DEPARTMENT OF THE ARMY
PITTSBURGH DISTRICT, CORPS OF ENGINEERS
WILLIAM S. MOORHEAD FEDERAL BUILDING
1000 LIBERTY AVENUE
PITTSBURGH, PA 15222-4186

return to Marcia file or dest

January 20, 2010

REPLY TO

Operations Division
Regulatory Branch
2007-463

Consol Pennsylvania Coal Company, LLC
Attn: Mr. Ed Suter
1525 Pleasant Grove Road
P.O. Box J
Claysville, Pennsylvania 15323

Dear Mr. Suter:

Reference is made to the Wetland Delineation Report, dated April 10, 2008, with revisions dated September 5, 2008, prepared by Civil & Environmental Consultants, Inc., (CEC) for the proposed Bailey Mine Coal Refuse Disposal Areas No. 5 and 6 Project, located in Richhill Township, Greene County, Pennsylvania.

On May 9, 2008, I met with you and your project consultants, CEC, and representatives from the Pennsylvania Department of Environmental Protection, California Mining Office, to verify the aquatic resources located on the 706 acre site. The site contains 35,433 linear feet of stream channel, 6.76 acres of wetlands, 0.029 acres of vernal pools, and 0.06 acres of open water. The project area is located in the Owens Run Watershed. Owens Run is a tributary to the Enlow Fork of Wheeling Creek, a Traditional Navigable Waterway (TNW), which flows to the Ohio River.

The Corps of Engineers' authority to regulate waters of the United States is based on the definitions and limits of jurisdiction contained in 33 CFR 328. Navigable waters, their tributaries, and surrounding wetlands are waters of the United States subject to the provisions of Section 404 of the Clean Water Act (CWA) and Section 10 of the 1899 Rivers and Harbors Act. Based on our site inspection and review of the information submitted, the following jurisdictional determination has been made.

This office has determined 44 stream channels containing 27,569 feet are relatively permanent waters (RPW), or the headwater reaches of RPWs, that have a direct connection to Wheeling Creek and are considered jurisdictional. Seventy-seven areas containing 5.674 acres of wetland and one open water impoundment containing 0.06 acres are directly abutting these stream channels, and nine areas containing 0.773 acres of wetland are located adjacent to these stream channels and this office has determined they have a significant nexus. Therefore, we have determined that 6.447 acres of wetlands located in 86 areas and one open water impoundment containing 0.06 acres are jurisdictional and will be regulated under Section 404 of the CWA.

RECORD
FILE

We have determined that 13 streams containing 3,181 feet of stream channel have no hydrologic connection to regulated waters of the United States and are considered isolated. This includes 12 streams containing 1,959 feet that are ephemeral stream channels that are non-relatively permanent waters (NRPWs) and a 1,222 foot channel, 32705C that is a RPW. Thirty additional stream channels containing 4,683 feet have been determined to be ephemeral NRPWs. The site contains 17 wetland areas containing 0.313 acres and 3 vernal pools containing 0.029 acres that are also considered isolated. This office has not established a significant nexus to the closest TNW, Wheeling Creek, for either the isolated aquatic resources or the ephemeral, NRPWs, stream channels. Therefore, we have determined that they should not be considered jurisdictional and will not be regulated under Section 404 of the CWA. Please be advised that the Pennsylvania Department of Environmental Resources may regulate these non-jurisdictional streams, wetlands, and vernal pools located on this site.

Please see the attached chart for the Federal jurisdictional status of all resources located within the project area. This delineation verification will remain valid for a period of five years from the date of this letter, unless new information warrants revision of the delineation.

If you have any questions, you may email me at marica.h.haberman@usace.army.mil or call me at (412) 395-7361.

Sincerely,

Marcia H. Haberman

Marcia H. Haberman
Chief, Southern Section Regulatory Branch

Attachment

CF:
PA DEP, CA Mining Office
Civil & Environmental Consultants

Consol Bailey 5 and 6
Jurisdictional Determination
LRP 2007-463

Waters_Name	Cowad	HGM_Cc	Area (ac	Linear (f	Waters	Latitude(dd na	Longitude dd r	Local_Water
unt 32705 STREAM SYSTEM - JD								
32705, 2ndn3rd,4thorde	N/A	N/A	N/A	8208	TNWRI	39.95546	-80.40342	32705
TOTAL FEET				8208				
Wetland 24	PEM	Riverine	0.169	N/A	ABT	39.95788	-80.40033	32705
Wetland 23	PEM	Riverine	0.33	N/A	ABT	39.95732	-80.40065	32705
Wetland 22	PEM	Riverine	0.02	N/A	ABT	39.95676	-80.40128	32705
Wetland 21A	PEM	Riverine	0.028	N/A	ABT	39.95661	-80.40171	32705
Wetland 21	PEM	Riverine	0.056	N/A	ABT	39.95636	-80.40199	32705
Wetland 19A	PEM	Riverine	0.012	N/A	ABT	39.95546	-80.40345	32705
Wetland 12	PEM	Riverine	0.053	N/A	ABT	39.95442	-80.40543	32705
Wetland 11	PEM	Riverine	0.161	N/A	ABT	39.95430	-80.40664	32705
Wetland 11A	PEM	Riverine	0.057	N/A	ABT	39.95455	-80.40624	32705
Wetland 10	PEM	Riverine	0.033	N/A	ABT	39.95338	-80.40859	32705
Wetland 9	PEM	Riverine	0.122	N/A	ABT	39.95270	-80.41025	32705
Wetland 100A	PFO	Riverine	0.106	N/A	ABT	39.95048	-80.41585	32705
Wetland 7	PEM	Riverine	0.033	N/A	ABT	39.95113	-80.41387	32705
Wetland 7A	PEM	Riverine	0.006	N/A	ABT	39.95108	-80.41395	32705
Wetland 7B	PEM	Riverine	0.015	N/A	ABT	39.95128	-80.41360	32705
Wetland 7C	PEM	Riverine	0.009	N/A	ABT	39.95131	-80.41351	32705
Wetland 6	PEM	Riverine	0.099	N/A	ABT	39.95064	-80.41471	32705
Wetland 6A	PEM	Riverine	0.069	N/A	ABT	39.95084	-80.41500	32705
Wetland 100	PEM	Riverine	0.517	N/A	ABT	39.95035	-80.41567	32705
Wetland 5	PEM	Riverine	0.013	N/A	ABT	39.94984	-80.41714	32705
Wetland 5A	PEM	Riverine	0.011	N/A	ABT	39.94980	-80.41693	32705
Wetland 5B	PEM	Riverine	0.039	N/A	ABT	39.94983	-80.41664	32705
Wetland 5C	PEM	Riverine	0.034	N/A	ABT	39.94992	-80.41636	32705
Wetland 4	PEM	Riverine	0.028	N/A	ABT	39.94963	-80.41749	32705
Wetland 3	PEM	Riverine	0.041	N/A	ABT	39.94869	-80.41836	32705
Wetland 3A	PEM	Riverine	0.033	N/A	ABT	39.94857	-80.41861	32705
Wetland 3B	PEM	Riverine	0.009	N/A	ABT	39.94900	-80.41810	32705
Wetland 2	PEM	Riverine	0.109	N/A	ABT	39.94839	-80.41882	32705
Wetland 8A	PFO	Riverine	0.162	N/A	ABT	39.95167	-80.41344	32705
Wetland 108	PEM	Riverine	0.096	N/A	ABT	39.95227	-80.41137	32705
Wetland 8	PEM	Riverine	0.288	N/A	ABT	39.95172	-80.41288	32705
Wetland 8B	PEM	Riverine	0.029	N/A	ADJ	39.95124	-80.41426	32705
Wetland 17	PEM	Riverine	0.078	N/A	ADJ	39.95463	-80.40546	32705
Wetland 18	PEM	Slope	0.31	N/A	ADJ	39.95512	-80.40434	32705
Wetland 20	PEM	Slope	0.055	N/A	ADJ	39.95580	-80.40346	32705
Wetland 127	PEM	Slope	0.056	N/A	ADJ	39.95586	-80.40234	32705
Wetland 128	PEM	Slope	0.104	N/A	ADJ	39.95590	-80.40207	32705
TOTAL ACREAGE			3.39					

Consol Bailey 5 and 6
Jurisdictional Determination
LRP 2007-463

Waters_Name	Cowad	HGM_Cc	Area (aci	Linear (f	Waters	Latitude(dd na	Longitude dd r	Local_Water
UNT 32705 TRIBUTARY'S - JD								
32705A, 1st Order	N/A	N/A	N/A	165	RPW	39.94789	-80.41932	32705
32705B, 1st Order	N/A	N/A	N/A	43	RPW	39.94824	-80.41858	32705
32705E, 1st Order	N/A	N/A	N/A	66	RPW	39.95151	-80.41305	32705
32705H, 1st & 2nd Orde	N/A	N/A	N/A	1263	TNWRI	39.95662	-80.40675	32705
32705I, 1st Order	N/A	N/A	N/A	265	RPW	39.95449	-80.40587	32705
32705J, 1st Order	N/A	N/A	N/A	9	RPW	39.95500	-80.40404	32705
32705K & (1b), 2nd Ord	N/A	N/A	N/A	77	RPW	39.95546	-80.40342	32705
32705L, 1st Order	N/A	N/A	N/A	431	TNWRI	39.95622	-80.40237	32705
32705M, 1st Order	N/A	N/A	N/A	47	RPW	39.95622	-80.40213	32705
32705N, 1st Order	N/A	N/A	N/A	47	RPW	39.95631	-80.40202	32705
32705O, 1st Order	N/A	N/A	N/A	164	RPW	39.95659	-80.40162	32705
32705P, 1st Order	N/A	N/A	N/A	16	RPW	39.95685	-80.40113	32705
32705S, 1st Order	N/A	N/A	N/A	40	RPW	39.95536	-80.40334	32705
TOTAL FEET				2633				

Wetland 1	PEM	Riverine	0.132	N/A	ABT	39.94803	-80.41909	32705A
Wetland 116	PEM	Riverine	0.027	N/A	ABT	39.95683	-80.40645	32705H
Wetland 116A	PEM	Riverine	0.036	N/A	ABT	39.95715	-80.40622	32705H
Wetland 115	PEM	Riverine	0.036	N/A	ABT	39.95646	-80.40694	32705H
Wetland 114	PEM	Riverine	0.023	N/A	ABT	39.95520	-80.40663	32705H
Wetland 13	PEM	Riverine	0.025	N/A	ABT	39.95381	-80.40534	32705I
Wetland 13A	PEM	Slope	0.064	N/A	ABT	39.95331	-80.40499	32705I
Wetland 13B	PEM	Riverine	0.024	N/A	ABT	39.95412	-80.40570	32705I
Wetland 14	PEM	Slope	0.013	N/A	ABT	39.95492	-80.40384	32705J
Wetland 19	PEM	Riverine	0.008	N/A	ABT	39.95503	-80.40410	32705J
Wetland 25	PEM	Riverine	0.071	N/A	ABT	39.95679	-80.40197	32705L
Wetland 129	PEM	Slope	0.644	N/A	ABT	39.95674	-80.40035	32705O
Wetland 16	PEM	Slope	0.14	N/A	ABT	39.95536	-80.40274	32705S
Wetland 16B	PEM	Slope	0.011	N/A	ABT	39.95544	-80.40316	32705S
TOTAL ACREAGE			1.254					

