	75
LENGTH OF STREAM REACH (ft) 821 LAT. 41.21312 LONG83.05397 RIVER CODE RIVER MILE	
DATE 09/29/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	ctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVER NO	VERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri Point
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] O% SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] O%	ı Omit
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts]	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 40% MUCK [0 pts] 0% ARTIFICIAL [3 pts]	12
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	,,,,,
	Pool Dep Max = 3
> 30 centimeters [20 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	15
OMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
	Davids
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
Midenal aut was subject but wat the average	
COMMENTS Widehed out hear culvert, but not the average AVERAGE BANKFULL WIDTH (meters): 0.60	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	
☐☐ Wide >10m ☐☐ Mature Forest, Wetland ☐☐ Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	1
✓ ✓ None	
COMMENTS Located on roadside.	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) (Check ONLY one box): 2.0 3.0	

ADDITIONAL STREAM INFORMATION (This Information Must Als	o be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream _
CWH Name:	Distance from Evaluated Stream
EWH Name: _	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:_Watson	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Town	nship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_	09/28/16 Quantity: 0.42
Photograph Information: 2 Photos taken, 1 downstream east of Si	R 778, and 1 downstream from east side of SR 778
Elevated Turbidity? (Y/N): N Canopy (% open): 100)%
Were samples collected for water chemistry? (Y/N): (Note la	ab sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If no	t, please explain:
Additional comments/description of pollution impacts:	
Located near active crop areas and roads.	
BIOTIC EVALUATION	
() ()	er collections optional. NOTE: all voucher samples must be labeled with the site ta sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders of Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aqua	Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-10 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.	.70
LENGTH OF STREAM REACH (ft) 1,361 LAT. 41.19973 LONG83.03867 RIVER CODE RIVER MILE	
DATE 09/30/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT PERCENT PERCENT	Metri
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substrat Max = 4
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0% GRAVE (3-64 mm) [9 pts] 20% MUCK [0 pts] 0%	IVIAX = 4
GRAVEL (2-64 mm) [9 pts]	13
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
→ 30 centimeters [20 pts] → 5 cm - 10 cm [15 pts] → 22.5 - 30 cm [30 pts] → 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 10	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	IIIIAX OO
COMMENTS Widened out near culvert, but not the average AVERAGE BANKFULL WIDTH (meters): 1.20	15
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Field Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	р
None Fenced Pasture Mining or Construction	
COMMENTS Located between residential lots and crop areas.	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 2.0 3.0 3.0 0.5 1.5 2.5 3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 09/29/16 Quantity:_ 0.23
Photograph Information: 6 photos taken along reache reviewed at various locations and angles.
Elevated Turbidity? (Y/N): N Canopy (% open): 75%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW ->





SITE NAME/LOCATION Apex Republic Wind Farm
SITE NUMBER DOH-11 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.09
LENGTH OF STREAM REACH (ft) 390 LAT. 41.19882 LONG83.03645 RIVER CODE RIVER MILE
DATE 09/30/16 SCORER BJS COMMENTS
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS:
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT HH Met
BLDR SLABS [16 pts] O SILT [3 pt] Poil
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] O% LEAF PACK/WOODY DEBRIS [3 pts] O% Substitute Substitute O% Substitute
COBBLE (65-256 mm) [12 pts]
GRAVEL (2-64 mm) [9 pts]
SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock October 100% (A) Substrate Percentage Check (B) A +
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]
□ □ > 10 - 22.5 cm [25 pts] □ □ NO WATER OR MOIST CHANNEL [0 pts] 5
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 5
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bank
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Wid > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] Max=
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
COMMENTS Widened out near culvert, but not the average AVERAGE BANKFULL WIDTH (meters): 0.60
This information must also be completed
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY
L R (Per Bank) L R (Most Predominant per Bank) L R
Wide >10m
Field Field
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop
None Fenced Pasture Mining or Construction COMMENTS Located between residential lots and crop areas.
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS
O I I I I I I I I I I I I I I I I I I I
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None
✓ None

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 09/29/16 Quantity:_ 0.23
Photograph Information: 3 Photos taken, 1 at culvert along road, and 2 along the forested area before joing DOH-10
Elevated Turbidity? (Y/N): N Canopy (% open): 60%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas and a road.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-016 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.	.00
LENGTH OF STREAM REACH (ft) 1,083 LAT. 41.22943 LONG83.05430 RIVER CODE RIVER MILE	
DATE 09/30/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMMODIFICATIONS:	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Politic
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	Max - 4
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 25% MUCK [0 pts] O% O% O%	12
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts]	0
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
	5
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.60	
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ Wide >10m ☐ Mature Forest, Wetland ☐ Conservation Tillage ☐ Moderate 5-10m ☐ Immature Forest, Shrub or Old ☐ Urban or Industrial	
Field —— Open Pacture Pow Cro	nn.
Residential, Park, New Field	P
None Fenced Pasture Mining or Construction COMMENTS Located between crop area and roadway	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	0.50

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, At	tach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	
USGS Quadrangle Name: Watson NRCS Soil Map	
County: Seneca Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 09/29/16	Quantity: 0.23
Photograph Information: 2 Photos taken along reach, 1 upstream and 1 downstream	n
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id	. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Located near active crop areas and a road.	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections option	nal. NOTE: all voucher samples must be labeled with the sit
ID number. Include appropriate field data sheets from the F	•
Fish Observed? (Y/N) N Salamanders Observed? (Y/N) Salamanders Observed? (Y/N) N Salamanders Obs	Voucher? (Y/N) N
rings of Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebr	rates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation a	and a narrative description of the stream's location
	Mar Secretary College To the College
The second secon	CATTON MANAGEMENT
FLOW -	(19)
	7
Google earth	





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-19 RIVER BASIN Indian Creek DRAINAGE AREA (mi²)	0.01
LENGTH OF STREAM REACH (ft) 674 LAT. 41.22654 LONG83.08762 RIVER CODE RIVER MILE	
DATE 09/30/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ SAND (<2 mm) [6 pts] ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	13
Total of Percentages of Control (A) Substitute Recognition (B)	1
Bldr Slabs, Boulder, Cobble, Bedrock Check	A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
	Wax - 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	0
The Withert ortimates for pion	
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \(\leq 1.0 m (<=3' 3") [5 pts]	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \(\leq 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.30	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.30 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.30 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 0.30 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) U	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Another RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Value Residential, Park, New Field COMMENTS COMMENTS Residential, Park, New Field Fenced Pasture COMMENTS Comments AVERAGE BANKFULL WIDTH (meters): 0.30 L R Conservation Tillage Immature Forest, Shrub or Old Field Open Pasture, Row Cr All Park, New Field Open Pasture, Row Cr Mining or Construction COMMENTS C	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field Narrow <5m None COMMENTS Residential, Park, New Field Fenced Pasture COMMENTS Conservation Tillage Mining or Construction COMMENTS Conservation (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field Narrow <5m None COMMENTS Residential, Park, New Field Fenced Pasture COMMENTS Conservation Tillage Mining or Construction COMMENTS Conservation (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴ RIPARIAN WIDTH ∴ R (Per Bank) ∴ R (Most Predominant per Bank) ∴ R (Most Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as look	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 13') [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide > 10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Narrow < 5m Residential, Park, New Field Open Pasture, Row Cr I None COMMENTS Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as look	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Atta	ch Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream
CWH Name:	_ Distance from Evaluated Stream _
EWH Name: _	Distance from Evaluated Stream _
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map P	age: NRCS Soil Map Stream Order
County: Seneca Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 09/29/16	Quantity: 0.23
Photograph Information: 1 Photos taken along reach, looking downstream	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Located near active crop areas and a road.	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional	. NOTE: all voucher samples must be labeled with the sit
ID number. Include appropriate field data sheets from the Pri	
Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N Salamanders Observed? (Y/N) N	Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrat	es Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	EACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation an	d a narrative description of the stream's location
	P
FLOW TRONGS	The state of the s
	N
Cogle earth	Y





	THIEF GOOLG (Sum of metrics 1, 2, 3) :
SITE NAME/LOCATION Apex Republic V	
SITE NUMBER_	OOH-023 RIVER BASIN Sugar Creek DRAINAGE AREA (mi²) 0.59
LENGTH OF STREAM REACH (ft) 550	LAT. 41.16321 LONG83.01463 RIVER CODE RIVER MILE
DATE 10/01/16 SCORER BJS	COMMENTS
NOTE: Complete All Items On This Fori	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NA MODIFICATIONS:	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of every state of every state)	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes
(Max of 32). Add total number of signific	cant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
	ERCENT TYPE PERCENT POIR
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]	0% SILT [3 pt] 55% FOII 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%
BEDROCK [16 pt]	0% FINE DETRITUS [3 pts] 0% Subst
COBBLE (65-256 mm) [12 pts]	5% CLAY or HARDPAN [0 pt] 0%
GRAVEL (2-64 mm) [9 pts]	10% MICK [0 ptc] 0%
SAND (<2 mm) [6 pts]	30% ARTIFICIAL [3 pts] 0%
Total of Percentages of	Substrate Percentage 4000/ (B)
Bldr Slabs, Boulder, Cobble, Bedrock	5.00% (A) Substrate Percentage 100% (B) A + E
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4
Mayimum Baal Banth (Massure the m	Doct D
	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of deculverts or storm water pipes) (Check ONLY one box): Pool D Max =
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts] 25
OMMENTS	MAXIMUM POOL DEPTH (centimeters): 20
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts]	e average of 3-4 measurements) (Check <i>ONLY</i> one box): Bank
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (<=3' 3") [5 pts] What
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 1.20
COMMENTS	AVERAGE BANKFOLL WIDTH (INICIES): 1.20
DIDADIAN ZONE AND EL CODI	This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆
RIPARIAN ZONE AND FLOOD! RIPARIAN WIDTH	FLOODPLAIN QUALITY STOOTE: River Left (L) and Right (R) as looking downstream st
L R (Per Bank)	L R (Most Predominant per Bank) L R
Wide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
пп	Field Open Pasture, Row Crop
Narrow <5m	Residential, Park, New Field
✓ None	Fenced Pasture Mining or Construction
COMMENTS Located between	en crop areas
FLOW REGIME (At Time of Eva	aluation) (Check ONLY one box):
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated poor COMMENTS_	ols (Interstitial) Dry channel, no water (Ephemeral)
33MML113_	
	per 61 m (200 ft) of channel) (Check ONLY one box):
None 0.5	1.0 1.5 2.0 3.0 3.0 >3
	1.0 2.0 70
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate	
Triat (0.5 li/100 lt)	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 09/30/16 Quantity: 0.15
Photograph Information: 2 Photos taken along reach, 1 looking upstream, and 1 downstream.
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas and a road.
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW -
Google earth





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-024 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²)	1.05
LENGTH OF STREAM REACH (ft) 583 LAT. 41.16579 LONG83.00500 RIVER CODE RIVER MILE	
DATE 10/01/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute 1.	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] O% SILT [3 pt] 55%	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] DW LEAF PACK/WOODY DEBRIS [3 pts] OW FINE DETRITUS [3 pts] OW OW	Substrat
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ ☐ 0%	Max = 4
☐ GRAVEL (2-64 mm) [9 pts]	12
Total of Percentages of (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	^.b
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	5
OMMENTS Isolated pools MAXIMUM POOL DEPTH (centimeters): 5	
2 PANK FILL WIDTH (Macaused as the average of 2.4 macausements). (Check ONLY one box):	Bankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] ✓ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.10 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑NOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY ↓ R (Per Bank) ↓ L R (Most Predominant per Bank) ↓ L R Wide >10m │ Mature Forest, Wetland │ Conservation Tillage Moderate 5-10m │ Mature Forest, Shrub or Old │ Urban or Industrial Narrow <5m │ Residential, Park, New Field │ Open Pasture, Row Cr V None │ Fenced Pasture │ Mining or Construction COMMENTS Located between crop areas	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH L R (Per Bank) Wide > 10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Virban or Industrial Field Open Pasture, Row Cr None COMMENTS Fenced Pasture COMMENTS Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH RIPARIAN WIDTH Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field Penced Pasture COMMENTS Fenced Pasture Flow REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral))	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLA	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Narrow <5m Residential, Park, New Field None COMMENTS Fenced Pasture COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN ZONE AND FLOODPLA	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 09/30/16 Quantity: 0.15
Photograph Information: 1 looking downstream.
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas and a road.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW

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SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-027 RIVER BASIN Sugar Creek DRAINAGE AREA (mi²)	0.68
LENGTH OF STREAM REACH (ft) 739 LAT. 41.19052 LONG83.02860 RIVER CODE RIVER MILE	
DATE 10/01/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	tructions
STREAM CHANNEL	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	13
Total of Percentages of Application (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	7.5
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	25
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 13	
2 PANK FULL WIDTH (Massured as the average of 2.4 massurements) (Check ONLY one box):	Bankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): ### AVERAGE BANKFULL WIDTH (meters): ### D.60 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream**	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 0.60 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V None COMMENTS Residential, Park, New Field None COMMENTS Flow Resident (At Time of Evaluation) (Check ONLY one box): Stream Flowing Noist Channel, isolated pools, no flow (Intermitter) Noist Channel, isolated pools, no flow (Intermitter)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Note: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS Located between crop areas with narrow shrubby buffers FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 0.60	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Another Personal Properties (Most Predominant per Bank) RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V Another Personal Posture, Row C None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS Sinuosity (Number of bends per 61 m (200 ft) of channel) None 1.0 Check ONLY one box): None 1.0 Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None 1.0 3.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V Narrow <5m Residential, Park, New Field V None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Another Personal Properties (Most Predominant per Bank) RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V Another Personal Posture, Row C None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS Sinuosity (Number of bends per 61 m (200 ft) of channel) None 1.0 Check ONLY one box): None 1.0 Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None 1.0 3.0	Width Max=30 5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 09/30/16 _ Quantity: 0.15
Photograph Information: 2 photos, 1 upstream and 1 downstream.
Elevated Turbidity? (Y/N): N Canopy (% open): 60%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW TO THE PROPERTY OF THE PR





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SITE NAME/LOCATION Apex Republic Wind Farm SITE NUMBER DOH-028 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²) 0.	
	21
LENGTH OF STREAM REACH (ft) 480 LAT. 41.18955 LONG82.97850 RIVER CODE RIVER MILE	
DATE 10/01/16 SCORER BJS COMMENTS	
	Lotions
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ictions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	HHE Metri
BLDR SLABS [16 pts] O SILT [3 pt] 50%	Point
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% FINE DETRITUS [3 pts] 0%	Substrat
BEDROCK [16 pt]	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%	40
SAND (<2 mm) [6 pts] 40% ARTIFICIAL [3 pts] 0%	13
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	INIUX – O
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	0
	U
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	
	Width
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
	Width
COMMENTSAVERAGE BANKFULL WIDTH (meters): 0.90 This information must also be completed	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters): 0.90 This information Expression of the completed with the complete	Width Max=30
COMMENTSAVERAGE BANKFULL WIDTH (meters): 0.90 This information must also be completed	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) AVERAGE BANKFULL WIDTH (meters): 0.90 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Moderate 5-10m Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.90 L R (Nost Predominant per Bank) L R (Most Predominant per Bank) Urban or Industrial	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.90 L R (Nost Predominant per Bank) L R (Most Predominant per Bank) I Mature Forest, Wetland Wide >10m Mature Forest, Shrub or Old Field Onen Pasture Row Cross Onen Pasture Row Cross	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m AVERAGE BANKFULL WIDTH (meters): 0.90 L R (Nost Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Urban or Industrial Open Pasture, Row Crop	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m Residential, Park, New Field Park (Per Bank) Narrow <5m Residential, Park, New Field Park (Per Bank) Residential, Park, New Field Mining or Construction	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS Located between crop areas FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing MVINTERING AVERAGE BANKFULL WIDTH (meters): 0.90 AVERAGE BANKFULL WIDTH (meters): 0.90 AVERAGE BANKFULL WIDTH (meters): 0.90 Moderate 5-10 and Right (R) as looking downstream ↑ Residentiant per Bank) L R Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction COMMENTS Located between crop areas Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Vi None COMMENTS Located between crop areas FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field COMMENTS	Width Max=30
AVERAGE BANKFULL WIDTH (meters): O.90 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY &NOTE: River Left (L) and Right (R) as looking downstream & RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per	Width Max=30
AVERAGE BANKFULL WIDTH (meters): O.90 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream (RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per B	Width Max=30
AVERAGE BANKFULL WIDTH (meters): O.90 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY &NOTE: River Left (L) and Right (R) as looking downstream & RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 09/30/16 Quantity: 0.15
Photograph Information: 2 photos, 1 upstream and 1 downstream.
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location









SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-034 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	.73
LENGTH OF STREAM REACH (ft) 412 LAT. 41.21238 LONG83.05148 RIVER CODE RIVER MILE	
DATE 10/02/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
BLDR SLABS [16 pts]	1 Onit
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 40% ARTIFICIAL [3 pts] 0% 0%	13
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	A . B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	15
OMMIENTS MAXIMUM POOL DEPTH (centimeters): 4	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
	45
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.10	15
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	
RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R	
☐☐ Wide >10m ☐☐ Mature Forest, Wetland ☐☐ Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	pp
None Fenced Pasture Mining or Construction	
COMMENTS Located between crop areas and with narrow meadowv buffer to the south	-
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral))
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent))
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):)
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral))
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None None Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) Check ONLY one box): 3.0)
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 0.5 None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	Ĺ

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):			
QHEI PERFORMED? - Yes No QHEI Score (If Yes, Attach Completed QHEI Form)			
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream			
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION			
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order			
County: Seneca Township / City:			
MISCELLANEOUS			
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/01/16 Quantity: 0.37			
Photograph Information: 1 photo taken looking upstream			
Elevated Turbidity? (Y/N): N Canopy (% open): 85%			
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:			
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)			
Is the sampling reach representative of the stream (Y/N) If not, please explain:			
Additional comments/description of pollution impacts:			
Located near active crop areas and roads.			
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y			
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW Coogle earth			





