

Republic Wind Project

APPENDIX

F

WETLAND AND WATERBODY IMPACT TABLES

Table F-1 - Anticipated Wetland Impacts for the Republic Wind Project

Wetland ID	County	Latitude of Center Point	Longitude of Center Point	Acres within Project Area	Wetland Type	ORAM Score	Wetland Category	Anticipated Jurisdictional	Drainage Basin	Crossed (Yes/No)	TURBINES			TEMPORARY IMPACTS			ACCESS ROADS			TEMPORARY IMPACTS			PERMANENT IMPACTS		
											Turbine Impact (acres)	Turbine Impact (s.f.)	Turbine Impact (s.f.)	Access Road Impact (acres)	Access Road Impact (s.f.)	Access Road Impact (s.f.)	Access Road Impact (acres)	Access Road Impact (s.f.)	Collection Line Impact (acres)	Collection Line Impact (s.f.)	Collection Line Impact (s.f.)				
WOH-002	Seneca	41.201968	-83.034263	0.28	PEM	10	1	Yes	Beaver Creek	Yes	0	0.00	0	0.00	0	0.00	0	0.00	0	175	0.00	0	0.00	0	0.00
WOH-003	Seneca	41.190625	-83.012886	0.94	PEM/PO	41	Modified 2	No	Sugar Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-004	Seneca	41.192700	-83.033890	0.84	PFO	47.5	2	No	Beaver Creek, Sugar Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-006	Seneca	41.204380	-83.020032	0.58	PEM/PO	48.5	2	Yes	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-007	Seneca	41.205141	-83.002509	0.83	PEM/PO	56	2	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-008	Seneca	41.154758	-82.944182	28.97	PEM/PO	78	3	Yes	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-009	Seneca	41.160548	-82.959679	6.07	PFO	51	2	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-010	Seneca	41.165705	-82.948423	4.31	PEM/PO	49	2	Yes	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-101	Seneca	41.221805	-83.709945	0.91	PEM	54	1	Yes	Indian Creek - Sandusky River	Yes	0	0.00	0	0.00	0	0.00	0	0.00	0	641	0.00	0	0.00	0	0.00
WOH-102	Seneca	41.209362	-83.090177	1.01	PEM	17	1	No	Indian Creek - Sandusky River	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-105	Seneca	41.227356	-83.041710	0.24	PFO	38	Modified 2	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-106	Seneca	41.212642	-83.041332	0.1	PEM	5	1	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-107	Seneca	41.213152	-83.039569	0.42	PEM	28	1	Yes	Beaver Creek	Yes	0	0.00	0	0.00	0	0.00	0	0.00	0	356	0.00	0	0.00	0	0.00
WOH-108	Seneca	41.207756	-83.041203	4.2	PFO	55	2	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-109	Seneca	41.205033	-83.040217	0.14	PFO	48	2	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-110	Seneca	41.203937	-83.045129	2.73	PFO	67	3	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-111	Seneca	41.202879	-83.046153	2.13	PFO	67	3	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-112	Seneca	41.195529	-83.018252	4.16	PFO	60	2	No	Beaver Creek, Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-123	Seneca	41.186764	-83.026634	1.05	PFO	45	2	No	Sugar Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-124	Seneca	41.181940	-83.026110	0.15	PFO	43	Modified 2	No	Sugar Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-125	Seneca	41.180627	-83.027909	3.84	PFO	56	2	No	Sugar Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-126	Seneca	41.181471	-83.024988	0.84	PFO	48	2	No	Sugar Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-127	Seneca	41.179755	-83.022584	0.16	PFO	51	2	No	Sugar Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-128	Seneca	41.176205	-83.018391	0.37	PFO	31	1	No	Sugar Creek	Yes	0	0.00	0	0.00	0	0.00	0	0.00	0	2,323	0.00	0	0.00	0	0.00
WOH-129	Seneca	41.175564	-83.005209	0.28	PEM	10	1	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-130	Seneca	41.176763	-83.004862	0.24	PEM	46	2	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-131	Seneca	41.162311	-82.990186	6.19	PFO	60	2	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-132	Seneca	41.133728	-82.964188	1.52	PFO	65	3	No	Morrison Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-136	Seneca	41.180942	-82.876640	0.33	PEM/PO	42.5	Modified 2	No	Pickel Creek-Frontal Sandusky Bay	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-137	Seneca	41.185628	-82.887756	0.86	PEM	30	1	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-138	Seneca	41.192356	-82.891760	0.45	PEM	42.5	Modified 2	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-140	Seneca	41.199828	-82.924442	1.71	PFO	41	Modified 2	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-141	Seneca	41.167043	-82.954935	0.27	PEM	16	1	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-142	Seneca	41.167209	-82.957366	0.09	PEM	19	1	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-143	Seneca	41.142833	-82.931189	0.41	PFO	41	Modified 2	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-144	Seneca	41.163983	-82.950640	0.02	PEM	25.5	1	No	Westerhouse Ditch	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-145	Seneca	41.195810	-82.888428	0.45	PEM	35	Modified 2	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-200	Sandusky	41.266449	-82.917019	0.59	PFO	19	1	No	Pickel Creek-Frontal Sandusky Bay, Racoon Creek-Frontal Sandusky Bay	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-201	Sandusky	41.260036	-82.908767	0.12	PEM	6	1	No	Pickel Creek-Frontal Sandusky Bay	Yes	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-202	Seneca	41.232941	-82.845721	0.26	PEM	28	1	Yes	Pickel Creek-Frontal Sandusky Bay	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-203	Seneca	41.235412	-82.847667	1.03	PSS	17	1	No	Pickel Creek-Frontal Sandusky Bay	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-204	Seneca	41.225412	-82.917667	1.03	PFO	23	1	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-205	Seneca	41.225558	-82.914889	0.13	PEM	16	1	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-206	Seneca	41.220767	-82.874662	0.17	PEM	19	1	No	Pickel Creek-Frontal Sandusky Bay	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-207	Seneca	41.219078	-82.874660	0.12	PFO	39	Modified 2	No	Pickel Creek-Frontal Sandusky Bay	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-208	Seneca	41.206005	-82.922117	0.03	PFO	55	2	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-209	Seneca	41.203883	-82.924472	0.02	PFO	55	2	No	Beaver Creek	No	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00	0	0.00	0	0.00
WOH-210	Seneca	41.203101	-82.917019	5.19	PEM	22	1	Yes																	