OPEN WATER 1	0.06	32705I
TOTAL OPEN WATER	0.06	

Consol Bailey 5 and 6
Jurisdictional Determination
LRP 2007-463

Waters_Name	Cowad	HGM_Cc	Area (aci	Linear (f	Waters	Latitude(dd na	Longitude dd r	Local_Water
STREAM 32704 SYSTEM - JD								
32704 2nd & 3rd order	N/A	N/A	N/A	736	RPW	39.96021	-80.42421	32704
32704A, 1st Order	N/A	N/A	N/A	151	RPW	39.95973	-80.42444	32704
32704B, 1st Order	N/A	N/A	N/A	157	RPW	39.96021	-80.42421	32704
32704B-1, 1st Order	N/A	N/A	N/A	52	RPW	39.96054	-80.42419	32704
32704I, 1st Order	N/A	N/A	N/A	270	RPW	39.96082	-80.42249	32704
32704E, 1st Order	N/A	N/A	N/A	154	RPW	39.96064	-80.42402	32704
32704F, 1st Order	N/A	N/A	N/A	266	RPW	39.96077	-80.42315	32704
TOTAL STREAM FEET				1786				
Wetland 31	PSS1	Riverine	0.221	N/A	ABT	39.96046	-80.42409	32704
Wetland 31A	PEM	Riverine	0.024	N/A	ABT	39.96062	-80.42372	32704
Wetland 30	PSS1	Slope	0.451	N/A	ABT	39.95936	-80.42411	32704
Wetland 34	PSS1	Slope	0.07	N/A	ABT	39.96109	-80.42369	32704
TOTAL ACREAGE			0.766					
STREAM SYSTEM 32706 WITH WETLANDS - JD								
32706, 1st,2nd,3rd Orde	N/A	N/A	N/A	3651	RPW	39.95082	-80.41513	32706
32706A, 1st Order	N/A	N/A	N/A	497	RPW	39.95412	-80.41599	32706
32706B, 1st Order	N/A	N/A	N/A	166	RPW	39.95702	-80.41637	32706
32706C, 1st Order	N/A	N/A	N/A	49	RPW	39.95708	-80.41626	32706
32706E,1st, 2nd, 3rd Or	N/A	N/A	N/A	629	RPW	39.95837	-80.41627	32706
32706E-1, 1st & 2nd Or	N/A	N/A	N/A	710	RPW	39.95837	-80.41627	32706
32706E-2, 1st Order	N/A	N/A	N/A	103	RPW	39.95901	-80.41585	32706
32706E-3, 1st & 2nd Or	N/A	N/A	N/A	248	RPW	39.95858	-80.41583	32706
32706G, 1st Order	N/A	N/A	N/A	365	RPW	39.95812	-80.41686	32706
TOTAL FEET				6418				
Wetland 106	PEM	Riverine	0.043	N/A	ABT	39.95888	-80.41703	32706
Wetland 104	PEM	Riverine	0.013	N/A	ABT	39.95815	-80.41684	32706
Wetland 104A	PEM	Riverine	0.043	N/A	ABT	39.95798	-80.41672	32706
Wetland 104B	PEM	Riverine	0.003	N/A	ABT	39.95828	-80.41677	32706
Wetland 104C	PEM	Riverine	0.025	N/A	ABT	39.95778	-80.41651	32706
Wetland 105	PEM	Riverine	0.035	N/A	ABT	39.95708	-80.41637	32706
Wetland 105A	PEM	Riverine	0.005	N/A	ABT	39.95725	-80.41647	32706
Wetland 102	PEM	Riverine	0.008	N/A	ABT	39.95408	-80.41596	32706
Wetland 101	PSS1	Riverine	0.007	N/A	ABT	39.95184	-80.41483	32706
Wetland 107	PEM	Slope	0.032		ABT	39.95838	-80.41504	NT32706E-3
Wetland 103	PEM	Slope	0.044	N/A	ADJ	39.95688	-80.41672	32706
Wetland 103A	PEM	Slope	0.013	N/A	ABT	39.95678	-80.41652	32706
Wetland 130	PEM	Riverine	0.029	N/A	ADJ	39.95173	-80.41456	32706
TOTAL ACREAGE			0.3					

Consol Bailey 5 and 6
Jurisdictional Determination
LRP 2007-463

Waters_Name	Cowad	HGM_Cc	Area (ac	Linear (f	Waters	Latitude(dd n	Longitude dd r	Local_Water
UNT-OR STREAM SYSTEM - JD								
UNT-OR, 2nd Order	N/A	N/A	N/A	3693	RPW	39.94919	-80.42442	Owens Run
UNT-OR A, 1st Order	N/A	N/A	N/A	44	RPW	39.94956	-80.42406	Owens Run
UNT-OR B, 1st Order	N/A	N/A	N/A	64	RPW	39.95100	-80.42388	Owens Run
UNT-OR D, 1st Order	N/A	N/A	N/A	332	RPW	39.95242	-80.42360	Owens Run
UNT-OR E, 1st Order	N/A	N/A	N/A	317	RPW	39.95370	-80.42349	Owens Run
UNT-OR J, 1st Order	N/A	N/A	N/A	164	RPW	39.95544	-80.42174	Owens Run
UNT-OR K, 1st Order	N/A	N/A	N/A	164	RPW	39.95591	-80.42165	Owens Run
UNT-OR N, 1st Order	N/A	N/A	N/A	93	RPW	39.95689	-80.42128	Owens Run
TOTAL FEET				4871				
Wetland 122	PEM	Riverine	0.014	N/A	ABT	39.95570	-80.42167	Owens Run
Wetland 121	PEM	Riverine	0.021	N/A	ABT	39.95433	-80.42285	Owens Run
Wetland 118	PEM	Riverine	0.100	N/A	ABT	39.95065	-80.42399	Owens Run
Wetland 117	PEM	Riverine	0.008	N/A	ABT	39.94955	-80.42412	Owens Run
Wetland 126	PEM	Slope	0.019	N/A	ABT	39.95547	-80.42112	Owens Run
Wetland 125	PEM	Slope	0.042	N/A	ABT	39.95581	-80.42099	Owens Run
Wetland 123	PEM	Slope	0.154	N/A	ABT	39.95695	-80.42057	Owens Run
Wetland 120	PEM	Riverine	0.008	N/A	ABT	39.95245	-80.42367	Owens Run
Wetland 119	PEM	Slope	0.068	N/A	ADJ	39.95181	-80.42359	Owens Run
TOTAL ACREAGE			0.434					
UNT 2 STREAM - JD								
UNT2-OR, 1st Order	N/A	N/A	N/A	288	RPW	39.94839	-80.42290	Owens Run
TOTAL FEET				288				
Wetland 26	PEM	Riverine	0.034	N/A	RPWW	39.94932	-80.42238	Owens Run
TOTAL ACREAGE			0.034					
UNT 3-OR STREAM JD								
UNT3-OR, 3rd Order	N/A	N/A	N/A	52	RPW	39.94718	-80.41067	Owens Run
TOTAL FEET				52				
UNT 32705F STREAM SYSTEM - JD								
32705F, 1st &2ndOrder	N/A	N/A	N/A	2437	RPW	39.95773	-80.41173	32705
32705F-7, 1st Order	N/A	N/A	N/A	253	RPW	39.95773	-80.41173	32705
32705F-4, 1st Order	N/A	N/A	N/A	287	RPW	39.95678	-80.41142	32705
32705F-6, 1st Order	N/A	N/A	N/A	336	RPW	39.95719	-80.41149	32705
TOTAL FEET				3313				
Wetland 112	PEM	Riverine	0.035	N/A	ABT	39.95646	-80.41148	32705
Wetland 112A	PEM	Riverine	0.007	N/A	ABT	39.95673	-80.41139	32705
Wetland 111	PEM	Riverine	0.007	N/A	ABT	39.95574	-80.41147	32705
Wetland 110	PEM	Riverine	0.045	N/A	ABT	39.95434	-80.41125	32705
Wetland 110A	PEM	Riverine	0.051	N/A	ABT	39.95490	-80.41136	32705
Wetland 109	PEM	Riverine	0.066	N/A	ABT	39.95361	-80.41121	32705
Wetland 108A	PEM	Riverine	0.008	N/A	ABT	39.95264	-80.41116	32705
Wetland 113	PEM	Slope	0.05	N/A	ABT	39.95711	-80.41064	32705
TOTAL ACREAGE			0.269					

Consol Bailey 5 and 6
Jurisdictional Determination
LRP 2007-463

Waters_Name	Cowad	WI Locat	Area (ac	Linear (f	Waters	Latitude(dd n	Longitude dd r	Local_Water
ISOLATED WETLANDS								
Wetland 27	PEM	Slope	0.05	N/A	Isolate	39.96091	-80.41568	32704
Wetland 29	PEM	Slope	0.077	N/A	Isolate	39.95846	-80.42464	32704
Wetland 30A	PSS1	Slope	0.006	N/A	Isolate	39.95906	-80.42443	32704
Wetland 32	PSS1	Slope	0.016	N/A	Isolate	39.96001	-80.42348	32704
Wetland 33	PEM	Slope	0.025	N/A	Isolate	39.96168	-80.42247	32704
Wetland 15	PEM	Slope	0.041	N/A	Isolate	39.95513	-80.40289	32705
Wetland 15A	PEM	Slope	0.008	N/A	Isolate	39.95520	-80.40276	32705
Wetland 15B	PEM	Slope	0.003	N/A	Isolate	39.95523	-80.40265	32705
Wetland 16A	PEM	Slope	0.017	N/A	Isolate	39.95526	-80.40280	32705
Wetland 128A	PEM	Slope	0.008	N/A	Isolate	39.95674	-80.40035	32705
Wetland 129A	PEM	Slope	0.011	N/A	Isolate	39.95660	-80.40024	32705
Wetland 129B	PEM	Slope	0.023	N/A	Isolate	39.95649	-80.39997	32705
Wetland 129C	PEM	Slope	0.006	N/A	Isolate	39.95649	-80.40023	32705
Wetland 23A	PEM	Slope	0.005	N/A	Isolate	39.95715	-80.40077	32705
Wetland 107A	PEM	Slope	0.013	N/A	Isolate	39.95847	-80.41469	32706
Wetland 123A	PEM	Slope	0.001	N/A	Isolate	39.95679	-80.42091	Owens Run
Wetland 124	PEM	Slope	0.003	N/A	Isolate	39.95638	-80.42098	Owens Run
Total acreage			0.313					
ISOLATED STREAMS								
UNT OR-O 1st order				59	Isolatec	39.95720	-80.42123	Owens Run
UNT3-OR A, 1st Order	N/A	N/A	N/A	212	Isolate	39.94823	-80.41437	Owens Run
32705F-2, 1st Order	N/A	N/A	N/A	324	Isolate	39.95605	-80.41132	32705
32705K-1a,1st Order	N/A	N/A	N/A	101	Isolate	39.95515	-80.40300	32705
UNT-OR C, 1st Order	N/A	N/A	N/A	49	Isolate	39.95138	-80.42372	Owens Run
UNT-OR G, 1st Order	N/A	N/A	N/A	118	Isolate	39.95502	-80.42213	Owens Run
UNT-OR H, 1st Order	N/A	N/A	N/A	154	Isolate	39.95515	-80.42194	Owens Run
Total feet				1017				
ISOLATED POOLS								
Vernal Pool 2				0.016				
Vernal Pool 3				0.012				
Vernal Pool 4				0.001				
Total acreage				0.029				