SITE NAME/LOCATION Apex Republic Wind Farm SITE NUMBER DOH-035 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²) 4.89 LENGTH OF STREAM REACH (ft) 1,601 LAT. 41.19821 LONG83.00942 RIVER CODE RIVER MILE DATE 10/02/16 SCORER BJS COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECENT OR NO RECOVERY MODIFICATIONS: 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] 0% PERCENT TYPE BOULDER (>256 mm) [16 pts] 0% US LEAF PACK/WOODY DEBRIS [3 pts] 0% Substrate PROK/WOODY DEBRIS [3 pts] 0% US LEAF PACK/WOODY DEBRIS [3 pts]
LENGTH OF STREAM REACH (ft) 1,601 LAT. 41.19821 LONG. 83.00942 RIVER CODE RIVER MILE DATE 10/02/16 SCORER BJS COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS: 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT TYPE BLDR SLABS [16 pts] 0% SILT [3 pt] 40% DWA BEDROCK [16 pt] 0% SILT [3 pt] 15% CLAY or HARDPAN [0 pt] 0% Substrate Max = 4 GRAVEL (2-64 mm) [9 pts] 10% MUCK [0 pts] 0% MUCK [0 pts]
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS: 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE SILT [3 pt] PERCENT HOW DEBRIS [3 pts] O% Substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HHE Metric Point Substrate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HHE Metric Point Substrate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HELD SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HELD SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 8). Final metric score is sum of boxes A & B. HELD SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 8). Final metric score is sum of boxes A & B. HELD SUBSTRATE (Estimate percent of every type
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS: 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] PERCENT TYPE SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] O% Substrate Max = 4 O% MUCK [0 pts]
MODIFICATIONS: 1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE OBLDR SLABS [16 pts]
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] WHE Metri Percent 40% LEAF PACK/WOODY DEBRIS [3 pts] WLEAF PACK/WOODY DEBRIS [3 pts] O% Substrat Max = 4 MUCK [0 pts] MUCK [0 pts]
TYPE PERCENT TYPE PERCENT Metric Point □ BLDR SLABS [16 pts] 0% □ SILT [3 pt] 40% Point □ BOULDER (>256 mm) [16 pts] 0% □ LEAF PACK/WOODY DEBRIS [3 pts] 0% Substrat □ COBBLE (65-256 mm) [12 pts] 0% □ CLAY or HARDPAN [0 pt] 0% □ GRAVEL (2-64 mm) [9 pts] 10% □ MUCK [0 pts] 0%
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] BLDR SLABS [16 pts] O% SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] O% Substrat Max = 4 MUCK [0 pts] MUCK [0 pts]
BEDROCK [16 pt]
COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] 15% CLAY or HARDPAN [0 pt] Muck [0 pts] 0% 13
13
SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]
Total of Percentages of 15.00% (A) Substrate Percentage Check 100% (B) A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts] 0
OMMENTS MAXIMUM POOL DEPTH (centimeters): 0
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (- 3' 3" - 4' 8") [15 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts] ✓ Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
COMMENTSAVERAGE BANKFULL WIDTH (meters): 0.90 5
This information must also be completed
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY
L R (Per Bank) L R (Most Predominant per Bank) L R
Wide >10m
Field Field
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop
None Fenced Pasture Mining or Construction COMMENTS Located between residential/agricultural properties, has minor wood fringe to east
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated pools (Interstitial) Ony channel, no water (Ephemeral) COMMENTS
GONINICITY OF
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 >3.0 >3.0 >3.0
✓ None

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): QHEI PERFORMED? - Yes No QHEI Score (If Yes, Attach Completed QHEI Form) DOWNSTREAM DESIGNATED USE(S) WITH Name: Distance from Evaluated Stream Distance from Evaluated Stream		
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: EWH Name: Distance from Evaluated Stream	ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
WWH Name: WAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order Township / City: MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation: 10/01/16 Quantity: Quantity: Quantity: Acanopy (% open): Series and Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Page: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Page: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Page: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: Name: NRCS Soil Map Stream Order Township / City: NRCS Soil Map Stream Order Township / City: NRCS Soil Map Stream Order NRCS Soil Map Stream Order Township / City: NRCS Soil Map Stream Order NRCS Soil M	QHEI PERFORMED? - Yes No QHEI Score (If Yes, Attach C	Completed QHEI Form)
CWH Name: Distance from Evaluated Stream	DOWNSTREAM DESIGNATED USE(S)	
EWH Name: Distance from Evaluated Stream MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order County: Seneca Township / City: MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/01/16 Quantity: 0.37 Photograph Information: 2 photos taken, 1 photo looking upstream and 1 looking downstream towards SOH-14 Elevated Turbidity? (Y/N): N Canopy (% open): 85% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (if Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher?	WWH Name: D	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order County: Seneca Township / City:		
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order County: Seneca Township / City: MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/01/16 Quantity: 0.37 Photograph Information: 2 photos taken, 1 photo looking upstream and 1 looking downstream towards SOH-14 Elevated Turbidity? (Y/N): N Canopy (% open): 85% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habital Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N V	EWH Name: Di	istance from Evaluated Stream
Miscellaneous Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/01/16 Quantity: 0.37 Photograph Information: 2 photos taken, 1 photo looking upstream and 1 looking downstream towards SOH-14 Elevated Turbidity? (Y/N): N Canopy (% open): 85% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y	MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AR	EA. CLEARLY MARK THE SITE LOCATION
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/01/16 Quantity: 0.37 Photograph Information: 2 photos taken, 1 photo looking upstream and 1 looking downstream towards SOH-14 Elevated Turbidity? (Y/N): N Canopy (% open): 85% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habital Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/	USGS Quadrangle Name: Watson NRCS Soil Map Page:	: NRCS Soil Map Stream Order
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/01/16 Quantity: 0.37 Photograph Information: 2 photos taken, 1 photo looking upstream and 1 looking downstream towards SOH-14 Elevated Turbidity? (Y/N): N Canopy (% open): 85% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouche	County: Seneca Township / City:	
Photograph Information: 2 photos taken, 1 photo looking upstream and 1 looking downstream towards SOH-14 Elevated Turbidity? (Y/N): N Canopy (% open): 85% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N	MISCELLANEOUS	
Elevated Turbidity? (Y/N): N Canopy (% open): 85% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mq/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) Y If not, please explain: Additional comments/description of pollution impacts: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher	Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 10/01/16	Quantity: 0.37
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouche	Photograph Information: 2 photos taken, 1 photo looking upstream and 1 looking downs	tream towards SOH-14
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vou	Elevated Turbidity? (Y/N): N Canopy (% open): 85%	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vou	Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and a	attach results) Lab Number:
Additional comments/description of pollution impacts: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)		Conductivity (µmhos/cm)
Additional comments/description of pollution impacts: Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)	Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Located near active crop areas and roads. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)		
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)	Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y	Located near active crop areas and roads.	
	Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NO ID number. Include appropriate field data sheets from the Primary Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Aquatic Macroinvertebrates Company Appropriate field data sheets from the Primary N Voucher? (Y/N) N Aquatic Macroinvertebrates Company Appropriate field data sheets from the Primary N Aquatic Macroinvertebrates Company (Y/N) N N N N N N N N N N N N	y Headwater Habitat Assessment Manual) Voucher? (Y/N)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
DOM: OF THE PROPERTY OF THE PR	E AREA (mi²) 0.02
LENGTH OF STREAM REACH (ft) 944 LAT. 41.19804 LONG83.00902 RIVER CODE	
DATE 10/02/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Stre	ams" for Instructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECE MODIFICATIONS:	NT OR NO RECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes TYPE PERCENT TYPE P	FRCENT Metri
BLDR SLABS [16 pts] O% SILT [3 pt] PAGE PAGE ANGORY DEPRIS [3 pts]	55% Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt]	0% Substrat
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt]	0% Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts] ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	0% 12
Total of Percentages of O.00% (A) Substrate Percentage Check 100%	(B) A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES:	YPES: 3
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at	
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	L [O pto]
OMMENTS MAXIMUM POOL DEPTH (centime	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (me	eters): 0.90 5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking d	lownotroom 1/2
RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY	ownstream x
L R (Per Bank) L R (Most Predominant per Bank) L R	nyation Tillago
Wide >10m Mature Forest, Wetland Conse	rvation Tillage
Wide >10m	or Industrial
Wide >10m	or Industrial Pasture, Row Crop
Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field V V Narrow <5m Mature Forest, Wetland Immature Forest, Shrub or Old Field Open F	or Industrial
Wide >10m	or Industrial Pasture, Row Crop
Wide >10m	or Industrial Pasture, Row Crop or Construction
Wide >10m	or Industrial Pasture, Row Crop or Construction
Wide >10m	or Industrial Pasture, Row Crop or Construction
Wide >10m	or Industrial Pasture, Row Crop or Construction
Wide >10m	or Industrial Pasture, Row Crop or Construction
Wide > 10m	or Industrial Pasture, Row Crop or Construction

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)		
WWH Name:	_ Distance from Evaluated Stream	
CWH Name:	Distance from Evaluated Stream	
EWH Name:	Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: Watson	NRCS Soil Map Page: NRCS Soil Map Stream Order	
County: Seneca Towns	hip / City:	
MISCELLANEOUS		
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	10/01/16 Quantity: 0.37	
Photograph Information: 1 photo looking upstream		
Elevated Turbidity? (Y/N): N Canopy (% open): 100°	%	
Were samples collected for water chemistry? (Y/N): (Note lab	sample no. or id. and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (μmhos/cm)	
Υ	please explain:	
,	, , , , , , , , , , , , , , , , , , ,	
Additional comments/description of pollution impacts:		
Located near active crop areas and roads.		
BIOTIC EVALUATION		
Porformed 2 (V/N)		
() ()	collections optional. NOTE: all voucher samples must be labeled with the site sheets from the Primary Headwater Habitat Assessment Manual)	
Figh Observed (V/N) N Vendor 2 (V/N) N Colored days O	N Vanabas (VAI) N	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders O Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquat	bserved? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N	
Comments Regarding Biology:	N	

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



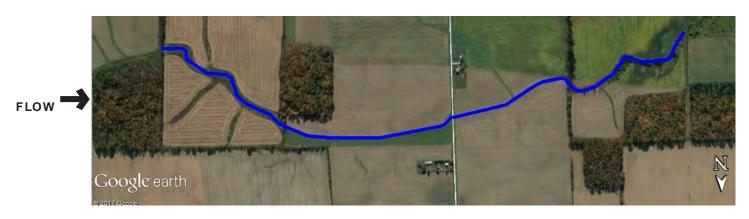




SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-37 RIVER BASIN Morrison Creek DRAINAGE AREA (mi²) 0.	.60
LENGTH OF STREAM REACH (ft) 568 LAT. 41.15076 LONG82.96432 RIVER CODE RIVER MILE	
DATE 10/03/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Point
BEDROCK [16 pt] BEDROCK [16 pt] O% FINE DETRITUS [3 pts] O%	Substrat Max = 4
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	IVIAX - 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ SAND (<2 mm) [6 pts] ☐ ARTIFICIAL [3 pts] 0%	13
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
☐ > 22.5 - 30 cm [30 pts]	5
OMMENTS Limited pools on the eastern edge MAXIMUM POOL DEPTH (centimeters): 5	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.10	15
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Wetland Urban or Industrial	
Field Open Pacture Pow Cro	an
Residential, Park, New Field	-
None Fenced Pasture Mining or Construction COMMENTS Located between agricultural areas, but right bank has woodlot along part of course	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
0.5 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	(O. ff)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)		
DOWNSTREAM DESIGNATED USE(S)		
WWH Name:	_ Distance from Evaluated Stream _	
CWH Name: _	_ Distance from Evaluated Stream _	
EWH Name:	Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE V	VATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: Fireside NRCS	S Soil Map Page: NRCS Soil Map Stream Order	
County: Seneca Township / C	ity:	
MISCELLANEOUS		
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 10/0	2/16 Quantity: 0.06	
Photograph Information: 1 photo looking upstream		
Elevated Turbidity? (Y/N): N Canopy (% open): 95%		
Were samples collected for water chemistry? (Y/N): N (Note lab samp	e no. or id. and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) If not, please	explain:	
Additional comments/description of pollution impacts:		
Located near active crop areas.		
BIOTIC EVALUATION		
, ,	tions optional. NOTE: all voucher samples must be labeled with the site from the Primary Headwater Habitat Assessment Manual)	
1 1 1	d? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N	
Comments Regarding Biology:		

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm SITE NUMBER DOH-038 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 1.41 LENGTH OF STREAM REACH (ff) 4,535 LAT. 41.16006 LONG82.93184 RIVER CODE RIVER MILE	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
DATE 10/03/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	ıs
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS:	′
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] ARTIFICIAL [3 pts]	etric ints strate = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 10.00% (A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 SUbstrate Percentage 100% (B) A + E	В
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 30 centimeters [20 pts]	•
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts] 15	5
OMMENTS Limited pools on the eastern edge near woodlot MAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] Bank Width Max=	dth
COMMENTS AVERAGE BANKFULL WIDTH (meters): 3.40	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Wetland Woderate 5-10m Residential, Park, New Field Open Pasture, Row Crop None Residential, Park, New Field Open Pasture, Row Crop Mining or Construction COMMENTS Located between agricultural areas. but right bank has woodlot along part of course FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 7 1.0 2.0 3.0 >3	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:10/02/16Quantity:0.06
Photograph Information: 5 photos, 3 photos looking upstream and 2 looking downstream
Elevated Turbidity? (Y/N): N Canopy (% open): 50%
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) N Voucher? (
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW Coogle earth





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-040 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²) 3.2	23
LENGTH OF STREAM REACH (ft) 7,873 LAT. 41.16125 LONG82.94440 RIVER CODE RIVER MILE	
DATE 10/03/16 SCORER BJS COMMENTS	-
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
TYPE PERCENT TYPE PERCENT	Metri Point
BLDR SLABS [16 pts]	FOIII
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substra Max = 4
COBBLE (65-256 mm) [12 pts]	
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ O% ☐ ☐ ARTIFICIAL [3 pts] ☐ O% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	14
Total of Percentages of 10.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
, ,	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
✓ □ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	00
The Withert on Minder of M	30
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 25	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfu Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	00
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.80	20
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Field Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	þ
None Fenced Pasture Mining or Construction COMMENTS Located between agricultural areas, with portion in forested valley.	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Stream Flowing Dry channel, isolated pools, no flow (intermittent) Dry channel, no water (Ephemeral)	
Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	
Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/02/16 Quantity: 0.06
Photograph Information: 2 photos, 1 photo looking upstream and 1 looking downstream
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW Coogless to Coogle





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-041 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²)	.37
LENGTH OF STREAM REACH (ft) 6,838 LAT. 41.17337 LONG82.96515 RIVER CODE RIVER MILE	
DATE 10/03/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	UUEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	HHEI Metric
□ □ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	13
SAND (<2 mm) [6 pts]	
Total of Percentages of 5.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
✓	25
OMMENTS Deepest pool near culverted farm road crossing MAXIMUM POOL DEPTH (centimeters): 22	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (< 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	WIGA = 50
COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00	20
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Field Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	pp
None Fenced Pasture Mining or Construction	
COMMENTS Located between agricultural areas	-
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	1
COMMENTS_	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 3.0 3.0 0.5 1.5 2.5 3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/1	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:10/02/16Quantity:0.06
Photograph Information: 3 photos, 1 photo looking upstream and 1 looking downstream and 1 of nearby crossing
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
BIOTIC EVALUATION
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW -
Google earth N





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-042 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²	3.50
LENGTH OF STREAM REACH (ft) 407 LAT. 41.16865 LONG82.95157 RIVER CODE RIVER MILI	
DATE 10/03/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO F	RECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxe	s HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 35%	Point
BOULDER (>256 mm) [16 pts]	Substrat
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ ☐ 0%	Max = 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	14
Total of Percentages of (A) Substrate Percentage (B)	A
Bldr Slabs, Boulder, Cobble, Bedrock Check	_ A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 5	J
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMMENTS MAXIMUM POOL DEPTH (centimeters): 10	ا
instantant of the continuous o	
	Bankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts]	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankful Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
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3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1.20}{2}\$ NOTE: River Left (L) and Right (R) as looking downstream	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20 This information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10 m Mature Forest, Wetland Conservation Tillager	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH ELOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Check ONLY one box): > 1.0 m (-1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.20 1.20	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream of the completed of the completed of the complete of the comp	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream and RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field Mining or Construct Mining or Construct	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY □ Wide >10m □ Mature Forest, Wetland □ Conservation Tillage □ Moderate 5-10m □ Immature Forest, Shrub or Old □ Urban or Industrial □ Narrow <5m □ Residential, Park, New Field □ Open Pasture, Row □ None □ Fenced Pasture □ Mining or Construct COMMENTS riparian buffer primarily on south side of ditch, before CR 38.	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream and RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field Mining or Construct Mining or Construct	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream of the strength of t	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream* RIPARIAN WIDTH RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial Field Vivan or Industrial Vivan	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream **A RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field None Fenced Pasture COMMENTS riparian buffer primarily on south side of ditch, before CR 38. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters): L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Wish or Industrial Field None COMMENTS Residential, Park, New Field Perced Pasture COMMENTS Mining or Construct COMMENTS Tiparian buffer primarily on south side of ditch. before CR 38. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream **A RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field None Fenced Pasture COMMENTS riparian buffer primarily on south side of ditch, before CR 38. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box):	Width Max=30 15 Crop ion ent)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: EWH Name:	_ Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map P	Page: NRCS Soil Map Stream Order
County: Seneca Township / City:	
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/02/16 Photograph Information: 2 photos, 1 photo looking upstream and 1 looking downstream	Quantity: 0.06
N coor	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Additional comments/description of pollution impacts:	
Located near active crop areas.	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Pri Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology:	mary Headwater Habitat Assessment Manual) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R Include important landmarks and other features of interest for site evaluation and Google earth	

Save as pdf





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SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-043 RIVER BASIN Beaver creek DRAINAGE AREA (mi²)	1.77
LENGTH OF STREAM REACH (ft) 869 LAT. 41.16787 LONG82.93811 RIVER CODE RIVER MILE	
DATE 10/03/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 45%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts] 0%	Substrat
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%	14
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	0
OMMIENTS MAXIMUM POOL DEPTH (centimeters): 0	
	Donkful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
	0.5
COMMENTS AVERAGE BANKFULL WIDTH (meters): 3.00	25
This information much also be accompleted	
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Field Chen Pacture Row Co	°OD
Norrow CFm Posidontial Park New Field Open Pasture, Row Cl	
Narrow <5m Residential, Park, New Field VV	
None Residential, Park, New Field V None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27.	
None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27.	
None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten	1
None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) None Fenced Pasture Mining or Construction COMMENTS Mining or Construction Mining or Construction Mining or Construction Mining or Construction Comments Mining or Comments Mining or Comments Mining or Comments Mining or Comments Mining Mining or Comments Mining or Comments Mining Mining or Comments Mining or Comments Mining	1
None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral) COMMENTS Dry channel, no water (Ephemeral)	1
None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral)	1
None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	1
None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 >3 STREAM GRADIENT ESTIMATE	t)
None Fenced Pasture Mining or Construction COMMENTS riparian buffer primarily on west side of ditch. before CR 27. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 7 1.0 2.0 3.0 0.5 3.0 >3	t)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/02/16 Quantity: 0.06
Photograph Information: 2 photos, 1 photo looking upstream and 1 looking downstream
Elevated Turbidity? (Y/N): N Canopy (% open): 60%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW





38

SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-044 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	0.20
LENGTH OF STREAM REACH (ft) 3,703 LAT. 41.16944 LONG82.92596 RIVER CODE RIVER MILE	
DATE 10/03/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (May of 88) Add to be predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] 0% LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ 0% ☐ ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	13
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock 610070 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
Maximum Bool Donth (Massure the maximum pool donth within the 64 meter (200 ft) avaluation reach at the time of	Bool Don
 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 	Pool Dep Max = 3
> 30 centimeters [20 pts]	
> 22.5 = 30 cm [30 pts]	O
OMMIENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTSAVERAGE BANKFULL WIDTH (meters): 3.00	25
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Moderate 5-10m Field Urban or Industrial	
Open Posture Pow Co	on
Narrow <5m Residential, Park, New Field Open Pasture, Row Ci	•
Onen Pacture Pow Co	•
Narrow <5m Residential, Park, New Field Open Pasture, Row Company None Fenced Pasture Mining or Construction COMMENTS	•
Narrow <5m Residential, Park, New Field Open Pasture, Row Company None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten	1
Narrow <5m Residential, Park, New Field Open Pasture, Row Commendation COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	1
Narrow <5m Residential, Park, New Field Open Pasture, Row Color None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	1
Narrow <5m Residential, Park, New Field Open Pasture, Row Company Company Construction Residential, Park, New Field Open Pasture, Row Company Company Construction Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral) Comments SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	1
Narrow <5m Residential, Park, New Field Open Pasture, Row Company None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 >3 None 0.5 1.5 2.5 >3	1
Narrow <5m Residential, Park, New Field Open Pasture, Row Company None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0	1.