Table F-2 - Anticipated Waterbody Crossing Methods & Impacts for the Republic Wind Project

Table F-2: Anticipated Watershed Crossing Methods & Impacts for the Republic Wind Project																											
Feature ID	County	Lower First In Project Area	Flow Regime	PMH/Cas Disaggregation	Drainage Basin	Anticipated Junctional Point (Year(s))	Crossed (Year(s))	Watershed (sq. miles)	TURNINGS			PERMANENT IMPACTS			CROSSINGS			ACCESS ROADS			COLLECTION LINES			PERMANENT IMPACTS			
									Turnback Impact (ft)	Turnback Impact (ft)	Turnback Impact (ft)	Turnback Impact (ft)	Access Road Impact (ft)	Access Road Impact (ft)	Access Road Impact (ft)	Number of Crossings	Crossing Method	Access Road Impact (ft)	Access Road Impact (ft)	Access Road Impact (ft)	Number of Crossings	Crossing Method	Collection Line Impact (ft)	Collection Line Impact (ft)	Collection Line Impact (ft)		
DOH-001	Sanborn	1,831	Epithermal	I	Indian Creek-Sanitary River	Yes	No	15	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-002	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-003	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-004	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-005	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-006	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-007	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-008	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-009	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-010	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-011	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-012	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-013	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-014	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-015	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-016	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-017	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-018	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-019	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-020	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-021	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-022	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-023	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-024	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-025	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-026	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-027	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-028	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-029	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-030	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-031	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-032	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-033	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-034	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-035	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-036	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-037	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-038	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-039	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-040	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-041	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-042	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-043	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-044	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-045	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-046	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-047	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-048	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-049	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-050	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-051	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-052	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-053	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-054	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-055	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
DOH-056	Sanborn	1,451	Epithermal	I	Indian Creek-Sanitary River	Yes	No	20	0	0.00	0	0	0.00	0	0.00	0	0.00	0	0.00	0							