Consol Bailey 5 and 6
Jurisdictional Determination
LRP 2007-463

Waters_Name	Cowad	WI	Locat	Area (ac	Linear (f	Waters	Latitude(dd n	Longitude dd r	Local_Water
EPHEMERAL STREAMS = NRPW									
32704, 1st Order	N/A	N/A	N/A		94	NRPW	39.96077	-80.42219	32704
32704C, 1st Order	N/A	N/A	N/A		301	NRPW	39.96039	-80.42405	32704
32704D, 1st Order	N/A	N/A	N/A		160	NRPW	39.96077	-80.42321	32704
32704G, 1st Order	N/A	N/A	N/A		119	NRPW	39.96079	-80.42301	32704
32704H, 1st Order	N/A	N/A	N/A		245	NRPW	39.96079	-80.42301	32704
32704J, 1st Order	N/A	N/A	N/A		102	NRPW	39.96077	-80.42219	32704
32705, 1st order	N/A	N/A	N/A		135	NRPW	39.95845	-80.39919	32705
32705F-1, 1st Order	N/A	N/A	N/A		312	NRPW	39.95563	-80.41144	32705
32705F-3, 1st Order	N/A	N/A	N/A		100	NRPW	39.95645	-80.41153	32705
32705F-5, 1st Order	N/A	N/A	N/A		156	NRPW	39.95709	-80.41153	32705
32705G, 1st Order	N/A	N/A	N/A		506	NRPW	39.95217	-80.41136	32705
32705H-1, 1st Order	N/A	N/A	N/A		53	NRPW	39.95626	-80.40713	32705
32705H-2, 1st Order	N/A	N/A	N/A		53	NRPW	39.95662	-80.40675	32705
32705Q, 1st Order	N/A	N/A	N/A		258	NRPW	39.95787	-80.40023	32705
32705R, 1st Order	N/A	N/A	N/A		176	NRPW	39.95845	-80.39919	32705
32706D, 1st Order	N/A	N/A	N/A		71	NRPW	39.95711	-80.41649	32706
32706E-4, 1st Order	N/A	N/A	N/A		129	NRPW	39.95859	-80.41551	32706
32706E-5, 1st Order	N/A	N/A	N/A		124	NRPW	39.95883	-80.41546	32706
32706F, 1st Order	N/A	N/A	N/A		50	NRPW	39.95802	-80.41684	32706
32706H, 1st Order	N/A	N/A	N/A		184	NRPW	39.95897	-80.41720	32706
32706I, 1st Order	N/A	N/A	N/A		198	NRPW	39.95907	-80.41740	32706
32706J, 1st Order	N/A	N/A	N/A		146	NRPW	39.95911	-80.41749	32706
UNT-OR, 1st Order	N/A	N/A	N/A		140	NRPW	39.95744	-80.42099	Owens Run
UNT-OR F, 1st Order	N/A	N/A	N/A		154	NRPW	39.95496	-80.42252	Owens Run
UNT-OR I, 1st Order	N/A	N/A	N/A		73	NRPW	39.95542	-80.42175	Owens Run
UNT-OR L, 1st Order	N/A	N/A	N/A		31	NRPW	39.95625	-80.42160	Owens Run
UNT-OR M, 1st Order	N/A	N/A	N/A		33	NRPW	39.95651	-80.42141	Owens Run
UNT-OR P, 1st Order	N/A	N/A	N/A		204	NRPW	39.95723	-80.42107	Owens Run
UNT-OR Q, 1st Order	N/A	N/A	N/A		208	NRPW	39.95744	-80.42099	Owens Run
UNT3-OR, 1st Order	N/A	N/A	N/A		168	NRPW	39.94588	-80.40859	Owens Run
TOTAL FEET					4683				
ISOLATED STREAM 32705C SYSTEM									
32705C	N/A	N/A	N/A		1,222	RPW	39.94968	-80.41779	32705
32705C-1, 1st Order	N/A	N/A	N/A		240	NRPW	39.95150	-80.41918	32705
32705C-2, 1st Order	N/A	N/A	N/A		132	NRPW	39.95150	-80.41920	32705
32705C-3, 1st Order	N/A	N/A	N/A		283	NRPW	39.95157	-80.41927	32705
32705C-4, 1st Order	N/A	N/A	N/A		105	NRPW	39.95223	-80.41965	32705
32705C-5, 1st Order	N/A	N/A	N/A		182	NRPW	39.95238	-80.41976	32705
TOTAL FEET					2164				

1) THE WETLAND DELINEATION SERVICES WERE PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC ON AUGUST 2007 THROUGH MARCH 2008

2) THE WETLAND DELINEATION SERVICES PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS INC WERE CONDUCTED IN A MANNER CONSISTENT WITH THE CRITERIA CONTAINED IN THE 1987 U S ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987 MANUAL), AND WITH THE LEVEL OF CARE AND SKILL ORDINARILY EXERCISED BY THE MEMBERS OF THE ENVIRONMENTAL CONSULTING PROFESSION PRACTICING CONTEMPORANEOUSLY UNDER SIMILAR CONDITIONS IN THE LOCALITY OF THE PROJECT IT MUST BE RECOGNIZED THAT THE JURISDICTIONAL WATER DELINEATION WAS BASED ON FIELD OBSERVATIONS AND CIVIL & ENVIRONMENTAL CONSULTANTS' PROFESSIONAL INTERPRETATIONS OF THE CRITERIA IN THE 1987 MANUAL WETLAND DETERMINATIONS MAY CHANGE SUBSEQUENT TO CIVIL AND ENVIRONMENTAL CONSULTANTS' DELINEATION, BASED ON CHANGES TO REGULATORY CRITERIA, CHANGES TO DRAINAGE, AND OTHER HUMAN ACTIVITIES AND/OR LAND DISTURBANCES

TOPOGRAPHIC CONTOURS PROVIDED BY CONSOL PENNSYLVANIA COAL COMPANY, LLC 2007

DWN BY	CHK BY
CBL	

1 inch equals 225 feet

DATE: REVISED 9/4/2008

0 225 450 675 900 Feet

Legend

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Surface Water Connection
- Wetland
- Open Water
- Vernal Pool
- Off-Site Wetland
- No Access
- Project Boundary
- Hydrologically Isolated Resource

ISSUED FOR CONSOL ENERGY

ISSUED BY CEI

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 Baldwin Road
Pittsburgh, PA 15205-9702
1-800-365-2324
Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL * St Louis MO * Export, PA * Detroit, MI

WETLAND AND STREAM DELINEATION MAP
BAILEY COAL REFUSE DISPOSAL AREAS NO. 5 AND 6
CONSOL PENNSYLVANIA COAL COMPANY, LLC
GREENE COUNTY, PENNSYLVANIA

PROJECT NO.: 071-522.0001 FIGURE: 4

J:\Projects\2007\071522\maps\final\071522_delineation_3_14_08.mxd

TABLE 3-1
Stream Impact Summary
Bailey Mine Coal Refuse Disposal Areas No. 5 and 6
Richhill Township, Greene County, Pennsylvania
Consol Pennsylvania Coal Company LLC
CEC Project 071-522

Stream Name	Stream Length (linear feet)			
	Perennial	Intermittent	Ephemeral	Total
Sediment Pond Development Area II #5				
32705	3,028			3,028
32705A	165			165
32705B		43		43
32705C*		1,222		1,222
32705C-1*			240	240
32705C-2*			132	132
32705C-3*			283	283
32705C-4*			105	105
32705C-5*			182	182
32706		364		364
UNT2-OR		288		288
SUBTOTAL	**3,193**	**1,917**	**942**	**6,052**
Slurry Impoundment II 5 - INCLUDE COFSE DIS				
32705 (141 l.f. **)	2,552	2,504	352	5,408
32705E		66		66
32705F		2,397	40	2,437
32705F-1**			312	312
32705F-2*			324	324
32705F-3**			100	100
32705F-4		287		287
32705F-5**			156	156
32705F-6		336		336
32705F-7		125	128	253
32705G**			506	506
32705H		1,109	154	1,263
32705H-1**			53	53
32705H-2**			53	53
32705I		265		265
32705J		9		9
32705K (101 l.f. *)		179		179
32705L		347	84	431
32705M		47		47
32705N		47		47
32705O		164		164
32705P		16		16
32705Q**			258	258
32705R**			176	176
32705S		13		13
32706		3,287		3,287
32706A		497		497
32706B		74	92	166
32706C		49		49
32706D**			71	71

TABLE 3-1
Stream Impact Summary
Bailey Mine Coal Refuse Disposal Areas No. 5 and 6
Richhill Township, Greene County, Pennsylvania
Consol Pennsylvania Coal Company LLC
CEC Project 071-522

Stream Name	Stream Length (linear feet)			
	Perennial	Intermittent	Ephemeral	Total
32706E		629		629
32706E-1		548	162	710
32706E-2		58	45	103
32706E-3		248		248
32706E-4**			129	129
32706E-5**			124	124
32706F			50	50
32706G		365		365
32706H**			184	184
32706I**			198	198
32706J**			146	146
SUBTOTAL	**2,552**	**13,666**	**3,897**	**20,115**
Coarse Refuse Disposal Area #6 PTII				
UNT-OR (137 l.f. **)	2,880	731	222	3,833
UNT-OR A		44		44
UNT-OR B		64		64
UNT-OR C*		49		49
UNT-OR D		287	45	332
UNT-OR E		317		317
UNT-OR F**			154	154
UNT-OR G*			118	118
UNT-OR H*			154	154
UNT-OR I**			73	73
UNT-OR J		164		164
UNT-OR K			154	154
UNT-OR L**			31	31
UNT-OR M**			33	33
UNT-OR N		93		93
UNT-OR O*			59	59
UNT-OR P**			204	204
UNT-OR Q**			208	208
SUBTOTAL	**2,880**	**1,749**	**1,455**	**6,084**
Not Affected But Listed in 404 Application				
UNT3-OR A*			212	212
Total Stream Length	**8,625**	**17,332**	**6,506**	**32,463**
Isolated Stream Length	**0**	**1,372**	**1,809**	**3,181**
Non-Jurisdicitional (Post-Rapanos) Stream Length	**0**	**0**	**3,447**	**3,447**
Total Jurisdictional Stream Length	**8,625**	**15,960**	**1,250**	**25,835**

*As discussed during the field verification meeting with the USACE and DEP, it is CEC's professional opinion that these streams lack a hydrologic connection to jurisdictional waters and, thus, should not be considered jurisdictional by the USACE.