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:10/02/16 Quantity:0.06
Photograph Information: 2 photos, 1 photo looking upstream and 1 looking downstream
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW FLOW



Google earth



SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-046 RIVER BASIN Beaver creek DRAINAGE AREA (mi²)	.38
LENGTH OF STREAM REACH (ft) 405 LAT. 41.17494 LONG82.91159 RIVER CODE RIVER MILE	
DATE 10/03/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metric
□ □ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts]	Max = 40
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%	13
SAND (<2 mm) [6 pts] 40% ARTIFICIAL [3 pts] 0%	
Total of Percentages of 0.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	4.5
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMMIENTS MAXIMUM POOL DEPTH (centimeters): 5	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.10	15
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY SHOTE. River Left (L) and Right (R) as looking downstream of the control of t	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Field —— Open Posture Pow Cr	an.
Residential, Park, New Field	ρþ
None Fenced Pasture Mining or Construction COMMENTS	
	-
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS	
	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
✓ 0.5	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Als	o be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream _
CWH Name:	Distance from Evaluated Stream
EWH Name: _	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Town	ship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:	10/02/16 Quantity: 0.06
Photograph Information: 1 looking downstream	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	0%
Were samples collected for water chemistry? (Y/N): (Note la	ab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	t, please explain:
, , , , , , , , , , , , , , , , , , , ,	
<u> </u>	
Additional comments/description of pollution impacts:	
Located near active crop areas.	
BIOTIC EVALUATION	
()	er collections optional. NOTE: all voucher samples must be labeled with the site ta sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders C Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aqua	Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	
DRAWING AND NAPPATIVE DESCRIPTION	I OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-047 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	.70
LENGTH OF STREAM REACH (ft) 1,322 LAT. 41.17689 LONG82.93021 RIVER CODE RIVER MILE	
DATE 10/03/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING:	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts]	Substra
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt]	Max = 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ SAND (<2 mm) [6 pts] ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	13
Total of Percentages of 10 00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
☐ > 22.5 - 30 cm [30 pts] ☐ < 5 cm [5 pts] ☐ NO WATER OR MOIST CHANNEL [0 pts]	15
OMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfu Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.40	20
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ Wide >10m ☐ Mature Forest, Wetland ☐ Conservation Tillage ☐ Moderate 5-10m ☐ Immature Forest, Shrub or Old ☐ Urban or Industrial	
Field — Open Pasture Pow Crr	nn
Narrow <5m Residential, Park, New Field VIV	۳
None Fenced Pasture Mining or Construction COMMENTS Minor woodlot to the west on the south side of TR136.	-
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	1
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	'
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	-
COMMENTS_ SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	- -
COMMENTS	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/02/16 Quantity: 0.06
Photograph Information: 2 photos taken, 1 looking downstream and 1 upstream
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas and a road.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW Cooleants





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-051 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	1.02
LENGTH OF STREAM REACH (ft) 3,091 LAT. 41.19334 LONG82.92075 RIVER CODE RIVER MILE	
DATE 10/04/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] DW LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% 0%	Substrat
COBBLE (65-256 mm) [12 pts]	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	12
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock Gleeck Score of Two Most Predominate Substrate Types: 9 Total Number of Substrate Types: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts]	
> 10 - 22.5 cm [25 pts]	0
OMMENTS MAXIMUM POOL DEPTH (centimeters): 0	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.10	15
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Moderate 5-10m Field Desidential Basic New Field Open Pasture, Row Cro	00
Narrow <5m Residential, Park, New Field VIV	op
None Fenced Pasture Mining or Construction COMMENTS Narrow strip of riparian veg on left bank, voung willows and shrubs.	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)) <u>l</u>
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)) [
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)) [
Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 1.5 2.5)
Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0	1

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name: _	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEI	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map F	Page: NRCS Soil Map Stream Order
County: Seneca Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 10/02/16	Quantity: 0.06
Photograph Information: 2 photos taken, 1 looking downstream and 1 upstream	
Elevated Turbidity? (Y/N): N Canopy (% open): 85%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id.	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Located near active crop areas.	
·	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional	il. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Pr	imary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N	Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebra	
Comments Regarding Biology:	

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







	THIEF GOOTE (Sum of metrics 1, 2, 3) !
SITE NAME/LOCATION Apex Republic W	
SITE NUMBER_	OH-055 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²) 1.19
LENGTH OF STREAM REACH (ft) 4,033	
DATE 10/05/16 SCORER BJS	COMMENTS
NOTE: Complete All Items On This For	n - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NA MODIFICATIONS:	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of every state of	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes
	ant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
	ERCENT TYPE PERCENT Point
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]	0% SILT [3 pt] 50% FOIII 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%
BEDROCK [16 pt]	0% Substra
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] 0%
GRAVEL (2-64 mm) [9 pts]	10% MUCK to ptel 0%
SAND (<2 mm) [6 pts]	40% ARTIFICIAL [3 pts] 0% 12
Total of Percentages of	Substrate Percentage 4009/ (B)
Bldr Slabs, Boulder, Cobble, Bedrock _	0.00% (A) Substrate Percentage 100% (B) A + B
SCORE OF TWO MOST PREDOMINATE SUBS	TRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3
2. Maximum Pool Depth (Measure the m	paximum pool depth within the 61 meter (200 ft) evaluation reach at the time of
	d culverts or storm water pipes) (Check ONLY one box):
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]	S cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]
OMMENTS Moist channel	MAXIMUM POOL DEPTH (centimeters): 0
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts]	average of 3-4 measurements) (Check <i>ONLY</i> one box): Bankfu
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (<=3' 3") [5 pts] Max=3
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 0.90
COMMENTS	AVERAGE BANKFULL WIDTH (Illeters).
RIPARIAN ZONE AND FLOODF	This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆
RIPARIAN WIDTH	FLOODPLAIN QUALITY
L R (Per Bank)	L R (Most Predominant per Bank) L R
Wide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop
==	
✓ None COMMENTS	Fenced Pasture Mining or Construction
o o minical trade	<u></u>
	luation) (Check ONLY one box):
Stream Flowing Subsurface flow with isolated poo	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)
COMMENTS_	Englanding, no water (Ephonolar)
SINUOSITY (Number of bends p None	per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): 1.0
0.5	1.5
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)
i lat (0.0 to 100 to)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:10/02/16 Quantity:0.06
Photograph Information: 2 photos taken, 1 looking upstream and 1 looking downstream
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas and a road.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW →





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-057 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²)	.16
LENGTH OF STREAM REACH (ft) 925 LAT. 41.18995 LONG82.94244 RIVER CODE RIVER MILE	
DATE 10/05/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL □ NONE / NATURAL CHANNEL □ RECOVERED □ RECOVERING □ RECENT OR NO RECOVERED □ RECENT OR NO RECEN	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
BLDR SLABS [16 pts]	r Onit.
BEDROCK [16 pt]	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	IIIUX 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	13
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock O.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IVIAX = 3
☐ > 22.5 - 30 cm [30 pts] ☐ < 5 cm [5 pts] ☐ NO WATER OR MOIST CHANNEL [0 pts]	0
OMM ENTS Moist channel MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Moderate 5-10m	ın.
Narrow <5m Residential, Park, New Field	iΡ
None Fenced Pasture Mining or Construction COMMENTS	
Notice Tenedal astate Willing of Constituction	
COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Teneed I astare Willing of Constitution Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 None No	

ADDITIONAL STREAM INFORMATION (This Information Must Also	o be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
_	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Town:	ship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:	10/02/16 Quantity: 0.06
Photograph Information: 1 looking downstream	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): N (Note la	b sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not	, please explain:
in the camping reconstants of the calcum (1117)	, p. 645 5 5 p. 645 5
Additional comments/description of pollution impacts:	
Located near active crop areas and a road.	
ID number. Include appropriate field dat Fish Observed? (Y/N) N Salamanders O	er collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual) Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-058 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	15.07
LENGTH OF STREAM REACH (ft) 3,753 LAT. 41.22082 LONG82.91110 RIVER CODE RIVER MILE	
DATE 10/05/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] D LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	13
SAND (<2 mm) [6 pts] 40% ARTIFICIAL [3 pts] 0%	
Total of Percentages of 0.00% (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
→ 30 centimeters [20 pts] → 5 cm - 10 cm [15 pts] → 22.5 - 30 cm [30 pts] → 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
OMMIENTS Moist channel MAXIMUM POOL DEPTH (centimeters): 0	
2 DANK FILL WIDTH (Massured on the greener of 2.4 massurements) (Check ON View hour)	Pankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.40	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 2.40 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Noderate 5-10m	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 2.40 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Proceedings of the service o	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30 20
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 2.40 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Proceedings of the service o	Width Max=30 20
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 2.40 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS Minor riparian buffer along banks.	Width Max=30 20
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10 m (<=3' 3") [5 pts] 2.40 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide > 10 m Mature Forest, Wetland Moderate 5-10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field V Narrow <5m Residential, Park, New Field None COMMENTS Minor riparian buffer along banks. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitter)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field None Residential, Park, New Field Open Pasture, Row C Omeration COMMENTS Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermitter Dry channel, no water (Ephemeral))	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream Mature Forest, Wetland Wide > 10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field Vi Narrow < 5m None COMMENTS Minor riparian buffer along banks. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Vi Narrow <5m Residential, Park, New Field Vi None COMMENTS Minor riparian buffer along banks. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Immature Forest, Wetland Woderate 5-10m Residential, Park, New Field V Narrow <5m Residential, Park, New Field V Open Pasture, Row C COMMENTS Minor riparian buffer along banks. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/02/16 Quantity: 0.06
Photograph Information: 1 looking across stream at typical section.
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:
Additional comments/description of pollution impacts:
Located near active crop areas.
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW -







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-059 RIVER BASIN Pickerel Creek DRAINAGE AREA (mi²)	.90
LENGTH OF STREAM REACH (ft) 4,369 LAT. 41.26611 LONG82.90526 RIVER CODE RIVER MILE	
DATE 10/05/16 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Insti	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
TYPE PERCENT TYPE PERCENT PERCENT	Metri
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ 0% ☐ ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	13
Total of Percentages of O.00% (A) Substrate Percentage 100% (B) Check	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 Check TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max-50
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90	5
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90	5
This information must also be completed	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (R) as looking downstream \$\frac{1}{2}River River	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Immature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field Open Pasture, Row Cr	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Immature Forest, Shrub or Old Field Urban or Industrial Narrow <5m Residential, Park, New Field ✓ ✓ Open Pasture, Row Cr	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Immature, Row Cr Narrow <5m Residential, Park, New Field Open Pasture, Row Cr None Fenced Pasture Mining or Construction COMMENTS Between crop areas. FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None Fenced Pasture COMMENTS Between crop areas.	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Violety None COMMENTS FILOW REGIME (At Time of Evaluation) COMMENTS This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Onservation Tillage Urban or Industrial Open Pasture, Row Cr Violety Open Pasture Mining or Construction COMMENTS Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral) COMMENTS	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Narrow <5m Residential, Park, New Field Open Pasture, Row Cr None Residential, Park, New Field Mining or Construction COMMENTS Between crop areas. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) and Right (R) as looking downstream ★ RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looki	op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY %NOTE: River Left (L) and Right (R) as looking downstream % RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Narrow <5m Residential, Park, New Field Open Pasture, Row Cr None Fenced Pasture Mining or Construction COMMENTS Between crop areas. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	op

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Clyde NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Sandusky Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/02/16 Quantity: 0.06
Photograph Information: 1 looking downstream.
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts: Located near active crop areas. BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW





SITE NAME/LOCATION Apex republic Wind Farm	
SITE NUMBER DOH-100 RIVER BASIN Spicer Creek DRAINAGE AREA (mi²)).21
LENGTH OF STREAM REACH (ft) 460 LAT. 41.21393 LONG83.12249 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
TYPE PERCENT TYPE PERCENT	Metri Point
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BUDR SLABS [16 pts] SILT [3 pt] T5% LEAF PACK/WOODY DEBRIS [3 pts] 0%	Politi
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substra Max = 4
COBBLE (65-256 mm) [12 pts]	Illiax = 3
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ O% ☐ ☐ ARTIFICIAL [3 pts] ☐ O% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	12
Total of Percentages of 0.00% (A) Substrate Percentage 4.00% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9	"
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 5 cm - 5 cm [5 pts] < 5 cm [5 pts]	l
✓ □ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	25
OMM ENTS Fed by pond; depth estimated MAXIMUM POOL DEPTH (centimeters): 15	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfu
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	IVIAX-30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Industrial Urban or Industrial	
Field — Open Pasture Pow Cr	OD
Residential, Park, New Field	
None Fenced Pasture Mining or Construction COMMENTS Sits within active pasture	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	.)
COMMENTS COMMENTS	1
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
■ None ■ 1.0 ■ 2.0 ■ 3.0	
0.5 1.5 2.5 >3	
□ 0.5 □ 1.5 □ 2.5 □ >3	
	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation: Quantity:
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): Y Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts:
Located within active grazing area with water source being pond POH-001
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW Coogle earth





SITE NAME/LOCATION Apex republic Wind Farm	
SITE NUMBER DOH-101 RIVER BASIN Indian Creek DRAINAGE AREA (mi²) 0.6	59
LENGTH OF STREAM REACH (ft) 2,635 LAT. 41.22291 LONG83.11232 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	ctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	VERY
BLDR SLABS [16 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	7
	Pool Dept Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 10	
OMMENTSMAXIMOM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ Wide >10m ☐ Mature Forest, Wetland ☐ Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
None Fenced Pasture Mining or Construction	
COMMENTS Sits between road and crop area	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): None 0.5 1.0 2.0 3.0 >3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)	ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream _
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):Y Date of last precipitation: Quantity:
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): _Y Canopy (% open):100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
<u> </u>
Additional comments/description of pollution impacts:
Nearby road and crop areas
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with to ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
· · · · · · · · · · · · · · · · · · ·
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's locatio
75







SITE NAME/LOCATION Apex republic Wind Farm	
SITE NUMBER DOH-102 RIVER BASIN Indian Creek DRAINAGE AREA (mi²)	0.18
LENGTH OF STREAM REACH (ft) 2,791 LAT. 41.22222 LONG83.10502 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 94%	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] D LEAF PACK/WOODY DEBRIS [3 pts] 1% 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%	15
SAND (<2 mm) [6 pts] 0% ARTIFICIAL [3 pts] 0%	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfu
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH EN (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 1.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) U R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 1.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Conservation Tillage Immature Forest, Shrub or Old Field Conservation Provided Urban or Industrial Field	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field None Fenced Pasture COMMENTS Sitsbetween crop areas for majority, limited stretch near woodlot at edge of property	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN Forest, Wetland Mature Forest, Wetland Moderate 5-10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field Narrow <5m Residential, Park, New Field COMMENTS Sitsbetween crop areas for majority, limited stretch near woodlot at edge of property FLOW REGIME (At Time of Evaluation) (Check ONL Yone box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitted)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Mature Forest, Shrub or Old Immature Forest, Shrub or Old Wide >10 m Residential, Park, New Field Open Pasture, Row C None COMMENTS Sitsbetween crop areas for maiority. limited stretch near woodlot at edge of property FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) None moderate 5-10 m Find Moderate 5-10 m Noist Channel, isolated pools, no flow (Intermitted Dry channel, no water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row C COMMENTS Sitsbetween crop areas for majority, limited stretch near woodlot at edge of property FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS No 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] 1.00 m (<=3' 3") [5 pts] 2 1.0 m (<=3' 3") [5 pts] 3 1.0 m (<=3' 3") [5 pts] 4 8") [15 pts] 5 1.0 m (<=3' 3") [5 pts] 6 1.0 m (<=3' 3") [5 pts] 7 1.0 m (<=3' 3") [5 pts] 7 2 1.0 m (<=3' 3") [5 pts] 7 3 1.0 m (<=3' 3") [5 pts] 7 4 8") [15 pts] 7 2 1.0 m (<=3' 3") [5 pts] 7 3 1.0 m (<=3' 3") [5 pts] 7 4 8") [15 pts] 7 3 1.0 m (<=3' 3") [5 pts] 7 4 8") [15 pts] 8 1.0 m (<=3' 3") [5 pts] 9 1.0 m (<=3' 3") [5 p	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V None COMMENTS Sitsbetween crop areas for maiority. limited stretch near woodlot at edge of property FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ★ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Viant Penced Pasture COMMENTS Sitsbetween crop areas for maiority, limited stretch near woodlot at edge of property FLOW REGIME (At Time of Evaluation) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V None COMMENTS Sitsbetween crop areas for maiority. limited stretch near woodlot at edge of property FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream _
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: Quantity:
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): Y Canopy (% open): 95%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW> Google earth





SITE NAME/LOCATION Apex republic Wind Farm	
SITE NAME/LOCATION APEX TOPAGNIC VINIA T ATM SITE NUMBER DOH-103 RIVER BASIN Indian Creek DRAINAGE AREA (mi²)	0.77
LENGTH OF STREAM REACH (ft) 1,255 LAT. 41.22447 LONG83.09795 RIVER CODERIVER MILE	
DATE 04/08/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	ECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ □ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 15% MUCK [0 pts] 0%	15
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	, O
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (-1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	IVIAX-30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.00	
]
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Field Field Urban or industrial	•
Narrow <5m Residential, Park, New Field Open Pasture, Row	Crop
None Fenced Pasture Mining or Construction COMMENTS Sits between crop areas	on
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitte	ent)
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	
COMMENTS_	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
0.5 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10	ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 04/05/17 _ Quantity: 0.54
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW Google earth