Republic Wind Project

APPENDIX

G

HDD FRAC OUT CONTINGENCY
PLAN

INADVERTENT RELEASE OF DRILLING FLUID CONTINGENCY PLAN

For Horizontal Directional Drilling
Republic Wind Project
Seneca and Sandusky, Ohio

I. Introduction

Construction of the Republic Wind Project in Seneca and Sandusky Counties, Ohio, will include the use of trenchless excavation methods known as horizontal directional drilling (“HDD”). This widely used technique accomplishes the installation of buried utilities with minimal impact, by routing the utility under a sensitive feature (such as a stream, river or wetland). The HDD procedure uses a bentonite slurry, a fine clay material as a drilling lubricant (“drilling mud”). Although bentonite is non-toxic and non-hazardous, a potential environmental risk associated with conducting HDD under sensitive features occurs when bentonite is released to the surface during construction (sometimes referred to as an inadvertent release or “frac-out”).

Seepage of drilling fluid is most likely to occur near the bore entry and exit points where the drill head is shallow. Frac-outs can occur, however, in any location along a directional bore. This plan establishes operational procedures and responsibilities for the prevention, containment, and remediation of any of frac-outs that may occur in connection with the proposed HDD as part of the construction of the Republic Wind Project in Seneca and Sandusky Counties, Ohio.

The objectives of this Plan are to:

1. Minimize the potential for an inadvertent release associated with HDD activities;
2. Provide for the timely detection of an inadvertent release;
3. Protect sensitive water courses and associated riparian vegetation;
4. Ensure an organized, timely, and minimum-impact response in the event an inadvertent release occurs; and
5. Ensure that all appropriate notifications are made immediately to management and environmental personnel.

Measures to be deployed as part of the contingency plan include site inspection, proper training of the contractor and construction personnel, development of response procedures, provision of containment materials, and implementation of appropriate clean up procedures. These measures are described in detail below:

II. Description of Work

Drilling operations will be carefully monitored to determine if and when a frac-out may be occurring. Operations will be halted immediately upon detection of a significant decline in drilling pressure or other evidence that a frac-out may be occurring. The clean-up of all spills shall begin immediately. Management and environmental personnel shall be notified immediately of any spills and shall be consulted regarding remediation procedures. Spill response kits shall be maintained on-site and used if a frac-out occurs. A vacuum truck and containment materials, such as straw bales, shall also be readily available. In the event of a frac-out, the on-site supervisor of construction activities (“Site Supervisor”) will conduct an evaluation of the situation and direct recommended mitigation actions, based on the following guidelines:

1. If the frac-out is minor, easily contained, has not reached the surface, and is not threatening sensitive resources, then drilling operations may resume after use of a leak-stopping compound or redirection of the bore; and
2. If the frac-out has reached the surface, any hazardous materials within the bentonite shall be removed, contained and properly disposed of, as required by law. The drilling contractor shall be responsible for ensuring that the bentonite either is properly disposed of at an approved disposal facility or properly recycled in an approved manner. The Site Supervisor shall notify and take any necessary follow-up response actions in coordination with the relevant regulatory agency representatives. The Site Supervisor shall coordinate the mobilization of equipment stored at off-site locations (e.g., vacuum trucks) on an as needed basis.

III. Site Supervisor Responsibilities

The Site Supervisor has ultimate responsibility for implementing this plan. The Site Supervisor shall ensure that all relevant employees are trained prior to drilling. The Site Supervisor shall be notified immediately when a frac-out is detected. The Site Supervisor shall be responsible for ensuring that environmental personnel are aware of the frac-out, and coordinate personnel, response, remediation, and regulatory agency notification. The Site Supervisor shall ensure all waste materials are properly containerized, labeled, and removed from the site to an approved disposal facility by personnel experienced in the removal, transport and disposal of drilling mud.