**As discussed during the field verification meeting with the USACE and DEP, it is CEC's professional opinion that these areas lack a significant nexus as specified under the Rapanos guidance and, thus, should not be considered jurisdictional by the USACE

TABLE 3-2
Wetland Impact Summary
Bailey Mine Coal Refuse Disposal Areas No. 5 and 6
Richhill Township, Greene County, Pennsylvania
Consol Pennsylvania Coal Company LLC
CEC Project 071-522

Wetland Name	Classification		Impacted Wetland Acreage
	Cowardin (NWI)	Brinson (HGM)	
Wetland 112A	PEM	HGR	0.007
Wetland 113	PEM	GWS	0.050
Wetland 114	PEM	HGR	0.023
Wetland 115	PEM	HGR	0.036
Wetland 116	PEM	HGR	0.027
Wetland 116A	PEM	HGR	0.036
Wetland 117	PEM	LGR	0.008
Wetland 118	PEM	LGR	0.100
Wetland 119	PEM	GWS	0.068
Wetland 120	PEM	HGR	0.008
Wetland 121	PEM	HGR	0.021
Wetland 122	PEM	HGR	0.014
Wetland 123	PEM	GWS	0.154
Wetland 123A*	PEM	GWS	0.001
Wetland 124*	PEM	GWS	0.003
Wetland 125	PEM	GWS	0.042
Wetland 126	PEM	GWS	0.019
Wetland 127	PEM	GWS	0.056
Wetland 128	PEM	GWS	0.104
Wetland 128A*	PEM	GWS	0.008
Wetland 129	PEM	GWS	0.644
Wetland 129A*	PEM	GWS	0.011
Wetland 129B*	PEM	GWS	0.023
Wetland 129C*	PEM	GWS	0.006
Wetland 130	PEM	LGR	0.029
		Total Wetland Acreage	**5.87**
		Isolated Wetland Acreage	**0.19**
		Total Jurisdictional Wetland Acreage	**5.68**

*As discussed during the field verification meeting with the USACE and DEP, it is CEC's professional opinion that these wetlands lack a hydrologic connection to jurisdictional waters and, thus, should not be considered jurisdictional by the USACE.

COWARDIN
PEM - Palustrine Emergent Wetland
PSS - Palustrine Scrub/Shrub Wetland
PFO - Palustrine Forested Wetland

BRINSON
GWS - Groundwater Slope Wetland
LGR - Low-Gradient Riparian Wetland (0.1-3% Slope)
HGR - High-Gradient Riparian Wetland (>3% Slope)

Haberman, Marcia H LRP

To: Isolated Waters; 'R3_WetlandsJD@epa.gov.'
Subject: LRP 2007-463 JD for Consol's Bailey 5 & 6 Refuse Disposal Areas

Attachments: LRP-2007-463BaileyCRDAjddatasheet.xls; 2007-463 32705 ephnonrpw.doc; 2007-463 32705RPW.doc; 2007-463 32706rpwandrpw tributarieswithwetlands.doc; 2007-463 isolated waters,wetlandsstreams,vernalpools.doc; 2007-463 tribsto32705.doc; 2007-463 tribsto32705Fsystem.doc; 2007-463 UNT32704rpwWITHtributarieANDwetlands.doc; 2007-463 UNT 0R-2rpwWITHabtwetland.doc; 2007-463 UNT 0RrpwWITHtributarieANDwetlands.doc; 2007-463jddescripiton.doc; 2007-463resourcemap.JPG; 2007-46332705CisolatedtreamFinal JD Form.docm

LRP-2007-463Bailey CRDAjddatash... 2007-463 32705 ephnonrpw.doc (... 2007-463 05RPW.doc (274 KB 2007-463 706rpwandrpw tribu 2007-463 isolated waters,wetla... 2007-463 bsto32705.doc (271 2007-463 bsto32705Fsystem.c

2007-463 32704rpwWITHtrib 2007-463 UNT 0R-2rpwWITHabtwet 2007-463 UNT 0RrpwWITHtributar.. 2007-463jddescripit on.doc (32 ... 2007-463resourcem ap.JPG (43 MB... 2007-46332705Ciso latedtreamFin...

This jurisdictional determination is for the Consol Coal of Pennsylvania Bailey Central Mine Complex Coal Refuse Disposal Area 5 and 6 Project. The 706 acre project site is located adjacent to the existing processing facility and disposal areas located in Richhill Township, Greene County, Pennsylvania. The site contains 2 primary stream systems and the headwaters of 2 adjacent stream systems containing 35,433 linear feet of stream channel, 6.76 acres of wetlands, 0.029 acres of vernal pools, and 0.06 acres of open water. The area identified as Disposal Area 5 contains a primary stream system identified as 32705, a 4th order stream that is 8,208 feet in length. It has 3 tributary stream systems containing 1, 2nd, and 3rd order streams and 13 1st and 2nd order tributaries. It also contains UNT-2 OR and portions, 220 feet, of the headwaters of stream system UNT-3-OR located in the Southeast portion of the site. Disposal Area 6 contains stream systems identified as UNT OR and the headwaters of stream system 3704 located in the Northwest portion of the site. The streams are tributary to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TNW, which flows to the Ohio River.

This office has determined that of the 35,433 feet of stream channel located within the project area 44 stream channels containing 27,569 feet are relatively permanent waters (RPW), or the headwater reaches of RPWs and are considered jurisdictional under Section 404 of the CWA. We have determined that 13 streams containing 3,181 feet of stream channel have no hydrologic connection to regulated waters of the United States and are therefore considered isolated. This includes 12 streams containing 1,959 feet that are ephemeral stream channel that are non-relatively permanent waters (NRPWs) and a 1,222 foot channel, 32705C that is a RPW. Thirty additional stream channels containing 4,683 feet have been determined to be ephemeral stream channel that are NRPWs. This office is not able to establish or document a significant nexus to the chemical, physical, or biological integrity of the closest TNW, Wheeling Creek located approximately 20 aerial miles and more than 25 river miles away, for the 7,864 feet of isolated and NRPW stream channels. Therefore, we have determined that they should not be considered jurisdictional and regulated under Section 404 of the CWA.

The project site contains 103 wetland areas containing 6.76 acres of wetlands, most of which are PEM. Of these 77 containing 5.674 areas are directly abutting stream channels and 9 containing 0.773 acres are located adjacent to stream channels and have a significant nexus. Therefore, we have determined that 6.447 acres of jurisdictional wetlands are located within the project area. Additionally 1 open water impoundment containing 0.06 acres is abutting a stream and is jurisdictional. The site contains 17 wetlands areas containing 0.313 acres and 3 vernal pools containing 0.029 acres that have no hydrologic connection to waters of the United States, and are therefore considered isolated. This office is not able to establish or document a significant nexus to the chemical, physical, or biological integrity of the closest TNW, Wheeling Creek located

approximately 20 aerial miles and more that 25 river miles away, for the 0.313 acres of wetland and 0.029 acres of vernal pools. Therefore, this office has determined that they should not be considered jurisdictional and regulated under Section 404 of the CWA.

I have attached not only the jurisdictional determination forms for the NRPWs and the isolated waters, but also for your reference the documents for the resources that are jurisdictional, the resource map, and the excel spreadsheet containing the source data.

Marcia H. Haberman
Southern Section, Regulatory Branch
Pittsburgh District, US Army Corps of Engineers
(412) 395-7361

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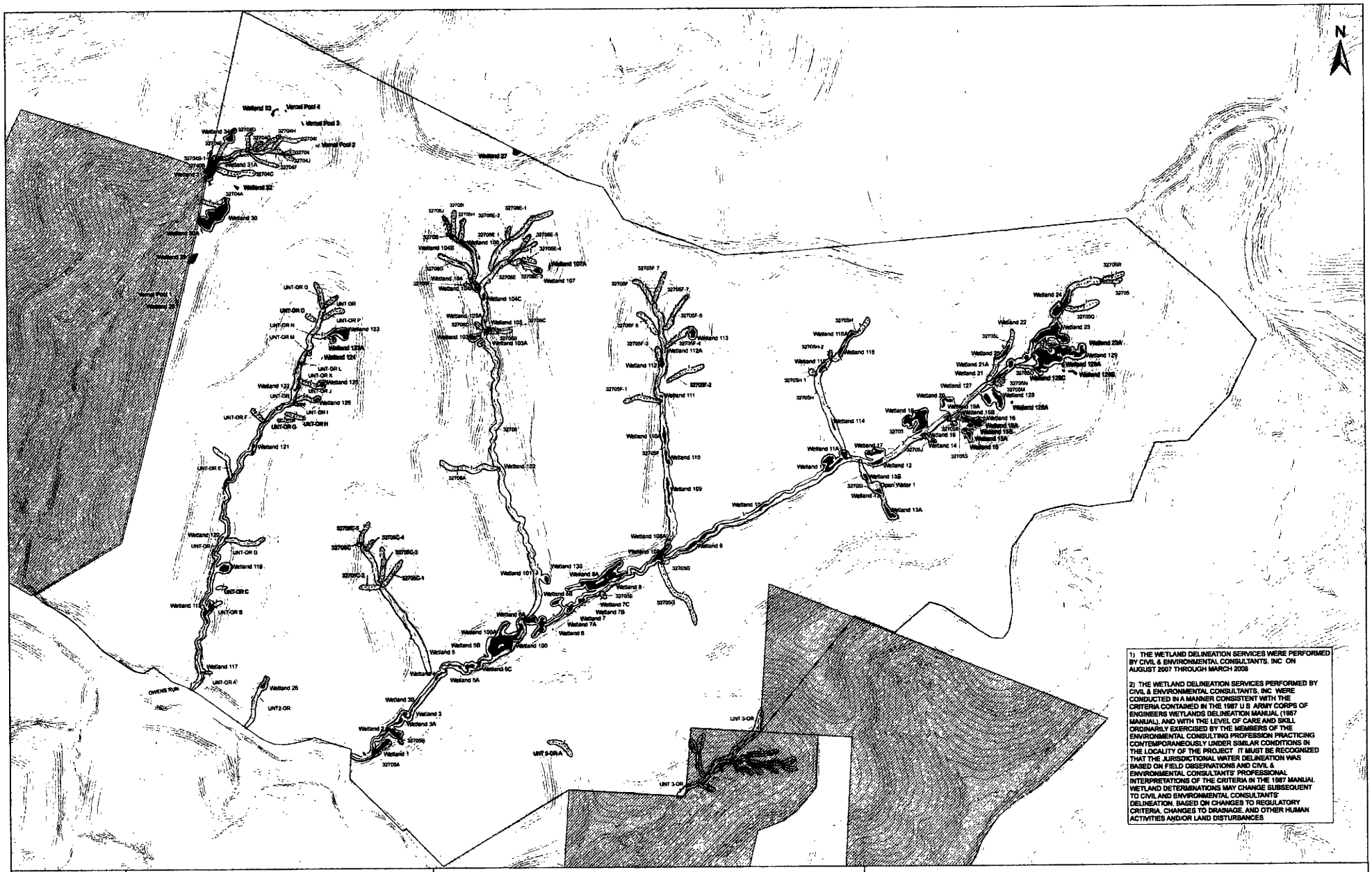

1) THE WETLAND DELINEATION SERVICES WERE PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC ON AUGUST 2007 THROUGH MARCH 2008

2) THE WETLAND DELINEATION SERVICES PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC WERE CONDUCTED IN A MANNER CONSISTENT WITH THE CRITERIA CONTAINED IN THE 1987 U S ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987 MANUAL), AND WITH THE LEVEL OF CARE AND SKILL ORDINARILY EXERCISED BY THE MEMBERS OF THE ENVIRONMENTAL CONSULTING PROFESSION PRACTICING CONTEMPORANEOUSLY UNDER SIMILAR CONDITIONS IN THE LOCALITY OF THE PROJECT IT MUST BE RECOGNIZED THAT THE JURISDICTIONAL WATER DELINEATION WAS BASED ON FIELD OBSERVATIONS AND CIVIL & ENVIRONMENTAL CONSULTANTS' PROFESSIONAL INTERPRETATIONS OF THE CRITERIA IN THE 1987 MANUAL WETLAND DETERMINATIONS MAY CHANGE SUBSEQUENT TO CIVIL AND ENVIRONMENTAL CONSULTANTS' DELINEATION, BASED ON CHANGES TO REGULATORY CRITERIA, CHANGES TO DRAINAGE, AND OTHER HUMAN ACTIVITIES AND/OR LAND DISTURBANCES