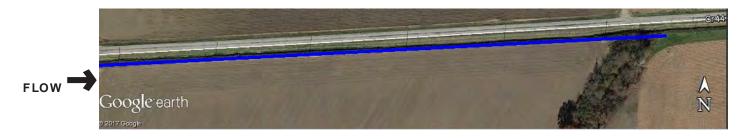




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SITE NAME/LOCATION Apex republic Wind Farm	
SITE NUMBER DOH-104 RIVER BASIN Spicer Creek DRAINAGE AREA (mi²)	.04
LENGTH OF STREAM REACH (ft) 1,353 LAT. 41.21185 LONG83.09044 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT SILT [3 pt] BULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] O% CLAY or HARDPAN [0 pt]	HHEI Metric Points Substrate Max = 40
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] SAND (<2 mm) [6 pts] MUCK [0 pts] ARTIFICIAL [3 pts] 0%	15
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock O.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Pool Depth Max = 30
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Check ONL Y one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field Open Pasture, Row Cro	00
Narrow <5m Residential, Park, New Field V Mining or Construction COMMENTS Sits between crop area and road	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS The control of Evaluation (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): None 1.0 2.0 3.0 3.0 3.0 3.0 3.0	
STREAM GRADIENT ESTIMATE	

ADDITIONAL STREAM INFORMATION (This Information N	flust Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Sc	ore (If Yes, Attach	h Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)		
WWH Name:		Distance from Evaluated Stream
CWH Name:		Distance from Evaluated Stream _
EWH Name:		Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDIN	G THE ENTIRE WATERSHED A	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	NRCS Soil Map Pag	ge: NRCS Soil Map Stream Order
County: Seneca	Township / City:	
MISCELLANEOUS		
Base Flow Conditions? (Y/N):_Y Date of last precipita	tion: 04/05/17	Quantity: 0.54
Photograph Information: Representative Photos Taken		
Elevated Turbidity? (Y/N): N Canopy (% open):	100%	
Were samples collected for water chemistry? (Y/N): N	(Note lab sample no. or id. an	nd attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (m	ng/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y	If not, please explain:	
, <u>, , , , , , , , , , , , , , , , , , </u>		
Additional comments/description of pollution impacts:		
Nearby road and crop areas		
BIOTIC EVALUATION		
N		
Performed? (Y/N): (If Yes, Record all observations	·	NOTE: all voucher samples must be labeled with the ary Headwater Habitat Assessment Manual)
		N .
Fish Observed? (Y/N) N Voucher? (Y/N) N Salam Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N)	anders Observed? (Y/N) N Aquatic Macroinvertebrates	Voucher? (Y/N)
Comments Regarding Biology:		N
-		
DRAWING AND NADRATIVE DESCRI	IDTION OF STREAM RE	ACH (This must be sompleted):
DRAWING AND NARRATIVE DESCRI		
Include important landmarks and other features of in	terest for site evaluation and	a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-105 RIVER BASIN Sugar Creek DRAINAGE AREA (mi²) 0.48	
LENGTH OF STREAM REACH (ft) 2,307 LAT. 41.20330 LONG83.09171 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ons
STREAM CHANNEL	RY
TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] COBBLE (65-256 mm) [12 pts] COBBLE (2 64 mm) [0 pt] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] COBBLE (65-256 mm) [12 pts] COBBLE (2 64 mm) [0 pt] MICK [0 ptc] MICK [0 ptc] MICK [0 ptc] MICK [0 ptc]	HHEI Metric Points ubstrate lax = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock O.00% (A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 Substrate Percentage 100% (B) Check 100% TOTAL NUMBER OF SUBSTRATE TYPES: 3	A + B
	ool Dept lax = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	ax - 50
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	25
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 20	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull Width Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m This information must also be completed NOTE: River Left (L) and Right (R) as looking downstream Mature Left (L) and Right (R) as looking downstream Mature Left (L) and Right (R) as looking downstream Mature Forest, well and Right (R) as looking downstream Mature Forest, Shrub or Old Property of the Completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) Moderate 5-10m RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Diparty of the Completed of the Complete Co	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop None Fenced Pasture Mining or Construction COMMENTS Sits between crop areas	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS The control of Evaluation (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): None 1.0 2.0 3.0 >3 1.5 >3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 04/05/17 Quantity:_ 0.54
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
BIOTIC EVALUATION N Output N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Voucher
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
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SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-106 RIVER BASIN Sugar Creek DRAINAGE AREA (mi²) 0.	.00
LENGTH OF STREAM REACH (ft) 664 LAT. 41.19786 LONG83.09970 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL □ NONE / NATURAL CHANNEL □ RECOVERED □ RECOVERING □ RECENT OR NO RECOMMODIFICATIONS:	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] SILT [3 pt] BOW LEAF PACK/WOODY DEBRIS [3 pts] 0%	Points
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	Max - 4
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 5% MUCK [0 pts] 0% 0% 0%	12
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts]	E
The With Exercision (20 ptg)	5
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 5	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Wide >10m ✓ Moderate 5-10m ✓ Moderat	
Field — Open Pasture Row Cro	a
Residential, Park, New Field	
None Fenced Pasture Mining or Construction COMMENTS Farm road drainage channel	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None	
None 2.0 3.0 >3 1.5 2.5	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 04/05/17 _ Quantity: 0.54
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 40%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts:
Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-107 RIVER BASIN Sugar Creek DRAINAGE AREA (mi²)	0.00
LENGTH OF STREAM REACH (ft) 660 LAT. 41.19783 LONG83.09965 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECO	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts] 0% SILT [3 pt] 80%	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] DW LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0% SAND (<2 mm) [6 pts] 15% ARTIFICIAL [3 pts] 0%	12
Tatal of Benevatary of (2)	
Bldr Slabs, Boulder, Cobble, Bedrock Check	A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	F
The Witter on white proj	5
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 5	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts]	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Mature Forest, Wetland Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10 m Mature Forest, Wetland Wide >10 m Moderate 5-10 m Narrow <5 m Residential, Park, New Field None COMMENTS Farm road drainage channel	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Wide >10m Mature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5m Narrow <5m Residential, Park, New Field Flow REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] > 1.0 m (<=3' 4" 8") [15 pts] > 1.0 m (> 10 m (> 10 m (Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.90 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH Wide >10 m (Most Predominant per Bank) Wide >10 m (Most Predominant per Bank) Wide >10 m (Most Predominant per Bank) Residential, Park, New Field Narrow <5 m (Per Bank) Nar	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (< 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide > 1.0 m (<=3' 3") [5 pts] 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.0 m (<=3' 3") [5 pts] This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Shrub or Old Immature Forest, Shrub or Old Wiban or Industrial Narrow <5m Residential, Park, New Field None COMMENTS Farm road drainage channel FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (< 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
Distance from Fusional Observa
CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 04/05/17 _ Quantity: 0.54
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 40%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SHE NAME/LOCATION IADEX REDUDIIC WITH FAITH	
SITE NAME/LOCATION Apex Republic Wind Farm SITE NUMBER DOH-108 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.0	00
LENGTH OF STREAM REACH (ft) 279 LAT. 41.22916 LONG83.04328 RIVER CODE RIVER MILE	
DATE 04/11/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMMODIFICATIONS:	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D LEAF PACK/WOODY DEBRIS [3 pts] O% FINE DETRITUS [3 pts] O%	Substrat
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ ☐ 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%	12
SAND (<2 mm) [6 pts]	
Total of Percentages of 0.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
, , , , , , , , , , , , , , , , , , , ,	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	4.5
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMMENTS MAXIMUM POOL DEPTH (centimeters): 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfu
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	
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3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00 This information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide > 10m Mature Forest, Wetland Conservation Tillage	Width Max=30
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3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: Rive	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts]	Width Max=30
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3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
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3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7'' - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10 m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Mature Forest, Wetland Conservation Tillage Narrow <5m Residential, Park, New Field Open Pasture, Row Crop None Fenced Pasture Mining or Construction COMMENTS Located in woodlot near farm field FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7' - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10 m Mature Forest, Wetland Moderate 5-10 m Mature Forest, Shrub or Old Field Narrow <5 m Residential, Park, New Field Open Pasture, Row Crop None COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 3.0	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes / No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream
CWH Name: _	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENT	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Townsh	ip / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	04/10/17 Quantity: 0.09
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 5%	
Were samples collected for water chemistry? (Y/N): N (Note lab	sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not, p	please explain:
, ,	
-	
Additional comments/description of pollution impacts:	
Nearby crop areas and trash disposal	
BIOTIC EVALUATION	
N (If You December 2 (VIAI))	and the street of the street o
,	collections optional. NOTE: all voucher samples must be labeled with the site sheets from the Primary Headwater Habitat Assessment Manual)
N N N N N N N N N N N N N N N N N N N	N N N N N N N N N N N N N N N N N N N
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Ob Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic	served? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER_ DOH-109 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	0.09
LENGTH OF STREAM REACH (ft) 401 LAT. 41.23451 LONG83.03599 RIVER CODE RIVER MILE	
DATE 04/11/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	HHEI
BLDR SLABS [16 pts] 0% SILT [3 pt] 80%	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D'W LEAF PACK/WOODY DEBRIS [3 pts] O'W FINE DETRITUS [3 pts] O'W O'W	Substrat
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	12
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts]	
> 22.5 = 50 cm [50 pts]	25
OMMENTS MAXIMUM POOL DEPTH (centimeters): 15	
	Double
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	NA
2 1.5 III - 5.0 III (2 9 1 - 4 0) [20 pis]	Max=30
	5
COMMENTS Narrow, recently excavated. AVERAGE BANKFULL WIDTH (meters): This information <u>must</u> also be completed	
AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{River Left (R) and Right (R) as looking downstream \$\frac{1}{2}River River Ri	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Immature Field	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.50 L R RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland L R Urban or Industrial	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Immature Field None Residential, Park, New Field Mining or Construction	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Immature Field Urban or Industrial Narrow <5m Residential, Park, New Field Open Pasture, Row Cr	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY LR (Per Bank) LR (Most Predominant per Bank) LR Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field None Residential, Park, New Field Open Pasture, Row Cr	5 op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\$ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Per Bank) Urban or Industrial Field Moderate 5-10m Mature Forest, Wetland Urban or Industrial Field Narrow <5m Residential, Park, New Field Open Pasture, Row Cr None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Most Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	5 op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m None COMMENTS FLOOWREGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing AVERAGE BANKFULL WIDTH (meters): 0.50 AVERAGE BANKFULL WIDTH	5 op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Residentian to per Bank) Residentian Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field Open Pasture, Row Cr None Residential, Park, New Field Open Pasture, Row Cr None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY PROPER BANK PROPER BANK FULL WIDTH (meters): RIPARIAN WIDTH FLOODPLAIN QUALITY PROPER BANK L R RIPARIAN WIDTH FLOODPLAIN QUALITY PROPER BANK L R RIPARIAN WIDTH PROPER BANK	5 op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream Moderate 5-10m Riparian Wide > 10m	5 op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	5 op

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/11/17 Quantity: 0.05
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 90%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby crop areas and roads located upstream
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
FLOW Google earth



SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-110 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.	.00
LENGTH OF STREAM REACH (ft) 119 LAT. 41.21454 LONG83.04385 RIVER CODE RIVER MILE	
DATE 04/12/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] SILT [3 pt] SSILT [3 pt]	FUIII
BEDROCK [16 pt]	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] MUCK [0 pts] ARTIFICIAL [3 pts] 0% 0%	11
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 2	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	5
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 5	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
<pre></pre>	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.50	5
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Image Industrial Urban or Industrial	
Field — Open Pasture Pow Cro	q
Narrow <5m Residential, Park, New Field D	
None Fenced Pasture Mining or Construction COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	
COMMENTS COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/11/17 Quantity: 0.05
Dase Flow Conditions: (1714) Date or last precipitation Quantity
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): _N Canopy (% open):100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts: Nearby crop areas and roads. BIOTIC EVALUATION N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N

DRAWING AND NADDATIVE DESCRIPTION OF STDEAM DEACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW Coodle earth Coodle earth





	Title Coole (sum of metrics 1, 2, 3) :
SITE NAME/LOCATION Apex Republic W	
SITE NUMBER_	OH-111 RIVER BASIN Beaver creek DRAINAGE AREA (mi²) 0.44
LENGTH OF STREAM REACH (ft) 1,289	LAT. 41.21310 LONG83.04054 RIVER CODE RIVER MILE
DATE 04/12/17 SCORER BJS	COMMENTS
NOTE: Complete All Items On This Form	n - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NAT MODIFICATIONS:	TURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of ever	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes
	ant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
	ERCENT TYPE PERCENT Metri
BLDR SLABS [16 pts]	0% SILT [3 pt] 85% Point
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0% Substra
BEDROCK [16 pt]	Max = 4
COBBLE (65-256 mm) [12 pts]	SEAT OF FRANCE PART [S PK]
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]	10% MUCK [0 pts] 0% 0% 12
SAND (<2 mm) [0 pts]	AKTII TOTAL [5 pts]
Total of Percentages of	0.00% (A) Substrate Percentage 100% (B) A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBS	
SCORE OF TWO MOST PREDOMINATE SUBS	TOTAL NUMBER OF SUBSTRATE TIPES.
	Pool Department pool depth within the 61 meter (200 ft) evaluation reach at the time of
	d culverts or storm water pipes) (Check ONLY one box): Max = 3
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]
OMMENTS	MAXIMUM POOL DEPTH (centimeters): 15
3. BANK FULL WIDTH (Measured as the	average of 3-4 measurements) (Check ONLY one box): Bankfu
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (<=3' 3") [5 pts] Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 0.70
COMMENTS	AVEITAGE BAIRTI GLE WIDTH (Illetels).
DIDADIAN ZONE AND ELOODE	This information must also be completed
RIPARIAN ZONE AND FLOODF RIPARIAN WIDTH	PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY
L R (Per Bank)	L_R_ (Most Predominant per Bank)L_R_
₩ide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
	—— Field
Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop
✓	Fenced Pasture Mining or Construction
COMMENTS	
FLOW REGIME (At Time of Eva	luation) (Check ONLY one box):
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated poo	
COMMENTS_	
SINI IOSITY (Number of bender	per 61 m (200 ft) of channel) (Check ONLY one box):
None (Number of berids)	1.0 2.0 1.3 3.0
0.5	1.5
	1.5
STREAM GRADIENT ESTIMATE	
	1.5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation:
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts: Nearby road
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW Google earth





	Title 90010 (Sum of metrics 1, 2, 3) .
SITE NAME/LOCATION Apex Republic W	
SITE NUMBER_	
LENGTH OF STREAM REACH (ft) 1,521	LAT. 41.20533 LONG83.07134 RIVER CODE RIVER MILE
DATE 04/12/17 SCORER BJS	COMMENTS
NOTE: Complete All Items On This Form	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NAT MODIFICATIONS:	TURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY
1. SUBSTRATE (Estimate percent of eve	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes
, , ,	cant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HHI Metric Score is sum of boxes A & B.
TYPE P BLDR SLABS [16 pts]	PERCENT TYPE SILT [3 pt] PERCENT POIN
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 5%
BEDROCK [16 pt]	0% Substr
COBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]
GRAVEL (2-64 mm) [9 pts]	0% MUCK [0 pts] 0% 12
SAND (<2 mm) [6 pts]	ARTIFICIAL [3 pts]
Total of Percentages of	0.00% (A) Substrate Percentage 100% (B) A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBS	
	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of deculverts or storm water pipes) (Check ONLY one box): Max =
> 30 centimeters [20 pts]	S cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts] 25
OMM ENTS	MAXIMUM POOL DEPTH (centimeters): 15
DANK FILL MIDTH (Managed on the	Ported
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts]	e average of 3-4 measurements) (Check <i>ONLY</i> one box): Saverage of 3-4 measurements) (Check <i>ONLY</i> one box):
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (<=3' 3") [5 pts] Max=
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 1.20 15
	This information must also be completed
RIPARIAN ZONE AND FLOODE	() ()
<u>RIPARIAN WIDTH</u> L R (Per Bank)	FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R
Wide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
	Field Open Pasture, Row Crop
Narrow <5m	Residential, Park, New Field
V None COMMENTS	Fenced Pasture Mining or Construction
OOMINICIA 10	
	aluation) (Check ONLY one box):
Stream FlowingSubsurface flow with isolated poor	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)
COMMENTS_	
SINLIGSITY (Number of bonds of	per 61 m (200 ft) of channel) (Check ONI V one hov):
None Number of bends p	per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): 1.0
0.5	1.5 2.5 >3
STREAM GRADIENT ESTIMATE	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/11/17 Quantity: 0.05
Photograph Information: Representative Photos Taken
N LOON
Elevated Turbidity? (Y/N): _N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
BIOTIC EVALUATION
N N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW 169



Google earth



SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-113 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²)	1.43
LENGTH OF STREAM REACH (ft) 3,189 LAT. 41.20057 LONG82.99364 RIVER CODE RIVER MILE	
DATE 04/13/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute 1.	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERING RECOVERING RECENT OR NO RECOVERED	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] 0% SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] 0%	Points
BOULDER (>256 mm) [16 pts]	Substrat
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ ☐ 0%	Max = 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ O%	12
Total of Percentages of (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	^.b
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
✓ > 22.5 - 30 cm [30 pts] ✓ 5 cm [5 pts] ✓ > 10 - 22.5 cm [25 pts] ✓ NO WATER OR MOIST CHANNEL [0 pts]	30
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 23	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	
. 0.0 4.0 (0.1.711 - 4.01) [0.5]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters): 1.20 This information to must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A	Max=30
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) and River Left (L	Max=30
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Fenced Pasture COMMENTS **TOM REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 1.20 AVERAGE BANKFULL WIDTH (meters): 1.20 AVERAGE BANKFULL WIDTH (meters): 1.20 **TOM Regime Average Bank (R) as looking downstream ** NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY REPARIAN WIDTH RIPARIAN WIDTH	15 op
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This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None Fenced Pasture Fenced Pasture Flow REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None AVERAGE BANKFULL WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (passed on the passed on th	15 op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream ** RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cr None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3	15 op
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None Fenced Pasture Fenced Pasture Flow REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None AVERAGE BANKFULL WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (meters): 1.20 This information must also be completed RIPARIAN WIDTH (passed on the passed on th	Max=30 15