The Site Supervisor shall be familiar with all aspects of the drilling activity, the contents of this plan and the conditions of approval under which the HDD is authorized to take place. The Site Supervisor shall have the authority to stop work and commit the resources (personnel and equipment) necessary to implement this plan. The Site Supervisor shall ensure that a copy of this plan is available (at the project work site) and accessible to all construction personnel. The Site

Supervisor shall ensure that all workers are properly trained and familiar with the necessary procedures for response to a frac-out, prior to commencement of drilling operations.

IV. Equipment

The Site Supervisor shall ensure that:

1. Spill responses kit and spill containment materials are available on-site at all times, and that the equipment is in good working order;
2. Equipment required to contain and remediate a frac-out release either will either be available at the work site or readily available at an offsite location within 15- minutes of the bore site; and
3. If equipment is required to be operated adjacent to a water course, absorbent pads and plastic sheeting for placement beneath motorized equipment shall be used to protect sensitive areas from engine fluids.

V. Training

Prior to the start of construction, the Site Supervisor shall ensure that relevant workers receive training in the following areas:

1. The provisions of this plan, equipment maintenance and site-specific permit and monitoring requirements;
2. Inspection procedures for release prevention and containment equipment and materials;
3. Contractor/employee obligations to immediately stop the drilling operation upon first evidence of the occurrence of a frac-out and to immediately report any frac-out releases;
4. Contractor/employee responsibilities in the event of a release;
5. Operation of release prevention and control equipment and the location of release control materials, as necessary and appropriate; and
6. Protocols for communication with relevant regulatory agency representatives who might be on-site during the remediation effort.

VI. Procedures

The following procedures shall be followed each day, prior to the start of work. This plan shall be available on-site during all construction. The Site Supervisor shall be on-site at any time that HDD is occurring or is planned to occur. The Site Supervisor shall ensure that a briefing is held at the start of each day of HDD to review the appropriate procedures to be followed in case of a frac-out. Questions shall be answered and clarification given on any point over which the HDD operating crew or other employees or contractors have concerns.

A. Drilling

Drilling pressures shall be closely monitored so they do not exceed those needed to penetrate the target formation. Pressure levels shall be monitored randomly by the operator. Pressure levels shall be set at a minimum level to prevent frac-outs. During the pilot bore, the drilled annulus shall be maintained. Cutters and reamers shall be pulled back into previously-drilled sections after each new joint of pipe is added.

Exit and entry pits shall be enclosed by silt fences and straw or similar material. A spill kit shall be on-site and used if a frac-out occurs. A vacuum truck shall be readily available prior to and during all HDD operations. Containment materials (straw, silt fencing, sand bags, frac-out spill kits, etc.) shall be staged on-site at locations where they are readily available and easily mobilized for immediate use in the event of a frac-out. If necessary, barriers (straw bales or sedimentation fences) between the bore site and the edge of the water source, shall be constructed, prior to drilling, to prevent released bentonite material from reaching the water.

Once the drill rig is in place, and drilling begins, the drill operator shall stop work whenever the pressure in the drill rig significantly drops or there is a lack of returns in the entrance pit. If either of these occur, the Site Supervisor shall be informed that a possible frac-out has occurred. The Site Supervisor and the drill rig operator(s) shall work to coordinate the likely location of the frac-out.

The location of the frac-out shall be recorded and notes made on the location and measures taken to address the concern. The following subsections shall be adhered to when addressing a frac-out situation.

Water containing mud, silt, bentonite, or other pollutants from equipment washing or other activities, shall not be allowed to enter any water course. The bentonite used in the drilling process shall be either disposed of at an approved disposal facility or recycled in an approved manner. Other construction materials and wastes shall be recycled, or disposed of, as appropriate.

B. Vacuum Truck

A vacuum truck shall be staged at a location from which it can be mobilized and relocated so that any place along the drill shot, can be reached by the apparatus, within thirty (30) minutes of information indicating a possible frac-out.