TOPOGRAPHIC CONTOURS PROVIDED BY CONSOL PENNSYLVANIA COAL COMPANY, LLC 2007

DWN BY CBL | CHK BY

1 inch equals 225 feet

DATE REVISED 9/4/2008

0 225 450 675 900 Feet

Legend

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Surface Water Connection
- Wetland
- Open Water
- Vernal Pool
- Off-Site Wetland
- No Access
- Project Boundary
- Hydrologically Isolated Resource

ISSUED FOR CONSOL ENERGY

ISSUED BY

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333 Baldwin Road
Pittsburgh, PA 15205-9702
1-800-365-2324
Columbus, OH * Cincinnati, OH * Indianapolis IN * Nashville, TN * Chicago, IL * St Louis, MO * Export, PA * Detrict, MI

WETLAND AND STREAM DELINEATION MAP
BAILEY COAL REFUSE DISPOSAL AREAS NO. 5 AND 6
CONSOL PENNSYLVANIA COAL COMPANY, LLC
GREENE COUNTY, PENNSYLVANIA

PROJECT NO.: 071-522.0001 | FIGURE: 4

J:\Projects\2007\071522\maps\final\071522_delineation_3_14_08.mxd

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ISSUED FOR CONSOL ENERGY

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WETLAND AND STREAM DELINEATION MAP
BAILEY COAL REFUSE DISPOSAL AREAS NO. 5 AND 6
CONSOL PENNSYLVANIA COAL COMPANY, LLC
GREENE COUNTY, PENNSYLVANIA

PROJECT NO.: 071-522.0001 FIGURE: 4

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Waters_Name	Cowadin_	HGM_Cc	Area (ac	Linear (f	Waters Ty	Latitude(dd nad8	Longitude dd na	Local_Waterway
EPHEMERAL STREAMS = NRPW								
32704, 1st Order	N/A	N/A	N/A	94	NRPW	39.96077	-80.42219	32704
32704C, 1st Order	N/A	N/A	N/A	301	NRPW	39.96039	-80.42405	32704
32704D, 1st Order	N/A	N/A	N/A	160	NRPW	39.96077	-80.42321	32704
32704G, 1st Order	N/A	N/A	N/A	119	NRPW	39.96079	-80.42301	32704
32704H, 1st Order	N/A	N/A	N/A	245	NRPW	39.96079	-80.42301	32704
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32705F-3, 1st Order	N/A	N/A	N/A	100	NRPW	39.95645	-80.41153	32705
32705F-5, 1st Order	N/A	N/A	N/A	156	NRPW	39.95709	-80.41153	32705
32705G, 1st Order	N/A	N/A	N/A	506	NRPW	39.95217	-80.41136	32705
32705H-1, 1st Order	N/A	N/A	N/A	53	NRPW	39.95626	-80.40713	32705
32705H-2, 1st Order	N/A	N/A	N/A	53	NRPW	39.95662	-80.40675	32705
32705Q, 1st Order	N/A	N/A	N/A	258	NRPW	39.95787	-80.40023	32705
32705R, 1st Order	N/A	N/A	N/A	176	NRPW	39.95845	-80.39919	32705
32706D, 1st Order	N/A	N/A	N/A	71	NRPW	39.95711	-80.41649	32706
32706E-4, 1st Order	N/A	N/A	N/A	129	NRPW	39.95859	-80.41551	32706
32706E-5, 1st Order	N/A	N/A	N/A	124	NRPW	39.95883	-80.41546	32706
32706F, 1st Order	N/A	N/A	N/A	50	NRPW	39.95802	-80.41684	32706
32706H, 1st Order	N/A	N/A	N/A	184	NRPW	39.95897	-80.41720	32706
32706I, 1st Order	N/A	N/A	N/A	198	NRPW	39.95907	-80.41740	32706
32706J, 1st Order	N/A	N/A	N/A	146	NRPW	39.95911	-80.41749	32706
UNT-OR, 1st Order	N/A	N/A	N/A	140	NRPW	39.95744	-80.42099	Owens Run
UNT-OR F, 1st Order	N/A	N/A	N/A	154	NRPW	39.95496	-80.42252	Owens Run
UNT-OR I, 1st Order	N/A	N/A	N/A	73	NRPW	39.95542	-80.42175	Owens Run
UNT-OR L, 1st Order	N/A	N/A	N/A	31	NRPW	39.95625	-80.42160	Owens Run
UNT-OR M, 1st Order	N/A	N/A	N/A	33	NRPW	39.95651	-80.42141	Owens Run
UNT-OR P, 1st Order	N/A	N/A	N/A	204	NRPW	39.95723	-80.42107	Owens Run
UNT-OR Q, 1st Order	N/A	N/A	N/A	208	NRPW	39.95744	-80.42099	Owens Run
UNT3-OR, 1st Order	N/A	N/A	N/A	168	NRPW	39.94588	-80.40859	Owens Run
TOTAL FEET				4683				

Waters_Name	Cowadin_Code	HGM_Code	Area (acres)	Linear (ft)	Waters Types	Latitude(dd nad83)	Longitude dd nad83)
ISOLATED WETLANDS							
Wetland 27	PEM	Slope	0.05	N/A	Isolate	39.96091	-80.41568
Wetland 29	PEM	Slope	0.077	N/A	Isolate	39.95846	-80.42464
Wetland 30A	PSS1	Slope	0.006	N/A	Isolate	39.95906	-80.42443
Wetland 32	PSS1	Slope	0.016	N/A	Isolate	39.96001	-80.42348
Wetland 33	PEM	Slope	0.025	N/A	Isolate	39.96168	-80.42247
Wetland 15	PEM	Slope	0.041	N/A	Isolate	39.95513	-80.40289
Wetland 15A	PEM	Slope	0.008	N/A	Isolate	39.95520	-80.40276
Wetland 15B	PEM	Slope	0.003	N/A	Isolate	39.95523	-80.40265
Wetland 16A	PEM	Slope	0.017	N/A	Isolate	39.95526	-80.40280
Wetland 128A	PEM	Slope	0.008	N/A	Isolate	39.95674	-80.40035
Wetland 129A	PEM	Slope	0.011	N/A	Isolate	39.95660	-80.40024
Wetland 129B	PEM	Slope	0.023	N/A	Isolate	39.95649	-80.39997
Wetland 129C	PEM	Slope	0.006	N/A	Isolate	39.95649	-80.40023
Wetland 23A	PEM	Slope	0.005	N/A	Isolate	39.95715	-80.40077
Wetland 107A	PEM	Slope	0.013	N/A	Isolate	39.95847	-80.41469
Wetland 123A	PEM	Slope	0.001	N/A	Isolate	39.95679	-80.42091
Wetland 124	PEM	Slope	0.003	N/A	Isolate	39.95638	-80.42098
			0.313				
ISOLATED STREAMS							
UNT OR-O 1st order				59	Isolated	39.95720	-80.42123
UNT3-OR A, 1st Order	N/A	N/A	N/A	212	Isolate	39.94823	-80.41437
32705F-2, 1st Order	N/A	N/A	N/A	324	Isolate	39.95605	-80.41132
32705K-1a,1st Order	N/A	N/A	N/A	101	Isolate	39.95515	-80.40300
UNT-OR C, 1st Order	N/A	N/A	N/A	49	Isolate	39.95138	-80.42372
UNT-OR G, 1st Order	N/A	N/A	N/A	118	Isolate	39.95502	-80.42213
UNT-OR H, 1st Order	N/A	N/A	N/A	154	Isolate	39.95515	-80.42194
total feet				1017			
Vernal Pool 2				0.016			
Vernal Pool 3				0.012			
Vernal Pool 4				0.001			
Total acreage				0.029			

Waters_Name	Cowadin_	HGM_Cc	Area (ac	Linear (f	Waters Ty	Latitude(dd nad8	Longitude dd nac	Local_Waterway
ISOLATED STREAM 32705C SYSTEM								
32705C	N/A	N/A	N/A	1,222	RPW	39.94968	-80.41779	32705
32705C-1, 1st Order	N/A	N/A	N/A	240	NRPW	39.95150	-80.41918	32705
32705C-2, 1st Order	N/A	N/A	N/A	132	NRPW	39.95150	-80.41920	32705
32705C-3, 1st Order	N/A	N/A	N/A	283	NRPW	39.95157	-80.41927	32705
32705C-4, 1st Order	N/A	N/A	N/A	105	NRPW	39.95223	-80.41965	32705
32705C-5, 1st Order	N/A	N/A	N/A	182	NRPW	39.95238	-80.41976	32705
TOTAL STREAM				2164				

Waters_Name	Cowadin_	HGM_Cc	Area (ac	Linear (f	Waters Ty	Latitude(dd nad8	Longitude dd na	Local_Waterway
unt 32705 STREAM SYSTEM - JD								
32705, 2ndn3rd,4thorde	N/A	N/A	N/A	8208	TNWRPW	39.95546	-80.40342	32705
TOTAL FEET				8208				
Wetland 24	PEM	Riverine	0.169	N/A	ABT	39.95788	-80.40033	32705
Wetland 23	PEM	Riverine	0.33	N/A	ABT	39.95732	-80.40065	32705
Wetland 22	PEM	Riverine	0.02	N/A	ABT	39.95676	-80.40128	32705
Wetland 21A	PEM	Riverine	0.028	N/A	ABT	39.95661	-80.40171	32705
Wetland 21	PEM	Riverine	0.056	N/A	ABT	39.95636	-80.40199	32705
Wetland 19A	PEM	Riverine	0.012	N/A	ABT	39.95546	-80.40345	32705
Wetland 12	PEM	Riverine	0.053	N/A	ABT	39.95442	-80.40543	32705
Wetland 11	PEM	Riverine	0.161	N/A	ABT	39.95430	-80.40664	32705
Wetland 11A	PEM	Riverine	0.057	N/A	ABT	39.95455	-80.40624	32705
Wetland 10	PEM	Riverine	0.033	N/A	ABT	39.95338	-80.40859	32705
Wetland 9	PEM	Riverine	0.122	N/A	ABT	39.95270	-80.41025	32705
Wetland 100A	PFO	Riverine	0.106	N/A	ABT	39.95048	-80.41585	32705
Wetland 7	PEM	Riverine	0.033	N/A	ABT	39.95113	-80.41387	32705
Wetland 7A	PEM	Riverine	0.006	N/A	ABT	39.95108	-80.41395	32705
Wetland 7B	PEM	Riverine	0.015	N/A	ABT	39.95128	-80.41360	32705
Wetland 7C	PEM	Riverine	0.009	N/A	ABT	39.95131	-80.41351	32705
Wetland 6	PEM	Riverine	0.099	N/A	ABT	39.95064	-80.41471	32705
Wetland 6A	PEM	Riverine	0.069	N/A	ABT	39.95084	-80.41500	32705
Wetland 100	PEM	Riverine	0.517	N/A	ABT	39.95035	-80.41567	32705
Wetland 5	PEM	Riverine	0.013	N/A	ABT	39.94984	-80.41714	32705
Wetland 5A	PEM	Riverine	0.011	N/A	ABT	39.94980	-80.41693	32705
Wetland 5B	PEM	Riverine	0.039	N/A	ABT	39.94983	-80.41664	32705
Wetland 5C	PEM	Riverine	0.034	N/A	ABT	39.94992	-80.41636	32705
Wetland 4	PEM	Riverine	0.028	N/A	ABT	39.94963	-80.41749	32705
Wetland 3	PEM	Riverine	0.041	N/A	ABT	39.94869	-80.41836	32705
Wetland 3A	PEM	Riverine	0.033	N/A	ABT	39.94857	-80.41861	32705
Wetland 3B	PEM	Riverine	0.009	N/A	ABT	39.94900	-80.41810	32705
Wetland 2	PEM	Riverine	0.109	N/A	ABT	39.94839	-80.41882	32705
Wetland 8A	PFO	Riverine	0.162	N/A	ABT	39.95167	-80.41344	32705
Wetland 108	PEM	Riverine	0.096	N/A	ABT	39.95227	-80.41137	32705
Wetland 8	PEM	Riverine	0.288	N/A	ABT	39.95172	-80.41288	32705
Wetland 8B	PEM	Riverine	0.029	N/A	ADJ	39.95124	-80.41426	32705