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation: 04/11/17 Quantity:0.05
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW



ENTER CALL



SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-114 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²) 0.79	9
LENGTH OF STREAM REACH (ft) 4,883 LAT. 41.19878 LONG82.99377 RIVER CODE RIVER MILE	
DATE 04/13/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	ctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	VERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ппе
	HHE! Metri
□ BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts]	Substrat
	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%	42
SAND (<2 mm) [6 pts]	12
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	max o
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
The Witter extinctor of with the Economic Copies	15
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfu
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] (Check ONLY one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20 This information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20 This information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters): 1.20 This information pust also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10 m Mature Forest, Wetland Conservation Tillage	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): I.20 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH RIPARIAN WIDTH L R (Per Bank) Wide >10 Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Work of 3-4 measurements) AVERAGE BANKFULL WIDTH (meters): 1.20 L R (Most Predominant per Bank) L R (Most Predominant per Bank) I R (Most Predominant per Bank) Moderate 5-10m Moderate 5-10m Moderate 5-10m Lighan or Industrial	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field Conservation Tillage Urban or Industrial Field	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Urban or Industrial Moderate 5-10m Residential, Park, New Field ✓ ✓ Open Pasture, Row Crop	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m	Width Max=30
SANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7' - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ⅓NOTE: River Left (L) and Right (R) as looking downstream ⅓ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Immature Forest, Shrub or Old Immature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field Popen Pasture, Row Crop None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Vi Open Pasture, Row Crop Vi None Fenced Pasture Mining or Construction COMMENTS Sinuosity (Number of bends per 61 m (200 ft) of channel) Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None Vi (Check ONLY one box): Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None Vi (Check ONLY one box): Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None Vi (Check ONLY one box): None	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field Open Pasture, Row Crop None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Vi Open Pasture, Row Crop Vi None Fenced Pasture Mining or Construction COMMENTS Sinuosity (Number of bends per 61 m (200 ft) of channel) Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None Vi (Check ONLY one box): Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None Vi (Check ONLY one box): Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None Vi (Check ONLY one box): None	Midth Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
BIOTIC EVALUATION
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW -





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SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-115 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²)	.35
LENGTH OF STREAM REACH (ft) 1,732 LAT. 41.20071 LONG83.01104 RIVER CODE RIVER MILE	
DATE 04/13/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] SILT [3 pt] BOULDER (>256 mm) [16 pts] SILT [3 pt] BEDR SLABS [16 pts] SILT [3 pt] BEDR SLABS [16 pts] SILT [3 pt] BOULDER (>256 mm) [16 pts]	Point
BEDROCK [16 pt] BEDROCK [16 pt] O% FINE DETRITUS [3 pts]	Substrat Max = 4
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt]	IVIAX - 4
☐ GRAVEL (2-64 mm) [9 pts]	13
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	0.5
The White terminal control of the time to	25
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 15	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
	20
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.60	20
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Moderate 5-10m	200
Residential, Park, New Field	þ
None Fenced Pasture Mining or Construction COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation:04/11/17 Quantity:0.05
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 60%
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):

FLOW

Google earth





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-116 RIVER BASIN Sugar Creek DRAINAGE AREA (mi²)	1.03
LENGTH OF STREAM REACH (ft) 6,657 LAT. 41.17873 LONG83.02263 RIVER CODE RIVER MILE	
DATE 04/26/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 0% MUCK [0 pts] 0%	12
SAND (<2 mm) [6 pts]	
Total of Percentages of 0.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
✓ □ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	25
OMMENTS MAXIMUM POOL DEPTH (centimeters): 15	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	'
	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] COMMENTS	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH EL R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10m Moderate 5-10m S 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 2.00 AVERAGE BANKFULL WIDTH (meters): L R (Most Predominant per Bank) L R (Most Predominant per Bank) Moderate 5-10m Moderate 5-10m Moderate 5-10m L R (Most Predominant per Bank) Moderate 5-10m Moderate 5-10m L R (Most Predominant per Bank)	Width Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field None Sign of the sign of	Width Max=30 20
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30 20
Solution	Width Max=30 20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field None None COMMENTS Stream Flowing Subsurface flow with isolated pools (Interstitial) Stream Flowing Subsurface flow with isolated pools (Interstitial) Stream Stream (>9 '7" - 4' 8") [25 pts] \$\leq 1.0 \text{ m (<=3' 3") [5 pts]} \$\leq 1.0	Width Max=30 20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH	Width Max=30 20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS Residential, Park, New Field Residential, Park, New Field Residential, Park, New Field Residential, Park, New Field Comments Wining or Construction FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30 20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) Wide >10m (≤9' 7" - 4' 8") [20 pts] L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field None Residential, Park, New Field COMMENTS Western portion has mature woods along banks. but majority does not. FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS MAVERAGE BANKFULL WIDTH (meters): 2.00 AVERAGE BANKFULL WIDTH (meters): 3.00 AVERAGE BANKFULL WIDT	Width Max=30 20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH RIPARIAN WILLIAN RIPARIAN WILLIAM RIPARIAN WILLIAM RIPARIAN WILLIAM RIPARIA	Width Max=30 20 Crop
Sinuosity (Number of bends per 61 m (200 ft) of channel)	Width Max=30 20 Crop

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Watson NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/20/17 Quantity: 0.21
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 80%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
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SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-117 RIVER BASIN Sugar Creek DRAINAGE AREA (mi²) 0	.27
LENGTH OF STREAM REACH (ft) 2,199 LAT. 41.17611 LONG83.01817 RIVER CODE RIVER MILE	
DATE 04/26/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	12
SAND (<2 mm) [6 pts]	
Total of Percentages of 0.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
✓	25
OMMENTS MAXIMUM POOL DEPTH (centimeters): 15	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90	5
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Most Predominant per Bank) L R	
Wide >10m	
Field Field	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	p
✓ None	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS_	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be C	completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	
CWH Name:	
EWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE	WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:NRC	CS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township /	City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/	20/17 Quantity: 0.21
Photograph Information: Representative Photos Taken	
Elevated Turbidity? (Y/N): _N Canopy (% open): _100%	
Were samples collected for water chemistry? (Y/N): (Note lab sam	ple no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, pleas	
is the sampling reach representative of the stream (1714) in not, pleas	е ехріані
<u> </u>	
Additional comments/description of pollution impacts:	
Nearby road and crop areas	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher colle	ections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data shee	ets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Ma	ved? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF	STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site	evaluation and a narrative description of the stream's location







	THIEF COOLS (Sum of metrics 1, 2, 3) :
SITE NAME/LOCATION Apex Republic W	/ind Farm
SITE NUMBER_D	OOH-118 RIVER BASIN Westerhouse ditch DRAINAGE AREA (mi²) 0.00
LENGTH OF STREAM REACH (ft) 834	LAT. 41.15957 LONG82.99000 RIVER CODE RIVER MILE
DATE 04/27/17 SCORER BJS	
	COMMENTS
NOTE: Complete All Items On This Form	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NA MODIFICATIONS:	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
A CURCIPATE (E. ()	
	ery type of substrate present. Check <i>ONLY</i> two predominant substrate <i>TYPE</i> boxes cant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
, , ,	ERCENT TYPE PERCENT Metri
BLDR SLABS [16 pts]	0% SILT [3 pt] 95% Point
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 5%
☐ ☐ BEDROCK [16 pt]	0% Substra O% Max = 4
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] 0%
GRAVEL (2-64 mm) [9 pts]	0% MUCK [0 pts] 0% 0%
SAND (<2 mm) [6 pts]	0% ARTIFICIAL [3 pts] 0%
Total of Percentages of	0.00% (A) Substrate Percentage 4009/ (B) A + B
Bldr Slabs, Boulder, Cobble, Bedrock	0.00% (A) Substrate Percentage 100% (B) A + B
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 2
	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of d culverts or storm water pipes) (Check ONLY one box): Pool De Max = 3
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]
OMM ENTS	MAXIMUM POOL DEPTH (centimeters): 0
3. BANK FULL WIDTH (Measured as the	e average of 3-4 measurements) (Check ONLY one box): Bankfu
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (<=3' 3") [5 pts] Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 0.50
RIPARIAN ZONE AND FLOODE	This information <u>must</u> also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆
RIPARIAN WIDTH	FLOODPLAIN QUALITY
L R (Per Bank)	L R (Most Predominant per Bank) L R
Wide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
moderate o Tom	Field —— Field
☐ ☐ Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop
☐ ✓ None	Fenced Pasture Mining or Construction
COMMENTS	
	/ (°) (O) O)(() ()
Stream Flowing	aluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated poor	
COMMENTS_	, , , , , , , , , , , , , , , , , , , ,
	per 61 m (200 ft) of channel) (Check ONLY one box):
None	1.0 2.0 3.0
None 0.5 STREAM GRADIENT ESTIMATE	1.0 1.5 2.0 2.5 3.0 >3
None 0.5	1.0 2.0 3.0

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/27/17 Quantity: 0.07
Photograph Information:Representative Photos Taken
Elevated Turbidity? (Y/N): _N Canopy (% open):
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
is the sampling reach representative of the stream (+/N) if not, please explain
Additional comments/description of pollution impacts:
Nearby road and crop areas
BIOTIC EVALUATION
N N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the s ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-119 RIVER BASIN Morrison Creek DRAINAGE AREA (m	i²) 0.31
LENGTH OF STREAM REACH (ft) 661 LAT. 41.14766 LONG82.98625 RIVER CODE RIVER MI	
DATE 04/27/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for	nstructions
STREAM CHANNEL	RECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE box	es ı HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	Max = 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	14
Total of Percentages of Percentages (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	- Paul Dar
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 5 cm - 5 cm [5 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 15	5
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfu
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Wiax-30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.0	20
This information must be a second	
This information must also be completed	Λ,
RIPARIAN WIDTH FLOODPLAIN QUALITY PANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY	A
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH LR (Most Predominant per Bank) LR	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillar	ge
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Open Pasture Porest, P	ge I
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field V Narrow <5m Residential, Park, New Field Open Pasture, Ro	ge I w Crop
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Open Pasture Porest, P	ge I w Crop
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m None Fenced Pasture COMMENTS ProodPLAIN QUALITY L R (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillar Urban or Industria Open Pasture, Ro Mining or Construct COMMENTS	ge I w Crop
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m None Fenced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Mining or Construction Tillary Anote Conservation Tillary Mature Forest, Shrub or Old Field Open Pasture, Ro Mining or Construction Check ONLY one box): Moist Channel, isolated pools, no flow (Interm	ge I w Crop ction
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m None Fenced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	ge I w Crop ction
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) PLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: ANOTE: River Left (L) and Right (R) as looking downstream: AND	ge I w Crop ction
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Riparian Field None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Per Bank) L R (Most Predominant per Bank) L R (Por Bank) L R (Per Bank) L R (Most Predominant per Bank) L R (Per Bank) L R (Pe	ge I w Crop ction
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Residentian to per Bank) Floodplain Quality Mature Forest, Wetland Forest, Wetland Field Moderate 5-10m Field Residential, Park, New Field Open Pasture, Ro Open Pasture, Ro Open Pasture, Ro Open Pasture, Ro Flow Regime (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	ge I w Crop ction
RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Ro None COMMENTS FLOW REGIME (At Time of Evaluation) Site am Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 1.0 2.0 3.0 3.0 3.0 3.7 STREAM GRADIENT ESTIMATE	ge I w Crop ction

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 04/27/17 _ Quantity: 0.07
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): Canopy (% open):100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-120 RIVER BASIN Morrison Creek DRAINAGE AREA (mi²)	0.19
LENGTH OF STREAM REACH (ft) 2,783 LAT. 41.14975 LONG82.96973 RIVER CODE RIVER MILE	
DATE 04/27/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute of the Complete All Items On This Form - Refer to This	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	ECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	ı HHEI
TYPE PERCENT TYPE PERCENT PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 20%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D LEAF PACK/WOODY DEBRIS [3 pts] 5% 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 15% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	20
SAND (<2 mm) [6 pts]	
Total of Percentages of 15.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (<=3' 3") [5 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	_
COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00	20
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Field Field	_
Narrow <5m Residential, Park, New Field Open Pasture, Row	Crop
None Fenced Pasture Mining or Construction	on
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitted)	nt)
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	
COMMENTS_	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10	ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/27/17 Quantity: 0.07
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 15%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	m	
SITE NUMBER DOH-121	RIVER BASIN Morrison Creek DRAINAGE AREA (mi²)	0.00
	.14660 LONG82.96892 RIVER CODE RIVER MILE	
04/07/47	OMMENTS	
NOTE: Complete All Items On This Form - Refer	to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
STREAM CHANNEL NONE / NATURAL CHANDIFICATIONS:	IANNEL RECOVERED RECOVERING RECENT OR NO REC	COVERY
	substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
TYPE PERCENT	ate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT	Metri
BLDR SLABS [16 pts] 0%	SILT [3 pt] 85%	Point
BOULDER (>256 mm) [16 pts] 0% BEDROCK [16 pt] 0%	LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts] 0%	Substrat
COBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]	Max = 4
GRAVEL (2-64 mm) [9 pts] 5%	MUCK [0 pts]	12
SAND (<2 mm) [6 pts] 10%	ARTIFICIAL [3 pts]	
Total of Percentages of 0.00%	(A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TY		
2. Maximum Pool Depth (Measure the maximum p	pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Por
evaluation. Avoid plunge pools from road culverts of		Pool Dep Max = 3
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	S cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
OMM ENTS_	MAXIMUM POOL DEPTH (centimeters): 0	ب ا
OWN EAT 13	MAXIMOM FOOL BLF III (centimeters).	
		l ——
3. BANK FULL WIDTH (Measured as the average of		Bankfu
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	of 3-4 measurements) (Check <i>ONLY</i> one box): > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] < 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] < 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS T RIPARIAN ZONE AND FLOODPLAIN QUA	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) L R	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ DPLAIN QUALITY (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUARINATION PROPERTY PROPERT	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shruh or Old	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUAR RIPARIAN WIDTH L R (Per Bank) L R	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70 This information must also be completed ALITY ❖NOTE: River Left (L) and Right (R) as looking downstream ❖ OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUARINATION PROPERTY PROPERT	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUARINATION FLOODPLAIN	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ DPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Onen Bacture Bank or Onen Bacture Bank o	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUARINATION Eloope	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): O.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Open Pasture, Row Creen.	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUARINATION STATE ST	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ DPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUARINATION STATE ST	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUARINATION L R (Per Bank) L R (P	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUARIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstite COMMENTS)	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 0.70	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS TRIPARIAN ZONE AND FLOODPLAIN QUARIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) (0 Stream Flowing Subsurface flow with isolated pools (Interstit COMMENTS) SINUOSITY (Number of bends per 61 m (2 None 1.0	AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): O.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Mining or Construction Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): O.70 AVERAGE BANKFULL WIDTH (meters): O.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN QUARIPARIAN WIDTH (Per Bank) (Per Bank) Wide > 10m Moderate 5-10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstit COMMENTS) SINUOSITY (Number of bends per 61 m (2 None 0.5 STREAM GRADIENT ESTIMATE	AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): O.70 This information must also be completed ALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ OPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Mining or Construction Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	Width Max=30

ADDITIONAL STREAM INFORMATION (This information Must Also be Completed): QHEI PERFORMED? -	
DOWNSTREAM DESIGNATED USE(S) WWH Name:	ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
Distance from Evaluated Stream	QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
Distance from Evaluated Stream	DOWNSTREAM DESIGNATED USE(S)
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order County: Seneca Township / City: MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation: 04/27/17 Quantity: 0.07 Photograph Information: Representative Photos Taken Elevated Turbidity? (Y/N): N Canopy (% open): 100% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts: Nearby road and crop areas BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations, Voucher collections optional, NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):	Distance from Furthered Observe
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USGS Quadrangle Name: Fireside NRCS Soil Map Page NRCS Soil Map Stream Order County: Seneca Township / City: MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/27/17 Quantity: 0.07 Photograph Information: Representative Photos Taken Elevated Turbidity? (Y/N): N Canopy (% open): 100% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp ("C) Dissolved Oxygen (mq/l) PH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain: Mearby road and crop areas BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Oucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Oucher? (Y/N) N Ouche	EWH Name: Distance from Evaluated Stream
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Hensinger Rd 124	Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-122 RIVER BASIN Morrison Creek DRAINAGE AREA (mi²)	0.00
LENGTH OF STREAM REACH (ft) 410 LAT. 41.14650 LONG82.96891 RIVER CODE RIVER MILE	
DATE 04/27/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts] □ ✓ SILT [3 pt] 40%	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
✓ GRAVEL (2-64 mm) [9 pts] 50% MUCK [0 pts] 0% SAND (<2 mm) [6 pts]	15
Total of Percentages of Occor (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock Check Check 95%	A+B
 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ S 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	
OMMIENTS MAXIMUM POOL DEPTH (centimeters): 0	
	Danleful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.70	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Field Field Urban or industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row C	rop
None Fenced Pasture Mining or Construction	<u>ו</u>
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitter	
	ıt)
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	it)
Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	
Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 0.5 1.5	it)
Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/27/17 Quantity: 0.07
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location Hensinger Rd 124







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SITE NAME/LOCATION Apex Republic Wind Farm SITE NUMBER DOH-123 RIVER BASIN Morrison Creek DRAINAGE AREA (mi²)	0.53
LENGTH OF STREAM REACH (ft) 2,316 LAT. 41.13359 LONG82.97269 RIVER CODE RIVER MILE	
DATE 04/28/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In-	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO R MODIFICATIONS:	ECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	ı HHEI
TYPE PERCENT TYPE PERCENT PERCENT	Metri
□ BLDR SLABS [16 pts] 0% SILT [3 pt] 70%	Point
BOULDER (>256 mm) [16 pts]	Substrat
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%	13
SAND (<2 mm) [6 pts]	
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 Check 10076	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts]	
✓ □ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	25
OMMENTS MAXIMUM POOL DEPTH (centimeters): 15	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00	1
COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.00	1
This information must also be completed	1
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	1
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY LR (Per Bank) LR (Most Predominant per Bank) LR	1
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{RIPARIAN WIDTH} FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	20
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY LR (Per Bank) LR (Most Predominant per Bank) LR	20
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\text{NOTE}\$: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{RIPARIAN WIDTH} \text{FLOODPLAIN QUALITY} \text{L R (Most Predominant per Bank)} \text{L R } \text{Volume Tonservation Tillage} \text{Moderate 5-10m} \text{Moderate 5-10m} \text{Immature Forest, Shrub or Old} \text{Urban or Industrial} \text{Volume Tonservation Tillage} \text{Volume Tonservation Tillage} \text{Volume Tonservation Tillage}	20
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R Conservation Tillage Urban or Industrial Open Pasture, Row Mining or Construction	20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Type Narrow <5m This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Open Pasture, Row	20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Moderate 5-10m Residential, Park, New Field Open Pasture, Row None Residential, Park, New Field Mining or Construction COMMENTS Minor woodlot along reach, but maiority abuts open row crop FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Another Left (L) and Right (R) and Right (R) and Right	20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field Narrow <5m Residential, Park, New Field Open Pasture, Row None Fenced Pasture Mining or Construction Comments Mining M	20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Moderate 5-10m Residential, Park, New Field Open Pasture, Row None Residential, Park, New Field Open Pasture, Row None Fenced Pasture Mining or Constructic COMMENTS Minor woodlot along reach, but maiority abuts open row crop FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitted Dry channel, no water (Ephemeral)	20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Immature Forest, Shrub or Old Field Varrow <5m Residential, Park, New Field None COMMENTS Minor woodlot along reach, but majority abuts open row crop FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 2.5 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	20 Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	Crop on ent)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
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USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation:
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW TO THE PROPERTY OF THE PR