C. Field Response

The response of the field crew to a frac-out release shall be immediate and in accordance with procedures set forth in this plan. All appropriate emergency actions that do not pose additional threats to sensitive resources will be taken, as follows:

1. Boring shall stop immediately;
2. The bore stem shall be pulled back to relieve pressure on the frac-out;
3. The Site Supervisor shall be notified to ensure that management and environmental personnel are notified, adequate response actions are taken and required notifications are made;
4. The Site Supervisor shall evaluate the situation and recommend the type and level of response warranted, including the level of notification required;
5. If the frac-out is minor, easily contained, has not reached the surface and is not threatening any sensitive resources, then a leak-stopping compound shall be employed to block the frac-out. If the use of leak-stopping compound is not fully successful, then the bore stem shall be redirected to a new location along the desired drill path (i.e., where a frac-out has not occurred);
6. If the frac-out has reached the surface, any hazardous materials within the bentonite shall be removed to a depth of 48 inches, contained and properly disposed of, as required by law. A dike or berm may be constructed around the frac-out to entrap released drilling fluid, if necessary. Clean sand shall be deployed and the area returned to pre-project contours; and
7. If a frac-out occurs, reaches the surface and becomes widespread, the Site Supervisor shall authorize a vacuum truck and bulldozer stored off-site to be mobilized. The vacuum truck may be either positioned at either end of the line of the drill so that the frac-out can be reached by crews on foot, or may be pulled by a bulldozer, so that contaminated soils can be vacuumed up.

D. Response Close-out Procedures

1. When the release has been contained and remediated, response close-out activities shall be conducted at the direction of the Site Supervisor. These activities shall include those below.
2. The recovered drilling fluid shall either be recycled or transported to an approved facility for disposal. No recovered drilling fluids may be discharged into streams, storm drains or any other water source;
3. All frac-out excavation and remediation sites shall be returned to pre-project contours using clean fill, as necessary; and
4. All containment measures (fiber rolls, straw bale, etc.) shall be removed, unless otherwise specified by the Site Supervisor.

E. Resumption of HDD

For minor releases not necessitating external notification, HDD may continue, if full containment is achieved through the use of a leak-stopping compound or redirection of the bore and the cleanup crew remains at the frac-out location throughout the HDD activity. For releases necessitating external notification, HDD activities shall not restart without prior approval from the Site Supervisor.

F. Bore Abandonment

Abandonment of the bore will only be required when all efforts to control the frac-out within the existing directional bore have failed.

VII. Notification

In the event of a frac-out that reaches a water source, the Site Supervisor shall notify safety personnel so they can notify the appropriate regulatory agencies. All agency notifications will occur within 24 hours and proper documentation will be created in a timely and complete manner.

The following information will be provided:

1. Name and telephone number of person reporting;
2. Location of the release;
3. Date and time of release;
4. Type and quantity, estimated size of release;
5. How the release occurred;
6. The type of activity that was occurring around the area of the frac-out;

7. Description of any sensitive areas, and their location in relation to the frac-out; and
8. Description of the methods used to remediate the site.

A. Communicating with Regulatory Agency Personnel

All employees and subcontractors shall adhere to the following protocols when regulatory agency personnel arrive on site. Regulatory agency personnel shall be required to comply with appropriate safety rules. Only the Site Supervisor, safety personnel and environmental should coordinate communication with regulatory agency personnel.

B. Documentation

The Site Supervisor shall record the frac-out event in his or her daily log. The log will include the following:

1. Details on the release event, including an estimate of the amount of bentonite released;
2. The location and time of release;
3. The size of the area impacted, and the success of the remediation action;
4. Name and telephone number of person reporting;
5. Date;
6. How the release occurred;
7. The type of activity that was occurring around the area of the frac-out;
8. Description of any sensitive areas, and their location in relation to the frac-out;
9. Description of the methods used to remediate the site; and
10. Listing of the water-related permits for the project.

VIII. Project Completion and Clean-up

1. All materials and any rubbish-construction debris shall be removed from the construction zone at the end of each work day;
2. Sump pits at bore entry and exits will be filled and returned to natural grade; and
3. All protective measures (fiber rolls, straw bale, silt fence, etc.) will be removed unless otherwise specified by the Site Supervisor.

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Summary: Application Exhibit J Appendices F and G electronically filed by Teresa Orahod
on behalf of Sally W. Bloomfield