Wetland 17	PEM	Riverine	0.078	N/A	ADJ	39.95463	-80.40546	32705
Wetland 18	PEM	Slope	0.31	N/A	ADJ	39.95512	-80.40434	32705
Wetland 20	PEM	Slope	0.055	N/A	ADJ	39.95580	-80.40346	32705
Wetland 127	PEM	Slope	0.056	N/A	ADJ	39.95586	-80.40234	32705
Wetland 128	PEM	Slope	0.104	N/A	ADJ	39.95590	-80.40207	32705
Total acreage			3.39					

Waters_Name	Cowadin_	HGM_Cc	Area (ac	Linear (f	Waters Ty	Latitude(dd nad8	Longitude dd na	Local_Waterway	
UNT 32705F STREAM SYSTEM - JD									
32705F, 1st &2ndOrder	N/A	N/A	N/A	2437	TNWRPW	39.95773	-80.41173	32705	
32705F-7, 1st Order	N/A	N/A	N/A	253	TNWRPW	39.95773	-80.41173	32705	
32705F-4, 1st Order	N/A	N/A	N/A	287	RPW	39.95678	-80.41142	32705	
32705F-6, 1st Order	N/A	N/A	N/A	336	RPW	39.95719	-80.41149	32705	
TOTAL FEET				3313					
Wetland 112	PEM	Riverine	0.035	N/A	ABT	39.95646	-80.41148	32705	
Wetland 112A	PEM	Riverine	0.007	N/A	ABT	39.95673	-80.41139	32705	
Wetland 111	PEM	Riverine	0.007	N/A	ABT	39.95574	-80.41147	32705	
Wetland 110	PEM	Riverine	0.045	N/A	ABT	39.95434	-80.41125	32705	
Wetland 110A	PEM	Riverine	0.051	N/A	ABT	39.95490	-80.41136	32705	
Wetland 109	PEM	Riverine	0.066	N/A	ABT	39.95361	-80.41121	32705	
Wetland 108A	PEM	Riverine	0.008	N/A	ABT	39.95264	-80.41116	32705	
Wetland 113	PEM	Slope	0.05	N/A	ABT	39.95711	-80.41064	32705	32705f-4 org at WL 11:
TOTAL ACREAGE			0.269						

Waters_Name	Cowadin_	HGM_Cc	Area (ac	Linear (f	Waters Ty	Latitude(dd nad	Longitude dd na	Local_Waterway
STREAM SYSTEM 32706 WITH WETLANDS - JD								
32706, 1st,2nd,3rd Orde	N/A	N/A	N/A	3651	RPW	39.95082	-80.41513	32706
32706A, 1st Order	N/A	N/A	N/A	497	RPW	39.95412	-80.41599	32706
32706B, 1st Order	N/A	N/A	N/A	166	RPW	39.95702	-80.41637	32706
32706C, 1st Order	N/A	N/A	N/A	49	RPW	39.95708	-80.41626	32706
32706E,1st, 2nd, 3rd Or	N/A	N/A	N/A	629	RPW	39.95837	-80.41627	32706
32706E-1, 1st & 2nd Or	N/A	N/A	N/A	710	RPW	39.95837	-80.41627	32706
32706E-2, 1st Order	N/A	N/A	N/A	103	RPW	39.95901	-80.41585	32706
32706E-3, 1st & 2nd Or	N/A	N/A	N/A	248	RPW	39.95858	-80.41583	32706
32706G, 1st Order	N/A	N/A	N/A	365	RPW	39.95812	-80.41686	32706
TOTAL FEET				6418				
Wetland 106	PEM	Riverine	0.043	N/A	ABT	39.95888	-80.41703	32706
Wetland 104	PEM	Riverine	0.013	N/A	ABT	39.95815	-80.41684	32706
Wetland 104A	PEM	Riverine	0.043	N/A	ABT	39.95798	-80.41672	32706
Wetland 104B	PEM	Riverine	0.003	N/A	ABT	39.95828	-80.41677	32706
Wetland 104C	PEM	Riverine	0.025	N/A	ABT	39.95778	-80.41651	32706
Wetland 105	PEM	Riverine	0.035	N/A	ABT	39.95708	-80.41637	32706
Wetland 105A	PEM	Riverine	0.005	N/A	ABT	39.95725	-80.41647	32706
Wetland 102	PEM	Riverine	0.008	N/A	ABT	39.95408	-80.41596	32706
Wetland 101	PSS1	Riverine	0.007	N/A	ABT	39.95184	-80.41483	32706
Wetland 107	PEM	Slope	0.032		ABT	39.95838	-80.41504	NT32706E-3
Wetland 103	PEM	Slope	0.044	N/A	ADJ	39.95688	-80.41672	32706
Wetland 103A	PEM	Slope	0.013	N/A	ABT	39.95678	-80.41652	32706
Wetland 130	PEM	Riverine	0.029	N/A	ADJ	39.95173	-80.41456	32706
TOTAL ACREAGE			0.3					

TOTAL ACREAGE			3.39						
Waters_Name	Cowadin_	HGM_Co	Area (ac	Linear (f	Waters Ty	Latitude(dd nad8	Longitude dd na	Local_Waterway	
UNT 32705 TRIBUTARY'S - JD									
32705A, 1st Order	N/A	N/A	N/A	165	RPW	39.94789	-80.41932	32705	
32705B, 1st Order	N/A	N/A	N/A	43	RPW	39.94824	-80.41858	32705	FLOWS TO WL 2
32705E, 1st Order	N/A	N/A	N/A	66	RPW	39.95151	-80.41305	32705	
32705H, 1st & 2nd Orde	N/A	N/A	N/A	1263	TNWRPW	39.95662	-80.40675	32705	
32705I, 1st Order	N/A	N/A	N/A	265	RPW	39.95449	-80.40587	32705	
32705J, 1st Order	N/A	N/A	N/A	9	RPW	39.95500	-80.40404	32705	
32705K & (1b), 2nd Ord	N/A	N/A	N/A	77	RPW	39.95546	-80.40342	32705	
32705L, 1st Order	N/A	N/A	N/A	431	TNWRPW	39.95622	-80.40237	32705	
32705M, 1st Order	N/A	N/A	N/A	47	RPW	39.95622	-80.40213	32705	
32705N, 1st Order	N/A	N/A	N/A	47	RPW	39.95631	-80.40202	32705	
32705O, 1st Order	N/A	N/A	N/A	164	RPW	39.95659	-80.40162	32705	WL 129 FLOW TO
32705P, 1st Order	N/A	N/A	N/A	16	RPW	39.95685	-80.40113	32705	
32705S, 1st Order	N/A	N/A	N/A	40	RPW	39.95536	-80.40334	32705	
TOTAL FEET				2633					
Wetland 1	PEM	Riverine	0.132	N/A	ABT	39.94803	-80.41909	32705A	
Wetland 116	PEM	Riverine	0.027	N/A	ABT	39.95683	-80.40645	32705H	
Wetland 116A	PEM	Riverine	0.036	N/A	ABT	39.95715	-80.40622	32705H	
Wetland 115	PEM	Riverine	0.036	N/A	ABT	39.95646	-80.40694	32705H	
Wetland 114	PEM	Riverine	0.023	N/A	ABT	39.95520	-80.40663	32705H	
Wetland 13	PEM	Riverine	0.025	N/A	ABT	39.95381	-80.40534	32705I	
Wetland 13A	PEM	Slope	0.064	N/A	ABT	39.95331	-80.40499	32705I	
Wetland 13B	PEM	Riverine	0.024	N/A	ABT	39.95412	-80.40570	32705I	
Wetland 14	PEM	Slope	0.013	N/A	ABT	39.95492	-80.40384	32705J	
Wetland 19	PEM	Riverine	0.008	N/A	ABT	39.95503	-80.40410	32705J	
Wetland 25	PEM	Riverine	0.071	N/A	ABT	39.95679	-80.40197	32705L	
Wetland 129	PEM	Slope	0.644	N/A	ABT	39.95674	-80.40035	32705O	
Wetland 16	PEM	Slope	0.14	N/A	ABT	39.95536	-80.40274	32705S	
Wetland 16B	PEM	Slope	0.011	N/A	ABT	39.95544	-80.40316	32705S	
TOTAL ACREAGE			1.254						
OPEN WATER 1			0.06					32705I	
TOTAL OPEN WATER			0.06						

Waters_Name	Cowadin_	HGM_Cc	Area (ac	Linear (f	Waters Ty	Latitude(dd nad8	Longitude dd nac	Local_Waterway	
STREAM 32704 SYSTEM - JD									
32704 2nd & 3rd order	N/A	N/A	N/A	736	RPW	39.96021	-80.42421	32704	
32704A, 1st Order	N/A	N/A	N/A	151	RPW	39.95973	-80.42444	32704	
32704B, 1st Order	N/A	N/A	N/A	157	RPW	39.96021	-80.42421	32704	
32704B-1, 1st Order	N/A	N/A	N/A	52	RPW	39.96054	-80.42419	32704	
32704I, 1st Order	N/A	N/A	N/A	270	RPW	39.96082	-80.42249	32704	
32704E, 1st Order	N/A	N/A	N/A	154	RPW	39.96064	-80.42402	32704	orginates from WL 34 !
32704F, 1st Order	N/A	N/A	N/A	266	RPW	39.96077	-80.42315	32704	
TOTAL STREAM FEET				1786					
Wetland 31	PSS1	Riverine	0.221	N/A	ABT	39.96046	-80.42409	32704	
Wetland 31A	PEM	Riverine	0.024	N/A	ABT	39.96062	-80.42372	32704	
Wetland 30	PSS1	Slope	0.451	N/A	ABT	39.95936	-80.42411	32704	
Wetland 34	PSS1	Slope	0.07	N/A	ABT	39.96109	-80.42369	32704	
TOTAL ACREAGE			0.766						