Google earth



SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-124 RIVER BASIN Morrison Creek DRAINAGE AREA (mi²) 0.1	11
LENGTH OF STREAM REACH (ft) 164 LAT. 41.13351 LONG82.97181 RIVER CODE RIVER MILE	
DATE 04/28/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMMODIFICATIONS:	VERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
TYPE PERCENT TYPE PERCENT PERCENT	Metri
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] 0% SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] 10%	Point
BOULDER (>256 mm) [16 pts]	Substra
COBBLE (65-256 mm) [12 pts]	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts] ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	12
Total of Percentages of 0.00% (A) Substrate Percentage 4.00% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	0
The Witter orthogonal Edition (20 ptg)	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfu Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.50	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Wide >10m	
Field Onen Pasture Pow Cron)
Residential, Park, New Field	,
None Fenced Pasture Mining or Construction COMMENTS Minor woodlot along reach, but majority abuts open row crop	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS_	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 2.0 3.0 >3 1.5	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Cor	npleted QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
	ance from Evaluated Stream
	ance from Evaluated Stream
EWH Name: Dista	ance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA	. CLEARLY MARK THE SITE LOCATION
JSGS Quadrangle Name: Fireside NRCS Soil Map Page:	NRCS Soil Map Stream Order
County: Seneca Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/28/17	uantity: 0.44
Photograph Information: Representative Photos Taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Nere samples collected for water chemistry? (Y/N): Note lab sample no. or id. and atta	ach results) Lab Number:
ield Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
s the sampling reach representative of the stream (Y/N) If not, please explain:	
additional comments/description of pollution impacts:	
learby road and crop areas	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTI ID number. Include appropriate field data sheets from the Primary H Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observeds Regarding Biology:	eadwater Habitat Assessment Manual) ucher? (Y/N)
DRAWING AND NADDATIVE DECORPTION OF OTHER AND DECO	II /This must be as well to all
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REAC	
Include important landmarks and other features of interest for site evaluation and a na	rrative description of the stream's location







SITE NAME/LOCATION PADEX INCOMINE	Wind Farm	
SITE NAME/LOCATION Apex Republic V		0.00
	LAT. 41.13920 LONG82.96031 RIVER CODE RIVER MILE	
DATE 04/28/17 SCORER BJS	COMMENTS	
NOTE: Complete All Items On This For	rm - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	structions
STREAM CHANNEL NONE / NA MODIFICATIONS:	ATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO R	ECOVERY
	very type of substrate present. Check ONLY two predominant substrate TYPE boxes icant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
, , ,	PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]	0% SILT [3 pt] 75% LEAF PACK/WOODY DEBRIS [3 pts] 10%	Points
BEDROCK [16 pt]	0% LEAF PACK/WOODY DEBRIS [3 pts] 10% 0%	Substrat
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] 0%	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ SAND (<2 mm) [6 pts]	5% MUCK [0 pts] 0% 10% ARTIFICIAL [3 pts] 0%	13
T.1.1.6D	Cubetrate Persenting (R)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock _	Check 100%] ^
SCORE OF TWO MOST PREDOMINATE SUB		
	maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of ad culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	S cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
	MAXIMUM POOL DEPTH (centimeters): 0	
		<u> </u>
BANK FULL WIDTH (Measured as the	ne average of 3-4 measurements) (Check ONLY one box):	
		Bankful Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] < 1.0 m (<=3' 3") [5 pts]	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] < 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] < 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): This information must also be completed PPLAIN QUALITY 公NOTE: River Left (L) and Right (R) as looking downstream 3	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): OPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH L R (Per Bank)	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): OPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH L R (Per Bank) Wide >10m	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): OPLAIN QUALITY ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴ FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Uthan or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH L R (Per Bank) Wide > 10m Moderate 5-10m Narrow < 5m None	This information must also be completed OPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Open Besture Forest	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH L R (Per Bank) Wide > 10m Moderate 5-10m Narrow < 5m	This information must also be completed OPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] AVERAGE BANKFULL WIDTH (meters): 0.50 L R (start of the start	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Ev	This information must also be completed OPLAIN QUALITY ∴ NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Valuation) (Check ONLY one box):	Width Max=30 5 Crop
A.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Events of E	This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Mining or Constructivaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermitt	Width Max=30 5 Crop
A.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Events	This information must also be completed OPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermitt Dry channel, no water (Ephemeral)	Width Max=30 5 Crop
A.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Events of Event	This information must also be completed OPLAIN QUALITY ∴ NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Penced Pasture Moist Channel, isolated pools, no flow (Intermitt Dry channel, no water (Ephemeral) Per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30 5 Crop
A.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Events	This information must also be completed OPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermitt Dry channel, no water (Ephemeral)	Width Max=30 5 Crop
A.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Event Stream Flowing) Subsurface flow with isolated por COMMENTS SINUOSITY (Number of bends) None	This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermitt Dry channel, no water (Ephemeral) Per 61 m (200 ft) of channel) (Check ONLY one box): 2.0 3.0	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
0
County Township / Oity
MISCELLANEOUS Base Flow Conditions? (V/N): Y Date of last precipitation: 04/28/17 Ougntity: 0.44
Bate in we conditions: (174) Bate on last predipitation
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): _ N Canopy (% open): _ 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location Miller-Straub-Rd
Google earth AN





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-126 RIVER BASIN Morrison Creek DRAINAGE AREA (mi²)	0.00
LENGTH OF STREAM REACH (ft) 5,829 LAT. 41.13932 LONG82.95758 RIVER CODE RIVER MILE	
DATE 04/28/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 75%	Point
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%	13
SAND (<2 mm) [6 pts]	
Total of Percentages of 0.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 5 cm - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
COMMENTS MAXIMUM POOL DEPTH (centimeters): 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Wax-30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.50	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Field Field Urban or industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row C	rop
	1
None Fenced Pasture Mining or Construction	
None Fenced Pasture Mining or Construction COMMENTS	_
COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	l
COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Ory channel, no water (Ephemeral)	l
COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Output Dry channel, no water (Ephemeral)	L
COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 0.5 3.0 >3	t)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/28/17 Quantity: 0.44
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW

Save as pdf



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	Title Coole (sum of metrics 1, 2, 3) :
SITE NAME/LOCATION Apex Republic W	
SITE NUMBER_	OH-127 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²) 0.27
LENGTH OF STREAM REACH (ft) 2,828	
DATE 04/28/17 SCORER BJS	
	COMMENTS
NOTE: Complete All Items On This Forn	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NA MODIFICATIONS:	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
A CUROTRATE (Estimate manual of an	and the second of second o
	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes ant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
,	ERCENT TYPE PERCENT Metri
BLDR SLABS [16 pts]	0% SILT [3 pt] 70% Point
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 15%
BEDROCK [16 pt]	0% Substra Max = 4
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] 0%
GRAVEL (2-64 mm) [9 pts]	5% MUCK [0 pts] 0% 10
SAND (<2 mm) [6 pts]	10% ARTIFICIAL [3 pts] 0%
Total of Percentages of	0.00% (A) Substrate Percentage 100% (B) A + B
Bldr Slabs, Boulder, Cobble, Bedrock	0.00% (A) Substrate Percentage 100% (B) A + B
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 4
2 Mayimum Bool Donth (Massure the m	paximum pool depth within the 61 meter (200 ft) evaluation reach at the time of
	paximum pool depth within the 61 meter (200 ft) evaluation reach at the time of d culverts or storm water pipes) (Check ONLY one box): Max = 3
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts] 15
OMM ENTS	MAXIMUM POOL DEPTH (centimeters): 15
OMM EAT 5	WAXINGWIFOOL BLF III (Centimeters).
3. BANK FULL WIDTH (Measured as the	average of 3-4 measurements) (Check ONLY one box): Bankfu
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (<=3' 3") [5 pts] Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 1.00
	This information must also be associated
RIPARIAN ZONE AND FLOODE	This information <u>must</u> also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆
RIPARIAN WIDTH	FLOODPLAIN QUALITY
L R (Per Bank)	L R (Most Predominant per Bank) L R
Wide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
	Field Open Pasture, Row Crop
✓ ✓ Narrow <5m	Residential, Park, New Field
None None	Fenced Pasture Mining or Construction
COMMENTS	
FLOW REGIME (At Time of Eve	aluation) (Check ONLY one box):
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)
Subsurface flow with isolated poo	
COMMENTS_	
SINLIASITY (Number of bands of	per 61 m (200 ft) of channel) (Check ONLY one box):
None 0.5	1.0 2.0 3.0 3.0 1.5 2.5 3.0
None 0.5	1.0 2.0 3.0
None 0.5 STREAM GRADIENT ESTIMATE	1.0 1.5 2.0 2.5 3.0 >3
None 0.5	1.0 2.0 3.0

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 04/28/17 Quantity:_ 0.44
Photograph Information: Representative Photos Taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts: Nearby road and crop areas
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW ->



Google earth



SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-128 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi	0.22
LENGTH OF STREAM REACH (ft) 1,468 LAT. 41.14172 LONG82.95459 RIVER CODE RIVER MIL	
DATE 04/28/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for It	nstructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO F	RECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxe (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	s HHE
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Point
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substra Max = 4
COBBLE (65-256 mm) [12 pts]	I III AX
GRAVEL (2-64 mm) [9 pts]	9
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool De
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
✓	_ 25
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 15	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfu
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	-
COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.2	<u> 20</u>
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ঠ	'
RIPARIAN WIDTH FLOODPLAIN QUALITY L. D. (Next Part derricent res Park)	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	e
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
✓ ✓ Narrow <5m	/ Crop
None	tion
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Stream Flowing Moist Channel, isolated pools, no flow (Intermit Dry channel, no water (Ephemeral)	tent)
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): None 1.0 2.0 3.0 3.0 3.5	
STREAM GRADIENT ESTIMATE	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe	0 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Com	oleted):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If	Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WA	TERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS S	oil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City	
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 04/28/	17 Quantity: 0.44
Photograph Information: Representative Photos Taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sample	no. or id. and attach results) Lab Number:
	(S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please ex	plain:
Additional comments/description of pollution impacts:	
Nearby road and crop areas	
ID number. Include appropriate field data sheets fr Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed?	ns optional. NOTE: all voucher samples must be labeled with the site om the Primary Headwater Habitat Assessment Manual) (Y/N) N Voucher? (Y/
DRAWING AND NARRATIVE DESCRIPTION OF STE	· —







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-150 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²)	0.13
LENGTH OF STREAM REACH (ft) 285 LAT. 41.15727 LONG82.99003 RIVER CODE RIVER MILE	
DATE 04/27/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] O LEAF PACK/WOODY DEBRIS [3 pts] O O O O O O O O O O O O O	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ ☐ O% ☐ ☐ O% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	8
Total of Percentages of Occor (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock 6 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 2	^.b
	<u> </u>
 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ S 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	0
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 0	
	Bankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.50	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Field Field Urban or industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row C	rop
None Fenced Pasture Mining or Construction	n
FLOW RECIME (At Time of Frightedien) (Check CAN Vene hour)	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitter	it)
	it)
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermitter Dry channel, no water (Ephemeral)	nt)
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None None Moist Channel, isolated pools, no flow (Intermitter Dry channel, no water (Ephemeral) CHeck ONLY one box): 2.0 3.0	nt)
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 3.0 >3 1.5	it)
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None Moist Channel, isolated pools, no flow (Intermitter Dry channel, no water (Ephemeral) (Check ONLY one box): 2.0 3.0	

ADDITIONAL STREAM INFORMATION (This Information Must Also	o be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream _
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EI	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Firside	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Towns	ship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:	04/27/17 Quantity: 0.07
Photograph Information: Representative Photos Taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): (Note lat	b sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not	, please explain:
is the sampling reach representative of the stream (1714)	, picase expirain.
<u> </u>	
Additional comments/description of pollution impacts:	
Nearby road and crop areas	
BIOTIC EVALUATION	
()	er collections optional. NOTE: all voucher samples must be labeled with the site
	a sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders C Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aqua	Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Primary Headwater Habitat Evaluation Form

17

HHEI Score (sum of metrics 1, 2, 3) SITE NAME/LOCATION | Apex Republic Wind Farm SITE NUMBER DOH-152 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.20 LENGTH OF STREAM REACH (ft) 1,924 LAT. 41.17188 LONG. -82.89739 RIVER CODE RIVER MILE DATE 10/17/17 SCORER MAM COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE PERCENT PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 85% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 5% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 0% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 12 10% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm -10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 0 Only water by culvert/tile discharge **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 5 COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS Sits within active field FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: _	
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Towns	hip / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_	10/12/17 Quantity: 0.02
Photograph Information: 3 photos taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	%
N	sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data	collections optional. NOTE: all voucher samples must be labeled with the sisteets from the Primary Headwater Habitat Assessment Manual) poserved? (Y/N) N Voucher? (Y/N) N Vouc
	OF STREAM REACH (This <u>must</u> be completed): site evaluation and a narrative description of the stream's location



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SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-153 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	3.22
LENGTH OF STREAM REACH (ft) 2,284 LAT. 41.16722 LONG82.89357 RIVER CODE RIVER MILE	
DATE 10/17/17 SCORER MAM COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	HHEI
□ □ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] LEAF PACK/WOODY DEBRIS [3 pts] O% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	11
SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]	L
Total of Percentages of 0.00% (A) Substrate Percentage (B) Check 100%	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 2	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	0.5
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS Several tile discharges MAXIMUM POOL DEPTH (centimeters): 20	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 4.00 This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): ### AVERAGE BANKFULL WIDTH (meters): ### 4.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream**	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 4.00 This information pust also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30 25
> 4.0 meters (> 13') [30 pts]	Width Max=30 25
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Narrow <5 m Residential, Park, New Field None COMMENTS At Flag 23. transitions into forrested modified ditch with more rocks. cobble. etc FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30 25 Crop
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Narrow <5 m Residential, Park, New Field None COMMENTS At Flag 23, transitions into forrested modified ditch with more rocks. cobble. etc FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) > 1.0 m (< 3' 3" 4' 8") [15 pts] > 1.0 m (< 3' 3" 4' 8") [15 pts] > 1.0 m (< 3' 3" 4' 8") [15 pts] > 1.0 m (< 3' 3" 4' 8") [15 pts] > 1.0 m (< 3' 3" 4' 8") [15 pts] 4.00 AVERAGE BANKFULL WIDTH (meters): 4.00 AVERAGE BANKFULL WIDTH (meters):	Width Max=30 25 Crop
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field Narrow <5 m Residential, Park, New Field Narrow <5 m Residential, Park, New Field COMMENTS At Flag 23, transitions into forrested modified ditch with more rocks, cobble, etc FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitter) Moist Channel, isolated pools, no flow (Intermitter)	Width Max=30 25 Crop
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream Nature Forest, Wetland RIPARIAN WIDTH L R (Most Predominant per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Mature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5 m Residential, Park, New Field Open Pasture, Row Completed RIPARIAN WIDTH Residential, Park, New Field Open Pasture, Row Completed RIPARIAN WIDTH Residential, Park, New Field Open Pasture, Row Completed RIPARIAN WIDTH Residential, Park, New Field Open Pasture, Row Completed Wining or Construction COMMENTS At Flag 23. transitions into forrested modified ditch with more rocks, cobble, etc FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30 25 Crop
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (< 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m Wide >10m Wide >10m Wature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row Completed RIPARIAN WIDTH Fenced Pasture COMMENTS At Flag 23. transitions into forrested modified ditch with more rocks. cobble. etc FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermitted Dry channel, no water (Ephemeral)	Width Max=30 25 Crop
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4" 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH I R (Per Bank) Wide > 10 m Mature Forest, Wetland Moderate 5-10 m Immature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field None COMMENTS Thom of Evaluation (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	Width Max=30 25 Crop
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V None COMMENTS At Flag 23, transitions into forrested modified ditch with more rocks, cobble, etc FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 3.0 COMMENTS 3.0 3.0	Width Max=30 25 Crop nt)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order County: Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:10/12/17 Quantity:0.02
Photograph Information: 8 photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site. ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
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SITE NAME/LOCATION | Apex Republic Wind Farm SITE NUMBER DOH-156 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.11 LAT. 41.16737 LONG. -82.87626 RIVER CODE 961 LENGTH OF STREAM REACH (ft) RIVER MILE DATE 10/17/17 SCORER MAM COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE PERCENT PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 80% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 20% 0% Substrate 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 0% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 8 0% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock TOTAL NUMBER OF SUBSTRATE TYPES: 2 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm -10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5 OMM ENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 5 COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS Excavated material appears to be built up alongside FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/12/17 Quantity: 0.02
Photograph Information: 2 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 30%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:
Additional comments/description of pollution impacts:
DIOTIC EVALUATION
BIOTIC EVALUATION
Performed? (Y/N): NOTE: all voucher samples must be labeled with the si
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Vo
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
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SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-159 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)).47
LENGTH OF STREAM REACH (ft) 2,442 LAT. 41.18466 LONG82.87483 RIVER CODE RIVER MILE	
DATE 10/17/17 SCORER MAM COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute 1.	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 85%	Points
BOULDER (>256 mm) [16 pts]	Substrat
☐ ✓ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ 0%	Max = 4
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ O%	18
Total of Percentages of (A) Substrate Percentage (B)	A . B
Bldr Slabs, Boulder, Cobble, Bedrock Check	A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
OMMENTS Standing water throughout MAXIMUM POOL DEPTH (centimeters): 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful
	Width
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
2 1.0 m (-0 0) [2 0 pts]	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters): 0.50 AVERAGE BANKFULL WIDTH (meters): \$\frac{\text{This information must}}{\text{\$\text{\$\text{NOTE: River Left}}}\$}\$	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) RIPARIAN WIDTH L R (Most Predominant per Bank) L R (Most Predominant per Bank) RIPARIAN WIDTH RIPARIAN WIDT	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY □ RIPARIAN WIDTH □ RIPARIAN	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY □ RIPARIAN WIDTH □ RIPARIAN	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream: RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Vinde Prenced Pasture Mining or Construction	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Notes and Ploodplain Quality L R (Per Bank) Wide >1.0 Moderate 5-10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field None COMMENTS Modified ditch, runs along forest edge AVERAGE BANKFULL WIDTH (meters): 0.50 AVERAGE BANKFULL WIDTH (meters): (Nost Predominant per Bank) L R (Most Predominant per Bank) L R (Conservation Tillage Immature Forest, Shrub or Old Immature Forest, Shr	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Vanore COMMENTS Modified ditch. runs along forest edge FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing AVERAGE BANKFULL WIDTH (meters): 0.50 Moderate Solution (L) and Right (R) as looking downstream ↑ Riparian (L) and Right (R) and Right (R) as looking downstream ↑ Riparian (L) and Right (R) and Riparian (R) and Riparian (R) and Riparian (R) and Riparian (R) and R	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Varrow <5m None COMMENTS Modified ditch. runs along forest edge FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) AVERAGE BANKFULL WIDTH (meters): 0.50 AVER	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Residentiant per Bank) Residentiant per Bank) Residential, Park, New Field Party Company Construction COMMENTS Modified ditch. runs along forest edge FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH	5
AVERAGE BANKFULL WIDTH (meters): O.50 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5m Residential, Park, New Field Open Pasture, Row Cr None COMMENTS Modified ditch. runs along forest edge FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH	5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/12/17 Quantity: 0.02
Photograph Information: 2 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 90%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
PIOTIC EVALUATION
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
rogs of Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-160 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	0.07
LENGTH OF STREAM REACH (ft) 1,314 LAT. 41.18396 LONG82.88652 RIVER CODE RIVER MILE	
DATE 10/17/17 SCORER MAM COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] DW LEAF PACK/WOODY DEBRIS [3 pts] 10% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 30% CLAY or HARDPAN [0 pt] 0%	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts] ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	19
Total of Percentages of 30.00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	5
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 2	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.70	20
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\text{NOTE: River Left (L) and Right (R) as looking downstream \$\text{\$\frac{1}{2}}\$	
RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ Wide >10m ☐ Mature Forest, Wetland ☐ Conservation Tillage	
✓✓ Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cr	ор
None Fenced Pasture Mining or Construction	
COMMENTS	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral))
COMMENTS_	L
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
□ 0.5	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/1	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/12/17 Quantity: 0.02
Photograph Information: 2 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 0%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW -
Google Earth
22017 Google





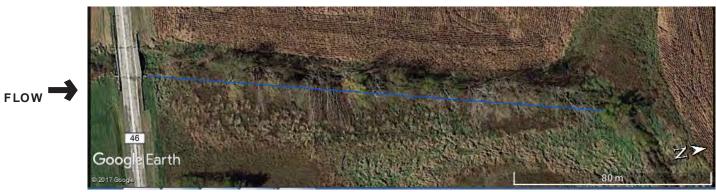
Primary Headwater Habitat Evaluation Form

32

HHEI Score (sum of metrics 1, 2, 3) SITE NAME/LOCATION | Apex Republic Wind Farm SITE NUMBER DOH-161 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 6.44 LAT. 41.19086 LONG. -82.89464 RIVER CODE 617 LENGTH OF STREAM REACH (ft) RIVER MILE DATE 10/18/01 SCORER MAM COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE PERCENT TYPE PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 75% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 5% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 12 20% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm -10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5 OMM ENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20 15 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation:10/12/17 Quantity:0.02
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:

Additional comments/description of pollution impacts:
BIOTIC EVALUATION
N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) SITE NAME/LOCATION | Apex Republic Wind Farm SITE NUMBER DOH-165 RIVER BASIN Morrison Creek DRAINAGE AREA (mi²) 0.31 LAT. 41.14419 LONG. -82.98379 RIVER CODE 1,468 LENGTH OF STREAM REACH (ft) RIVER MILE DATE 10/18/17 SCORER MAM COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE PERCENT PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 80% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 5% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 12 15% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm -10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 15 10 OMM ENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 5 COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.90 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3

Severe (10 ft/100 ft)

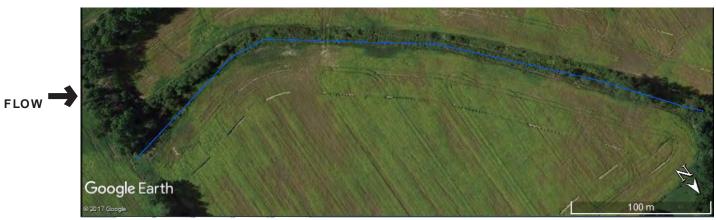
Moderate (2 ft/100 ft)

Flat (0.5 ft/100 ft)

STREAM GRADIENT ESTIMATE

Flat to Moderate

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream	
EWH Name: Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order	
County: Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	
Photograph Information: 5 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 85%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)	
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc	
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):	
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location	







N Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION Apex Republic Wind Farm

4 = 00	.15
LENGTH OF STREAM REACH (ft) 1,563 LAT. 41.14419 LONG82.98379 RIVER CODE RIVER MILE	
DATE 10/18/17 SCORER MAM COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL □ NONE / NATURAL CHANNEL □ RECOVERED □ RECOVERING □ RECENT OR NO RECOVERED □ R	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	HHEI Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D'' LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] 0% MUCK [0 pts] 0%	17
SAND (<2 mm) [6 pts]	
Total of Percentages of S.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 2	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IVIAX - 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	15
 BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): 	
	Bankful Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH CPE Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10 m Moderate 5-10 m Nor Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Narrow <5m Residential, Park, New Field Flood Residential, Park, New Field Flood Residence of Evaluation) Comments AVERAGE BANKFULL WIDTH (meters): 2.50 This information must also be completed RIPARIAN WIDTH (meters): 2.50 L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Open Pasture, Row Cro None COMMENTS Flow Regime (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field FLOOMENTS Flow REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ↑NOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY ↓ NOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH FLOODPLAIN QUALITY ↓ R (Per Bank) ↓ R (Most Predominant per Bank) ↓ R (Der Bank) ↓ R (Most Predominant per Bank) ↓ R (Per Bank) ↓ R (Most Predominant per Bank) ↓ R (Most Predominant per Bank) ↓ R (Per Bank) ↓ R (Most Predominant per Bank) ↓ R (Per Bank) ↓ R (Most Predominant per Bank) ↓ R (Most Predo	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Immature Forest, Shrub or Old Whose Tenced Pasture Narrow <5m Residential, Park, New Field FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS None (Ephemeral) COMMENTS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴ RIPARIAN WIDTH L R (Per Bank) Wide > 10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Ploop Residential, Park, New Field Plow REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/12/17 Quantity: 0.02
Photograph Information: 8 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) N Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW Google Earth





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-168 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²) 1.48	
ENGTH OF STREAM REACH (ft) 2,679 LAT. 41.14367 LONG82.93291 RIVER CODE RIVER MILE	
DATE 10/19/17 SCORER MAM COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ns
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	₹Y
TYPE PERCENT TYPE PERCENT □ BLDR SLABS [16 pts] 0% □ SILT [3 pt] 90% □ BOULDER (>256 mm) [16 pts] 0% □ LEAF PACK/WOODY DEBRIS [3 pts] 0% □ BEDROCK [16 pt] 0% □ FINE DETRITUS [3 pts] 0% □ COBBLE (65-256 mm) [12 pts] 0% □ CLAY or HARDPAN [0 pt] 0%	HE etri oint ostra ix = 4
Total of Percentages of (A)	+ B
Pool Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Pool Max	I Dep
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	x – 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	5
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 5	<i>-</i>
	ınkfu
> 4.0 meters (> 13') [30 pts]	iiikiu /idth ax=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.30	15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	
COMMENTS	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box):	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes / No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/12/17 Quantity: 0.02
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the compliant and by the state of the sta
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's locatio
FLOW -









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SITE NAME/LOCATION | Apex Republic Wind Farm SITE NUMBER DOH-169 RIVER BASIN Morrison Creek DRAINAGE AREA (mi²) 0.00 LAT. 41.13997 LONG. -82.93835 RIVER CODE 400 LENGTH OF STREAM REACH (ft) RIVER MILE DATE 10/19/17 SCORER MAM COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE PERCENT TYPE PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 95% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 5% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 14 0% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock 12 TOTAL NUMBER OF SUBSTRATE TYPES: 2 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm -10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 0 OMM ENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] \leq 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 5 COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.30 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/12/17 Quantity: 0.02
Photograph Information: 1 photo
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location Neounly Rd-27 Google Earth

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SITE NAME/LOCATION Apex Republic Wind Farm SITE NUMBER DOH-171 RIVER BASIN Morrison Creek DRAINAGE AREA (m	j²) 0.00
LENGTH OF STREAM REACH (ft) 507 LAT. 41.15547 LONG82.95198 RIVER CODE RIVER MI	
DATE 10/19/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for	nstructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO MODIFICATIONS:	RECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE box	es I HHE I
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
□ BLDR SLABS [16 pts]	Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] D'' LEAF PACK/WOODY DEBRIS [3 pts] O'' FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0% SAND (<2 mm) [6 pts] 20% ARTIFICIAL [3 pts] 0%	11
Title (B)	
Bldr Slabs, Boulder, Cobble, Bedrock Check	_ A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 2	_
 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IVIAX - 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	
The With the American Community of the C	
OMM ENTS MAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfu
	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters): 0.9 This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY PLOODPLAIN QUALITY FLOODPLAIN QUALITY	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY LR (Per Bank) AVERAGE BANKFULL WIDTH (meters): 0.9 AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): LR (Most Predominant per Bank) LR	Max=30 5
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.9 COMMENTS AVERAGE BANKFULL WIDTH (meters): USUALITY USUALIT	Max=30 5 30 30 30 30 30 30 30 30 30 30 30 30 30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY LR (Per Bank) Wide >10m Wide >10m Mature Forest, Wetland Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.9 Onen Pasture Po	Max=30 5 24 ge
COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m AVERAGE BANKFULL WIDTH (meters): 0.9 Conservation Tilla Immature Forest, Wetland Residential, Park, New Field Open Pasture, Ro	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY LR (Per Bank) Wide >10m Wide >10m Mature Forest, Wetland Moderate 5-10m AVERAGE BANKFULL WIDTH (meters): 0.9 Onen Pasture Po	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field COMMENTS AVERAGE BANKFULL WIDTH (meters): 0.9 O.9 AVERAGE BANKFULL WIDTH (meters): 0.9 This information must also be completed RIPARIAN WIDTH (R) as looking downstream RIPARIAN WIDTH L R (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tilla Immature Forest, Shrub or Old Field Open Pasture, Ro Open Pasture, Ro Mining or Construct COMMENTS	Max=30
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY PROPIRED AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY PROPIRED AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Interm	Max=30 5 ge w Crop
COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Max=30 5 ge w Crop
AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Residentian per Bank) Residentian per Bank Reside	Max=30 5 ge w Crop
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 AVERAGE BANKFULL WIDTH (meters): 0.5 Notite Channel, isolated pools, no flow (Interm Dry channel, no water (Ephemeral)) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 3.0	Max=30 5 ge w Crop
COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field V V Open Pasture, Ro Open Pasture, Ro FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3	Max=30 5 ge w Crop
COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10m	Max=30 5 ge w Crop

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Seneca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/12/17 Quantity: 0.02
Photograph Information: 2 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Additional confinence of political impacts.
BIOTIC EVALUATION
Performed? (Y/N): NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location









SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-204 RIVER BASIN Pickerel Creek	DRAINAGE AREA (mi²) 0.13
LENGTH OF STREAM REACH (ft) 135 LAT. 41.26050 LONG82.90881 RIVER	
DATE 04/08/17 SCORER BH COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohi	o's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERED RECOVERED	ERING RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two presents of the substrate present of the substrate present of the substrate present.)	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric sco TYPE PERCENT TYPE	PERCENT Metri
BLDR SLABS [16 pts] 0% SILT [3 pt]	100% Point
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] D'' LEAF PACK/WOODY DE TINE DETRITUS [3 pts]	0% Substra
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 p	-
GRAVEL (2-64 mm) [9 pts] O O O O O O O O O O O O O	^{0%} / _{0%} 7
07445 (*2 mm) [0 pto]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00% (A) Substrate Percentage Check 100%	(B) A + B
	F SUBSTRATE TYPES: 1
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) ex	
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one > 30 centimeters [20 pts] > 5 cm - 10 cm [· · · · · · · · · · · · · · · · · · ·
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
✓ □ > 10 - 22.5 cm [25 pts] □ NO WATER OR	MOIST CHANNEL [0 pts] 25
OMMIENTS MAXIMUM POOL	DEPTH (centimeters): 11
	,
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check Of	VLY one box): Bankfu
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" -	WLY one box): 4' 8") [15 pts] Bankful Width
	VLY one box): Bankfu
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	VLY one box): 4' 8") [15 pts] Bankfu Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	VLY one box): 4' 8") [15 pts] Bankfu Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANK This information must also be completed	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 FULL WIDTH (meters): 1.10
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Rig	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 FULL WIDTH (meters): 1.10
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) AVERAGE BANK This information Must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank)	WLY one box): 4' 8") [15 pts] Bankful Width Max=30 FULL WIDTH (meters): 1.10 15 tht (R) as looking downstream L R
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣ NOTE: River Left (L) and Rig RIPARIAN WIDTH L R (Per Bank) Vide >10 m (<=3' 3") [5 pts] L R (Most Predominant per Bank) Vide >10 m Mature Forest, Wetland Immature Forest, Wetland	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 FULL WIDTH (meters): 1.10 15 L R Conservation Tillage
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) AVERAGE BANK This information Must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank)	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 FFULL WIDTH (meters): 1.10 15 L R Conservation Tillage Urban or Industrial
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣ NOTE: River Left (L) and Rig RIPARIAN WIDTH L R (Per Bank) Vide > 10m Moderate 5-10m Moderate 5-10m Noderate 5-10m Noderate 5-10m	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 FULL WIDTH (meters): 1.10 15 L R Conservation Tillage
> 4.0 meters (> 13') [30 pts]	WLY one box): 4' 8") [15 pts] Bankful Width Max=30 FULL WIDTH (meters): 1.10 15 L R Conservation Tillage Urban or Industrial Onen Pasture Row Crop
> 4.0 meters (> 13') [30 pts]	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 IFULL WIDTH (meters): 1.10 15 L R Conservation Tillage Urban or Industrial Open Pasture, Row Crop
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 FULL WIDTH (meters): 1.10 15 L R Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 IFULL WIDTH (meters): 1.10 15 L R Conservation Tillage Urban or Industrial Open Pasture, Row Crop
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (< 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed and sign	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 Bankfu Width Max=30 Bankfu Width Max=30 If ULL WIDTH (meters): 1.10 Bankfu Width Max=30 If Ull Widt
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) None 1.0 Check ONLY one box) Check ONLY one box) SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) None 1.0 Check ONLY one box) Check ONLY one box) Check ONLY one box) Check ONLY one box)	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 Bankfu Width Max=30 Bankfu Width Max=30 If ULL WIDTH (meters): I 1.10 I 5 Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Solated pools, no flow (Intermittent) water (Ephemeral)
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (< 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed and set of the set of	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 FULL WIDTH (meters): 1.10 15 CFULL WIDTH (meters): 1.10 Under the conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Solated pools, no flow (Intermittent) water (Ephemeral)
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANK This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field None Residential, Park, New Field None Residential, Park, New Field Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) Check ONLY one box) Check ONLY one box) Check ONLY one box) One 1.0 2.0	WLY one box): 4' 8") [15 pts] Bankfu Width Max=30 IFULL WIDTH (meters): 1.10 15 Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction Solated pools, no flow (Intermittent) water (Ephemeral) 3.0 >3

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Sandusky Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 04/05/17 _ Quantity: 0.54
Photograph Information: Representative overview photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

PHWH Form Page - 2

Save as pdf



Google earth



SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-205 RIVER BASIN Pickerel Creek DRAINAGE AREA (mi²)	.00
LENGTH OF STREAM REACH (ft) 1,323 LAT. 41.26173 LONG82.90771 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BH COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT PERCENT	Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] 0% MUCK [0 pts] 0%	7
SAND (<2 mm) [6 pts]	<u>'</u>
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 1	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	4 -
☐ ☐ NO WATER OR MOIST CHANNEL [0 pts]	15
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 8	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
<pre>> 4.0 meters (> 13') [30 pts]</pre>	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.10	15
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Most Predominant per Bank) L R	
☐	
Field Field Urban or industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	p
None Fenced Pasture Mining or Construction	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS	,
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 3.0 3.0 0.5 1.5 2.5 3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00 ft)

	Yes No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNAT	
	Distance from Evaluated Stream
	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES	S OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
JSGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Sandusky	Township / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y	Date of last precipitation: 04/05/17 Quantity: 0.54
Photograph Information: Representa	tive overview photos taken
Elevated Turbidity? (Y/N): N	Canopy (% open): 100%
Were samples collected for water cher	mistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
	Dissolved Oxygen (mg/l)pH (S.U.) Conductivity (µmhos/cm)
s the sampling reach representative o	f the stream (Y/N) Y If not, please explain:
s the sampling reach representative of	Title stream (1714) II not, please explain
Additional comments/description of po	Ilution impacts:
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes,	Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ber. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucherogs or Tadpoles Observed? (Y/N)	er? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NA	RRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks a	nd other features of interest for site evaluation and a narrative description of the stream's location
	THE PROPERTY OF THE PARTY OF TH

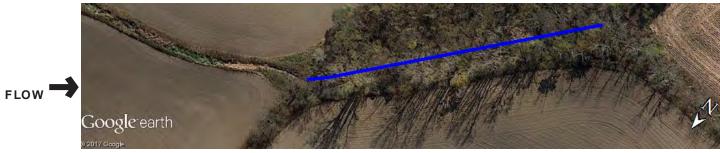
FLOW Coogle earth





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-206 RIVER BASIN Pickerel Creek DRAINAGE AREA (mi²) 0.36	
LENGTH OF STREAM REACH (ft) 454 LAT. 41.23284 LONG82.84572 RIVER CODE RIVER MILE	
DATE 04/08/17 SCORER BH COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	ERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE
TYPE PERCENT TYPE PERCENT M	/letri
BLDR SLABS [16 pts]	oint
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0% Su	ubstra lax = 4
COBBLE (65-256 mm) [12 pts]	
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts] ☐ ☐ ☐ O% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	7
Total of Percentages of 0.00% (A) Substrate Percentage 400% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
	ool De
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Sometimeters [20 pts] Somet	lax = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	25
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 15	
	Bankfu Width
→ 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] → 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	/lax=30
	20
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Field Open Pacture Pow Crop	
Residential, Park, New Field	
None Fenced Pasture Mining or Construction COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 3.0 3.0 0.5 1.5 2.5	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)	