Waters_Name	Cowadin_	HGM_Cc	Area (ac	Linear (f	Waters Ty	Latitude(dd nad	Longitude dd na	Local_Waterway
UNT-OR STREAM SYSTEM - JD								
UNT-OR, 2nd Order	N/A	N/A	N/A	3693	RPW	39.94919	-80.42442	Owens Run
UNT-OR A, 1st Order	N/A	N/A	N/A	44	RPW	39.94956	-80.42406	Owens Run
UNT-OR B, 1st Order	N/A	N/A	N/A	64	RPW	39.95100	-80.42388	Owens Run
UNT-OR D, 1st Order	N/A	N/A	N/A	332	RPW	39.95242	-80.42360	Owens Run
UNT-OR E, 1st Order	N/A	N/A	N/A	317	RPW	39.95370	-80.42349	Owens Run
UNT-OR J, 1st Order	N/A	N/A	N/A	164	RPW	39.95544	-80.42174	Owens Run orginates at WL126 mi
UNT-OR K, 1st Order	N/A	N/A	N/A	164	RPW	39.95591	-80.42165	Owens Run orginates at WL125 mi
UNT-OR N, 1st Order	N/A	N/A	N/A	93	RPW	39.95689	-80.42128	Owens Run orginates at WL123 mi
TOTAL FEET				4871				
Wetland 122	PEM	Riverine	0.014	N/A	ABT	39.95570	-80.42167	Owens Run
Wetland 121	PEM	Riverine	0.021	N/A	ABT	39.95433	-80.42285	Owens Run
Wetland 118	PEM	Riverine	0.100	N/A	ABT	39.95065	-80.42399	Owens Run
Wetland 117	PEM	Riverine	0.008	N/A	ABT	39.94955	-80.42412	Owens Run
Wetland 126	PEM	Slope	0.019	N/A	ABT	39.95547	-80.42112	Owens Run
Wetland 125	PEM	Slope	0.042	N/A	ABT	39.95581	-80.42099	Owens Run
Wetland 123	PEM	Slope	0.154	N/A	ABT	39.95695	-80.42057	Owens Run
Wetland 120	PEM	Riverine	0.008	N/A	ABT	39.95245	-80.42367	Owens Run
Wetland 119	PEM	Slope	0.068	N/A	ADJ	39.95181	-80.42359	Owens Run
TOTAL ACREAGE			0.434					

Waters_Name	Cowadin_	HGM_Co	Area (ac	Linear (f	Waters Ty	Latitude(dd nad8	Longitude dd na	Local_Waterway
UNT 2 STREAM - JD								
UNT2-OR, 1st Order	N/A	N/A	N/A	288	RPW	39.94839	-80.42290	Owens Run
TOTAL FEET				288				
Wetland 26	PEM	Riverine	0.034	N/A	RPWWD	39.94932	-80.42238	Owens Run
TOTAL FEET			0.034					

Waters_Name	Cowadin_	HGM_Co	Area (ac	Linear (f	Waters Ty	Latitude(dd nad8	Longitude dd na	Local_Waterway
UNT 3-OR STREAM JD								
UNT3-OR, 3rd Order	N/A	N/A	N/A	52	RPW	39.94718	-80.41067	Owens Run
TOTAL FEET				52				

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 13, 2009 UNT 32705 RPW UNT tributaries 32705A, 32705B, 32705E, 32705H, 32705I, 32705J, 32705K, 2705L, 32705M, 32705N 32705O, 32705P w/abutting wetlands

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.95464° N, Long. -80.40633° W.
Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 9 May 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: ~~2,593~~ 2633 linear feet: 2-3 width (ft) and/or acres.
   Wetlands: ~~1.353~~ 1.254 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: Owens Run 2,433**acres**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **4** tributaries before entering TNW.

   Project waters are **20-25** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **15-20** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: These 12 unnamed tributaries are 1st order streams tributary to RPW UNT 32705 which flows to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TWN which enters the Ohio River at RM 90.3.

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 1st.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: most of the streams appear to be natural located in natural drainage ways, however, some may have been relocated/created during historic land use activities.

Tributary properties with respect to top of bank (estimate):
Average width: 2-3 feet
Average depth: .5-1 feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: present.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: 6 of the streams have wetlands associated with them in addition to spring seeps and surface water runoff. During the site inspection the flow ranged from 1 gpm in UNT 32705B to an estimated 15 to 20 gpm in UNT 32805A. The consultant indicated that these stream have more than an ephemeral flow regime associated with them and in the absence of additional information, this office concurs.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: .

Subsurface flow: **Pick List.** Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☒ the presence of litter and debris
☐ changes in the character of soil	☒ destruction of terrestrial vegetation
☒ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☒ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☒ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: no observed pollutants, water clear.
Identify specific pollutants, if known: .

(iv) **Biological Characteristics. Channel supports (check all that apply):**

☒ Riparian corridor. Characteristics (type, average width): lower reach within forest, upper reach with pasture field.
☒ Wetland fringe. Characteristics: PEM.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings: Likely habitat for sensitive salamender and reptile .
☒ Aquatic/wildlife diversity. Explain findings: bethic survey identified between 2 to 7 taxa in the stream channels.

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:
Properties:
Wetland size:1.353acres
Wetland type. Explain:all PEM .
Wetland quality. Explain:appears good.
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **20-25** river miles from TNW.
Project waters are **15-20** aerial (straight) miles from TNW.
Flow is from: **Wetland to/from navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) **Chemical Characteristics:**
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: appear nondegraded.
Identify specific pollutants, if known: .

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

☒ Riparian buffer. Characteristics (type, average width):valley is undeveloped with forest and prior farmland use and logging.
☒ Vegetation type/percent cover. Explain:majority of adjacent buffer is open grassland with some forest.
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:wetland type support a wide variety of herps including aquatic and upland sensitive species.
☐ Aquatic/wildlife diversity. Explain findings: .

3. **Characteristics of all wetlands adjacent to the tributary (if any)**
All wetland(s) being considered in the cumulative analysis: **14**
Approximately (1.353) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

	Directly abuts? (Y/N)		Size (in acres)			Directly abuts? (Y/N)		Size (in acres)	
Wetland 115	ABT	PEM	0.036	32705 H	Wetland 114	ABT	PEM	0.023	32705 H
Wetland 116	ABT	PEM	0.027	32705 H	Wetland 1	ABt	PEM	0.132	32705A
Wetland 116A	ABT	PEM	0.036	32705 H	Wetland 19	ABT	PEM	0.008	32705J
Wetland 13	ABT	PEM	0.025	32705 I	Wetland 16	ABT	PEM	0.14	32705K
Wetland 13A	ABT	PEM	0.064	32705 I	Wetland 16B	ABT	PEM	0.011	32705K
Wetland 13B	ABT	PEM	0.024	32705 I					
Wetland 14	ABT	PEM	0.013	32705J					
Wetland 25	ADJ	PEM	0.071	32705 L					
Wetland 129	ABT	PEM	0.644	32705 O					

Summarize overall biological, chemical and physical functions being performed: serves to retain excess nutrients and sediments from the water column; absorb pollutants, and provide wildlife habitat, contribute to the downstream foodweb,.ground water retention, recharge. .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

☐ TNWs: linear feet width (ft), Or, acres.
☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: on the day of the field survey observed flow by consultant ranged from 15 - 20 gpm in 32705A, to 10-15 in 32705H, 7-10 in 32705J and L to 3-7 in 32705 I and K, to 2gpm in 32705O. Unt 32705 A, H, I, J, L, and O have wetlands associated with them which provides a groundwater connection that would allow for baseline flow recharge during dryer seasons. The benthic surveys found between 2 and 13 taxa in the streams, with 2 taxa in L and 12 in A. The life cycle of the benthics found indicates that moisture is needed for longer than on a seasonaly based. Based on Corps observations during site visit defined bed and banks and substrate indicate that the stream is a RPW with more than seasonal flow. Therefore, in the absense of additional information, the Corps has determined that these stream or more that seasonal RPWs.
☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: stream 32705E had a flow of 5-7 gpm during the consultants field survey, 32705 M flowed between 2-3 gpm and N had an estimated 1 gpm. The macroinvetebrate survey identified 2 taxa in M and 3 in E and N. The consultant indicated that based on their experience and observations the stream were intermittent and based on the physical structure of the stream during the Corps visit, it is most likely that they stream are RPWs but that they may only be seasonal RPWs. Therefore, in the absense of additional information, they will be regulated as seasonal RPWs.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **2,593** linear feet **2-3** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **Field surveys indicate the wetlands identified in the subject reaches have a direct hydrologic connection.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: **1.353**acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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[8]See Footnote # 3.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.**[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☒ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Aquatic Resource Delineation Report dated April 10, 2008 prepared by CEC Environmental Consultants.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

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[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

- ☒ Office concurs with data sheets/delineation report.
- ☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
- ☐ USGS NHD data.
- ☐ USGS 8 and 12 digit HUC maps.

☐ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☐ Aerial (Name & Date): .
or ☒ Other (Name & Date):supplied by CEC taked during Jan 2008 field surveys.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

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A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 13, 2009 32705 RPW w/abutting wetlands

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
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Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

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☒ Field Determination. Date(s): 9 May 2008

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A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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   - ☐ Wetlands adjacent to TNWs
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   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: ~~8,343~~ 8208 linear feet: 3-15 width (ft) and/or acres.
   Wetlands: ~~3.978~~ 3.39 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: Owens Run 2,433acres
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through 3 tributaries before entering TNW.

   Project waters are 20-25 river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are 15-20 aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: RPW UNT 32705 flows to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TWN which enters the Ohio River at RM 90.3.

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 4th.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☒ Natural
- ☐ Artificial (man-made). Explain: .
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 3-15 feet
Average depth: .5-1 feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
- ☒ Silts
- ☒ Sands
- ☐ Concrete
- ☒ Cobbles
- ☒ Gravel
- ☐ Muck
- ☒ Bedrock
- ☒ Vegetation. Type/% cover: 75% forestest in lower reach, 100% herb in upper reach
- ☒ Other. Explain: boulder .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: present.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: spring, seep, ground water, & surface run-off; surface water flows with ground water connection..
Other information on duration and volume: 1/9/08 estimated flow was 300 gpm at lower reach and 30-40 at upper reaches to < 1 gpm at headwaters.

Surface flow is: **Confined.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☒ Bed and banks
- ☒ OHWM[6] (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☒ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☒ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☒ the presence of litter and debris
  - ☒ destruction of terrestrial vegetation
  - ☒ the presence of wrack line
  - ☒ sediment sorting
  - ☒ scour
  - ☒ multiple observed or predicted flow events
  - ☒ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: no observed pollutants, water clear.
Identify specific pollutants, if known: .