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream
CWH Name:	
EWH Name: _	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EI	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Flat Rock	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Senca Towns	ship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	04/05/17 Quantity: 0.54
Photograph Information: Representative overview photos taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): N (Note la	b sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not	please explain:
Additional comments/description of pollution impacts:	
realization of policies in pol	
BIOTIC EVALUATION	
,	er collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders C Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aqua	Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:	N
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
	r site evaluation and a narrative description of the stream's location

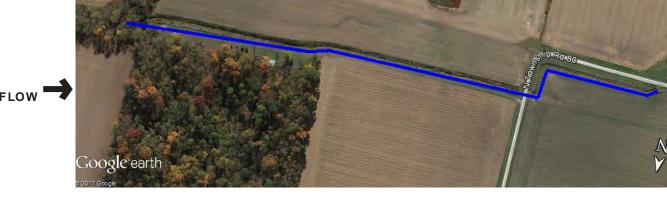






	Time to core (sum of metrics 1, 2, 3) .
SITE NAME/LOCATION Apex Republic W	
SITE NUMBER_	
LENGTH OF STREAM REACH (ft) 1,936	LAT. 41.20514 LONG82.91716 RIVER CODE RIVER MILE
DATE 04/08/17 SCORER BH	COMMENTS
NOTE: Complete All Items On This Forr	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NAT MODIFICATIONS:	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
1. SUBSTRATE (Estimate percent of ever	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes
	cant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HH Met
TYPE P BLDR SLABS [16 pts]	PERCENT TYPE PERCENT 80% POIL
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0%
BEDROCK [16 pt]	0% Subst
COBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]
GRAVEL (2-64 mm) [9 pts]	5% MUCK [0 pts] 0% 12
SAND (<2 mm) [6 pts]	ARTIFICIAL [3 pts]
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	0.00% (A) Substrate Percentage 100% (B) A + I
SCORE OF TWO MOST PREDOMINATE SUBS	
	Pool D
> 30 centimeters [20 pts]	d culverts or storm water pipes) (Check ONLY one box): > 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]
OMM ENTS	MAXIMUM POOL DEPTH (centimeters): 15
DANK FULL MUDTU (Management on the	Charle OW Very hard
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts]	e average of 3-4 measurements) (Check ONLY one box): Sank
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (<=3' 3") [5 pts] Max=
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 1.00 5
	This information must also be completed
RIPARIAN ZONE AND FLOODE	PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆
<u>RIPARIAN WIDTH</u> L R (Per Bank)	FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R
✓ ✓ Wide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
	Field — Open Pasture Pow Crop
Narrow <5m	Residential, Park, New Field
None	Fenced Pasture Mining or Construction
COMMENTS	
`	aluation) (Check ONLY one box):
Stream Flowing Subsurface flow with isolated poo	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)
COMMENTS_	Dry Granner, no water (Epiremetal)
	000 (000 (f) of alcased) (Obselv ON) (Vanal
SINUOSITY (Number of bends p	per 61 m (200 ft) of channel) (Check ONLY one box): 1.0
0.5	1.5 2.5 3.0
	_
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name:
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Senca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/05/17 Quantity: 0.54
Photograph Information: Representative overview photos taken
Elevated Turbidity? (Y/N): _N Canopy (% open):100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Figure 180
FLOW -







	Title 90010 (3uiii 01 iiietiites 1, 2, 3) 1
SITE NAME/LOCATION Apex Republic W	
SITE NUMBER_	OH-208 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²) 0.42
LENGTH OF STREAM REACH (ft) 281	LAT. 41.20296 LONG82.91395 RIVER CODE RIVER MILE
DATE 04/12/17 SCORER BH	COMMENTS
	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NAMED NAMED NONE / NAMED NAMED NONE / NAMED NAM	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
1. SUBSTRATE (Estimate percent of ever	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes
	ant substrate types found (Max of 8). Final metric score is sum of boxes A & B.
TYPE P BLDR SLABS [16 pts]	ERCENT TYPE PERCENT NOTE NOTE NOTE NOTE NOTE NOTE NOTE N
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0%
BEDROCK [16 pt]	0% Subst FINE DETRITUS [3 pts] 0% Subst Max =
COBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]
GRAVEL (2-64 mm) [9 pts]	15% MUCK [0 pts] 0% 0% 15
SAND (<2 mm) [6 pts]	ARTIFICIAL [3 pts]
Total of Percentages of	0.00% (A) Substrate Percentage 100% (B) A + E
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBS	
	paximum pool depth within the 61 meter (200 ft) evaluation reach at the time of d culverts or storm water pipes) (Check ONLY one box): Pool D Max = 1
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts] 20
OMM ENTS	MAXIMUM POOL DEPTH (centimeters): 40
DANK FULL MUDTU (Management of the	- Charle OW V and hards
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts]	e average of 3-4 measurements) (Check ONLY one box): Bank
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	✓ ≤ 1.0 m (<=3' 3") [5 pts] Max=
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 1.00
	This information must also be completed
RIPARIAN ZONE AND FLOODE	PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆
<u>RIPARIAN WIDTH</u> L R (Per Bank)	FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R
✓ ✓ Wide >10m	Mature Forest, Wetland Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
	Field Onen Pasture Row Crop
Narrow <5m	Residential, Park, New Field
None COMMENTS	Fenced Pasture Mining or Construction
COMMENTS	
· ·	aluation) (Check ONLY one box):
Stream Flowing Subsurface flow with isolated poo	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)
COMMENTS_	Dry onamid, no water (Ephometa)
CINILOCUTY (Numbers of transfer	per 61 m (200 ft) of channel (Chade ONI V and hard)
SINUOSITY (Number of bends p	per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): 1.0
0.5	1.5
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Senca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/11/17 Quantity: 0.05
Photograph Information: Representative overview photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y
Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW -
Google earth





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SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-209 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	.26
LENGTH OF STREAM REACH (ft) 1,744 LAT. 41.20275 LONG82.89723 RIVER CODE RIVER MILE	
DATE 04/12/17 SCORER BH COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] O% ARTIFICIAL [3 pts] O%	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 6	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts]	
	15
OMMENTS MAXIMUM POOL DEPTH (centimeters): 7	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Bankfull Width Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 2.80	20
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH RIPARIAN WIDTH L R (Most Predominant per Bank) L R (Underwell and Deliver Left (L) and Right (R) as looking downstream And Deliver Left (L) and Right (qc
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 >3.0 >3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00 ft)

QHEI PERFORMED? - Yes No QHEI Score (If Yes, Attach Completed QHEI Form) DOWNSTREAM DESIGNATED USE(S)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Senca Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 04/11/17 Quantity:_ 0.05
Photograph Information: Representative overview photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Frogs of Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW

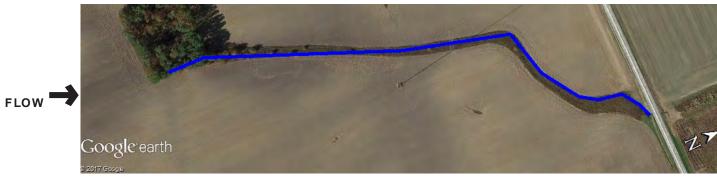
Save as pdf





SITE NAME/LOCATION Apex Republic Wind Farm	
SITE NUMBER DOH-210 RIVER BASIN Beaver Creek DRAINAGE AREA (mi²)	0.17
LENGTH OF STREAM REACH (ft) 1,573 LAT. 41.18850 LONG82.90719 RIVER CODE RIVER MILE	
DATE 04/12/17 SCORER BH COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 80%	Points
BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0% FINE DETRITUS [3 pts] 0%	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	8
Orato (*2 mm) [o pto]	
Total of Percentages of 0.00% (A) Substrate Percentage Check 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 2	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	5
OMMENTS MAXIMUM POOL DEPTH (centimeters): 5	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS AVERAGE BANKFULL WIDTH (meters): ### AVERAGE BANKFULL WIDTH (meters): ### D.50 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY **NOTE: River Left (L) and Right (R) as looking downstream**	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ↑ RIPARIAN WIDTH L R (Per Bank) U	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Normation must also be completed RIPARIAN WIDTH L R (Most Predominant per Bank) Moderate 5-10m Moderate 5-10m Moderate 5-10m	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY WNOTE: River Left (L) and Right (R) as looking downstream with the completed and reference in the completed with the completed and reference in the complete in the compl	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream And FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY R (Per Bank) Wide >10 m Mature Forest, Wetland Moderate 5-10m Mature Forest, Wetland None Residential, Park, New Field Penced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral))	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V Narrow <5m Residential, Park, New Field COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field V Narrow <5m Residential, Park, New Field COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	Width Max=30 5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)		
WWH Name:	_ Distance from Evaluated Stream	
CWH Name: _	Distance from Evaluated Stream	
EWH Name:	Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE E	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: Fireside	NRCS Soil Map Page: NRCS Soil Map Stream Order	
County: Senca Town	ship / City:	
MISCELLANEOUS		
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	04/11/17 Quantity: 0.05	
Photograph Information: Representative overview photos taken		
Elevated Turbidity? (Y/N): _N Canopy (% open):100	%	
Were samples collected for water chemistry? (Y/N): (Note la	b sample no. or id. and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (μmhos/cm)	
Y If not	alaasa similaisi	
Is the sampling reach representative of the stream (Y/N) If not	, please explain:	
Additional comments/description of pollution impacts:		
BIOTIC EVALUATION		
5 (12 (4)) N		
Performed? (Y/N): (If Yes, Record all observations. Vouche	er collections optional. NOTE: all voucher samples must be labeled with the site	
	a sheets from the Primary Headwater Habitat Assessment Manual)	
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders (Observed? (Y/N) N Voucher? (Y/N) N N	
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aqua	itic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)	
Comments Regarding Biology:		
DRAWING AND NADRATIVE DESCRIPTION	OF STREAM REACH (This must be completed):	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):		
Include important landmarks and other features of interest fo	r site evaluation and a narrative description of the stream's location	







SITE NAME/LOCATION Apex Republic Wind Farm		
SITE NAME/LOCATION APEX REPUBLIC WHITE TERMS BEAVER Creek DRAINAGE AREA (mi²) 0.24		
LENGTH OF STREAM REACH (ft) 2,791 LAT. 41.18480		
DATE 04/12/17 SCORER BH COMMENT	-8	
NOTE: Complete All Items On This Form - Refer to "Field	d Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL MODIFICATIONS:	RECOVERED RECOVERING RECENT OR NO RECO	OVERY
	e present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types 1 TYPE PERCENT TYI	` '	Metri
BLDR SLABS [16 pts] 0%	SILT [3 pt] 100%	Point
BOULDER (>256 mm) [16 pts] 0% BEDROCK [16 pt] 0%	LEAF PACK/WOODY DEBRIS [3 pts] FINE DETRITUS [3 pts] 0%	Substrat
COBBLE (65-256 mm) [12 pts] 0%	CLAY or HARDPAN [0 pt]	Max = 4
GRAVEL (2-64 mm) [9 pts] 0% 0% 0%	MUCK [0 pts] 0%	7
0/11/2 (12 mm) [0 pts]	ARTIFICIAL [3 pts]	_
Total of Percentages of 0.00% (A) Bldr Slabs, Boulder, Cobble, Bedrock	Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:	6 TOTAL NUMBER OF SUBSTRATE TYPES: 1	
	h within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm v > 30 centimeters [20 pts]	vater pipes) (Check <i>ONLY</i> one box): > 5 cm - 10 cm [15 pts]	Max = 3
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	□ □ NO WATER OR MOIST CHANNEL [0 pts]	25
OMM ENTS	MAXIMUM POOL DEPTH (centimeters): 14	
A DANICELLI MIDELLINA I II II CA	_	
3. BANK FULL WIDTH (Measured as the average of 3-4 measured)		Bankful
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This inform	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] \(\leq 1.0 \text{ m} \) (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 mation \(\text{must} \) also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This informal RIPARIAN ZONE AND FLOODPLAIN QUALITY	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 mation must also be completed ANOTE: River Left (L) and Right (R) as looking downstream A	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This inform RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH LR (Per Bank) LR (Most)	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 mation must also be completed ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ UALITY Predominant per Bank) L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This inform RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) L R (Most IN Mature) Wide > 10 m Mature	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): Mation must also be completed NOTE: River Left (L) and Right (R) as looking downstream AUALITY Predominant per Bank) Forest, Wetland Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This inform RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) V Wide > 10m Mature	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 mation must also be completed ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ Predominant per Bank) Forest, Wetland Conservation Tillage ure Forest, Shrub or Old Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 mation must also be completed ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ Predominant per Bank) Forest, Wetland Gerorest, Wetland Gerorest, Wetland Gerorest, Shrub or Old Conservation Tillage Urban or Industrial Open Pasture, Row Cro	Width Max=30
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 mation must also be completed ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ AUALITY Predominant per Bank) Forest, Wetland Urban or Industrial Onen Pasture Row Cro	Width Max=30
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 Mation must also be completed ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ Predominant per Bank) Forest, Wetland Gerorest, Wetland Gerorest, Wetland Gerorest, Shrub or Old Gerorest, Shrub or Old Gerorest, Shrub or Old Gerorest, New Field Gential, Park, New Field Gerorest Mining or Construction	Width Max=30
	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 Mation must also be completed ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ Predominant per Bank) Forest, Wetland Gerorest, Wetland Gerorest, Wetland Gerorest, Shrub or Old Gerorest, Shrub or Old Gerorest, Shrub or Old Gerorest, New Field Gential, Park, New Field Gerorest Mining or Construction	Width Max=30
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters): 1.20 Mation must also be completed ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ Predominant per Bank) Forest, Wetland Gerorest, Wetland Gerorest, Wetland Gerorest, Shrub or Old Gerorest, Shrub or Old Gerorest, Shrub or Old Gerorest, New Field Gential, Park, New Field Gerorest, New Field Gerores	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This inform RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) V Wide > 10m Mature Moderate 5-10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ON Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS	AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 1.20 Mation must also be completed ANOTE: River Left (L) and Right (R) as looking downstream AUALITY Predominant per Bank) Forest, Wetland Gerorest, Wetland Gerorest, Wetland Gerorest, Shrub or Old Gertial, Park, New Field Gertial, Park, New F	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This inform RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Narrow <5m Reside None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ON Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of continuous p	AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 1.20 Mation must also be completed ANOTE: River Left (L) and Right (R) as looking downstream AUALITY Predominant per Bank) Forest, Wetland Urban or Industrial Open Pasture, Row Cro Mining or Construction WLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This inform RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH L R (Per Bank) V Wide > 10m Moderate 5-10m Moderate 5-10m Narrow < 5m None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ON Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of colors None 1.0 None 1.0 1.5	AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 1.20 Mation must also be completed ANOTE: River Left (L) and Right (R) as looking downstream AUALITY Predominant per Bank) Forest, Wetland Urban or Industrial Open Pasture, Row Cro Mining or Construction MLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS This inform RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH (Per Bank) (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Narrow <5m Reside None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ON Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of continuous p	AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): AVERAGE BANKFULL WIDTH (meters): 1.20 Mation must also be completed ANOTE: River Left (L) and Right (R) as looking downstream AUALITY Predominant per Bank) Forest, Wetland Urban or Industrial Open Pasture, Row Cro Mining or Construction WLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) Channel) Check ONLY one box): 2.0 2.0 3.0 3.0 >3.0 >3.0 >3.0	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)		
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream		
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION		
USGS Quadrangle Name: Fireside NRCS Soil Map Page: NRCS Soil Map Stream Order		
County: Senca Township / City:		
MISCELLANEOUS Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/11/17 Quantity: 0.05		
Photograph Information: Representative overview photos taken		
Elevated Turbidity? (Y/N): N Canopy (% open): 100%		
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:		
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)		
Is the sampling reach representative of the stream (Y/N) If not, please explain: Additional comments/description of pollution impacts:		
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y		
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location FLOW		



Google earth



SITE NAME/LOCATION Apex Republic Wind Farm SITE NUMBER DOH-212 RIVER BASIN Westerhouse Ditch DRAINAGE AREA (mi²) 0	.14
LENGTH OF STREAM REACH (ft) 1,148 LAT. 41.19424 LONG82.97120 RIVER CODE RIVER MILE	
DATE 04/25/17 SCORER BH COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL □ NONE / NATURAL CHANNEL □ RECOVERED □ RECOVERING □ RECENT OR NO RECOVERED □ RECENT OR NO REC	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metri
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt] O% FINE DETRITUS [3 pts] O%	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	Wax - 4
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] O% ARTIFICIAL [3 pts] O% O% O%	7
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 1	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	4.5
The Mark etchief environment of the contract o	15
OMM ENTS MAXIMUM POOL DEPTH (centimeters): 7	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.20	15
AVERAGE BANKFOLL WIDTH (Hetels).	13
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R	
RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Open Pasture Pow Creen	מו
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Unstance of Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Urban or Industrial Open Pasture, Row Cro	qr
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RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Narrow <5m Narrow <5m Residential, Park, New Field FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Conservation Tillage Urban or Industrial Open Pasture, Row Cro Mining or Construction	
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R Conservation Tillage Urban or Industrial Open Pasture, Row Cro Mining or Construction Mining or Construction Commendation Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	-
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m Narrow <5m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	-
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Cro None COMMENTS FLOW REGIME (At Time of Evaluation) Sinuosity (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): Check ONLY one box):	-
RIPARIAN WIDTH (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old	-
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Immature Forest, Wetland Immature Forest, Wetl	-) [

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)		
DOWNSTREAM DESIGNATED USE(S)		
WWH Name:	_ Distance from Evaluated Stream	
CWH Name:	Distance from Evaluated Stream	
EWH Name:	Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: Fireside	NRCS Soil Map Page: NRCS Soil Map Stream Order	
County: Senca Town	nship / City:	
MISCELLANEOUS		
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_	04/11/17 Quantity: 0.05	
Photograph Information: Representative overview photos taken		
Elevated Turbidity? (Y/N): N Canopy (% open): 100%		
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:		
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)		
Is the sampling reach representative of the stream (Y/N) If not, please explain:		
in the sampling reason representative or the stream (1777)	A, produce oppidini.	
Additional comments/description of pollution impacts:		
BIOTIC EVALUATION		
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site		
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)		
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc		
Comments Regarding Biology:		

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





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in

Case No(s). 17-2295-EL-BGN

Summary: Application Exhibit J Part 32 of 33 electronically filed by Teresa Orahood on behalf of Dylan F. Borchers