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[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): lower reach within forest, upper reach with pasture field.
☒ Wetland fringe. Characteristics: PEM/PFO.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☒ Fish/spawn areas. Explain findings: fish observed in lower reaches.
☒ Other environmentally-sensitive species. Explain findings: Likely habitat for sensitive salamender and reptile .
☒ Aquatic/wildlife diversity. Explain findings: bethic survey identified 13 species.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:3.978acres
Wetland type. Explain:all PEM with exception of 2 areas that are PFO = .267 ac.
Wetland quality. Explain:appears good.
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: 6 wetland areas containing 0.632 acres are adjacent but not abutting. 4 are located within 50' floodplain and 2 are located upslope of the stream but have a hydrologic connection via roadside ditch.
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **20-25** river miles from TNW.
Project waters are **15-20** aerial (straight) miles from TNW.
Flow is from: **Wetland to/from navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: appear nondegraded.
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):valley is undeveloped, prior farmland use and logging.
☒ Vegetation type/percent cover. Explain:majority of adjacent buffer is forested with some open grassland.
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:wetland type support a wide variety of herps including aquatic and upland sensitive species.
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **30 (or more)**
Approximately (3.978) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

	Directly abuts? (Y/N)		Size (in acres)		Directly abuts? (Y/N)		Size (in acres)
Wetland 10	ABT	PEM	0.033	Wetland 22	ABT	PEM	0.02
Wetland 100	ABT	PEM	0.517	Wetland 23	ABT	PEM	0.33
Wetland 100A	ABT	PFO	0.106	Wetland 24	ABT	PEM	0.169
Wetland 108	ABT	PEM	0.096	Wetland 3	ABT	PEM	0.041
Wetland 11	ABT	PEM	0.161	Wetland 3A	ABT	PEM	0.033
Wetland 11A	ABT	PEM	0.057	Wetland 3B	ABT	PEM	0.009
Wetland 12	ABT	PEM	0.053	Wetland 4	ABT	PEM	0.028
Wetland 127	ADJ	PEM	0.056	Wetland 5	ABT	PEM	0.013
Wetland 128	ADJ	PEM	0.104	Wetland 5A	ABT	PEM	0.011
Wetland 9	ABT	PEM	0.122	Wetland 5B	ABT	PEM	0.039
Wetland 5C	ABT	PEM	0.034				
Wetland 6	ABT	PEM	0.099				
Wetland 17	ADJ	PEM	0.078	Wetland 6A	ABT	PEM	0.069
Wetland 18	ADJ	PEM	0.31	Wetland 7	ABT	PEM	0.033
Wetland 129	ABT	PEM	0.644	Wetland 7A	ABT	PEM	0.006
Wetland 19A	ABT	PEM	0.012	Wetland 7B	ABT	PEM	0.015
Wetland 2	ABT	PEM	0.109	Wetland 7C	ABT	PEM	0.009
Wetland 20	ADJ	PEM	0.055	Wetland 8	ABT	PEM	0.288
Wetland 21	ABT	PEM	0.056	Wetland 8A	ABT	PFO	0.162
Wetland 21A	ABT	PEM	0.028	Wetland 8B	ADJ	PEM	0.029

Summarize overall biological, chemical and physical functions being performed: serves to retain excess nutrients and sediments from the water column; absorb pollutants, and provide wildlife habitat, contribute to the downstream foodweb,.ground water retention, recharge. .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: 6wetland areas containing .632 acres of PEM wetlands do not have a direct hydrologic connection to the RPW but do have an indiscreet hydrologic connection to the RPW. WL 127 and 128 are slope wetlands located on a hillside on the far side of an unimproved roadway parelling the stream. Hydrology flowing from these wetland will drain to a roadside ditch that then flows to the stream providing an indirect connection to the RPW. Wetlands 8B, 18, 20 and 17 are not directly abutting to the RPW but are located within the floodplain and provide ground water recharge and floodwater retention during high water events.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: observed flow by consultant during stream asssement ranged from 300 gpm at lower reach to 30-40 gpm at upper reach, to <1 gpm at the headwaters of UNT 32705. Benthics ranged from none at the headwaters to 13 species at the lower reaches, which also contains fish. Based on Corps observations during site visit defined bed and banks and substrate indicate that the stream is a perenial RPW. Stream is a blue line on the USGS topo maps. 3.978 acres of adjacent wetlands assist in providing base flow during dry seasons.
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☒ Tributary waters: **8,343** linear feet width (ft).
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☐ Tributary waters: linear feet width (ft).
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **field surveys indicated that wetlands identified in seciton B have a direct hydrologic connection to the RWP.**

   ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: **3.346**acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

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[8]See Footnote # 3.

Provide acreage estimates for jurisdictional wetlands in the review area: **.632**acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.**[9]
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
   Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
   ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

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[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Aquatic Resource Delineation Report dated April 2008 pepared by CEC Environmental.
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☒ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☐ Aerial (Name & Date): .
  or ☒ Other (Name & Date):supplied by CEC taked during Jan 2008 field surveys.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 13, 2009 RPW 32705F, F4, F6, F7, and abutting wetlands.

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.95230° N, Long. -80.41143° W.
Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 9 May 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   4194 3313
   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: ~~3,317~~ linear feet: 2-4width (ft) and/or acres.
   Wetlands: ~~0.365~~ acres.
   .269 ✓ do moved NL-108
   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: Owens run 2,433acres
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through 5 tributaries before entering TNW.

   Project waters are 20-25 river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are 15-20 aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: The 3 UNTs to 32705F are 1st order streams tributary, containing 880', to UNT 32705F, 2,437', which is a tributary to UNT 32705 which flows to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TWN which enters the Ohio River at RM 90.3.
Tributary stream order, if known: 1st and 2nd.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 2-3 feet
Average depth: .5-1 feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☐ Concrete
☐ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: unt 32705F is a meandering stream with all present. 1st order tributaries are relatively straight.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: During the site inspection the flow ranged from 50 - 75 gpm in the lower reach of UNT 32705F and 40 gpm in the upper reach, however, it was after a heavy rain event. FLow in the 1st order tributaries ranged from 7 - 9 gpm in F4 and F6 to 1 gpm in F7.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: .

Subsurface flow: **Pick List.** Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank ☒ the presence of litter and debris
☐ changes in the character of soil ☒ destruction of terrestrial vegetation
☒ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☒ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☒ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: no observed pollutants, water clear.

Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): steep hills sides that are forested.
☒ Wetland fringe. Characteristics: PEM.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings: Likely habitat for sensitive salamender and reptile .
☒ Aquatic/wildlife diversity. Explain findings: bethic survey identified between 2 to 9 taxa in the stream channels.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.365acres
Wetland type. Explain:all PEM .
Wetland quality. Explain:appears good.
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **20-25** river miles from TNW.
Project waters are **15-20** aerial (straight) miles from TNW.
Flow is from: **Wetland to/from navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: appear nondegraded.
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):valley is undeveloped narrow.
☒ Vegetation type/percent cover. Explain:majority of adjacent buffer is forest.
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:wetland type support a wide variety of herps including aquatic and upland sensitive species.
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **9**
Approximately (0.365) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

	Directly abuts? (Y/N)		Size (in acres)		Directly abuts? (Y/N)	Size (in acres)
Wetland 108	ABT	PEM	0.023	32705 F		
Wetland 108A	ABT	PEM	0.008	32705F		
Wetland 109	ABT	PEM	0.066	32705 F		
Wetland 110	ABT	PEM	0.045	32705 F		
Wetland 110A	ABT	PEM	0.051	32705 F		
Wetland 111	ABT	PEM	0.007	32705F		
Wetland 112	ABT	PEM	0.035	32705 F		
Wetland 112A	ABT	PEM	0.007	32705F		
Wetland 113	ABT	PEM	0.050	32705 F-4		

total 0.365 acres

Summarize overall biological, chemical and physical functions being performed: serves to retain excess nutrients and sediments from the water column; absorb pollutants, and provide wildlife habitat, contribute to the downstream foodweb,.ground water retention, recharge. .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.

☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: on the day of the field survey observed flow by consultant ranged from 40-75 gpm in 32705F. The benthic surveys found between 6 and 9 taxa in the stream at 2 sample stations. 32705F-4 had 4 taxa associated and a wetland as the source hydrology. 32705F-6 had 4 taxa associated while F-7 had 2 in the lower reachwith 2 gpm and no benthics in the upper reaches where there was no flow. The life cycle of the benthics found indicates that moisture is needed for a significant portion of their life cycle. Based on Corps observations during site visit defined bed and banks and substrate indicate that the stream is a RPW with more than seasonal flow. In the absense of additional information, the Corps has determined that these streams are more that seasonal RPWs.

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

☒ Tributary waters: **3,317** linear feet **2-4** width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**

☒ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☒ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **physical observation identified wetlands located within the bed and banks of the stream channel, as the water source at the start of the channel or directly abutting.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: **0.365**acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

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[8] See Footnote # 3.

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wetland and stream delineation report dated April 10, 2008 prepared by CEC Environmental Consultants.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .

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[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

- ☐ USGS NHD data.
- ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☐ Aerial (Name & Date): .
  or ☒ Other (Name & Date):supplied by CEC taked during Jan 2008 field surveys.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 13, 2009 Isolated stream channels, wetlands, and vernal pools

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.95082° N, Long. -80.41513° W.
Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream Owens Run
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 9 May 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☒ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **This jurisdictional determination is for 7 unnamed tributaries containing 1,017 feet, 17 wetlands containing 0.313 acres, and 3 vernal pools containing 0.029 acres that are hydrologically isolated from jurisdictional waters of the United States and are not regulated under Section 404 of the Clean Water Act.**

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: **acres**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through **Pick List** tributaries before entering TNW.

   Project waters are **20-25** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **15-20** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: unnamed tributaries to RPW.
   Tributary stream order, if known: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: . feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: boulder .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank
☐ changes in the character of soil
☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☐ water staining
☐ other (list):
☐ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):

☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

---

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:a.

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **15-20** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

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[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☒ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:**These 7 unnamed tributaries containing 1,017 feet, 17 wetlands containing 0.313 acres, and 3 vernal pools containing 0.029 acres are hydrologically isolated from jurisdictional waters of the United States. Without a surface water connection to a stream hydrologicly connected to the TNW, Wheeling Creek, they are considered isolated and it is unlikely that their degradation or destructon could affect interstate commerce on the TNW. This office is not able to establish and document a significant nexus for this isolated feature to be considered jurisdictional under Section 404 of the Clean Water Act .**
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☒ Non-wetland waters (i.e., rivers, streams): **958**linear feet, **1-3**width (ft).
☐ Lakes/ponds: acres.
☒ Other non-wetland waters: 0.05acres. List type of aquatic resource: vernal pools.
☒ Wetlands: 0.313acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Aquatic resource report dated April 2008 prepared by CEC Environmental.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☐ Aerial (Name & Date): .
or ☒ Other (Name & Date):supplied by CEC taked during Jan 2008 field surveys.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE: Following is a list of the wetlands, vernal pools and stream channels that this office has determined are hydrologically isolated from jursidicitonal waters of the United States and are not regulated under Section 404 of the Clean Water Act. This office could not establish nor document that the use, degradation or destruction of these resource could affect interstate commerce or have a significiant impact on the nearest TNW, the Wheeling Creek, located approximately 20 aerial miles, and 25 river miles away.

Wetland 27	PEM	Slope	0.05	Isolate	39.96091 -80.41568
Wetland 29	PEM	Slope	0.077	Isolate	39.95846 -80.42464
Wetland 30A	PSS1	Slope	0.006	Isolate	39.95906 -80.42443
Wetland 32	PSS1	Slope	0.016	Isolate	39.96001 -80.42348
Wetland 33	PEM	Slope	0.025	Isolate	39.96168 -80.42247
Wetland 15	PEM	Slope	0.041	Isolate	39.95513 -80.40289
Wetland 15A	PEM	Slope	0.008	Isolate	39.95520 -80.40276
Wetland 15B	PEM	Slope	0.003	Isolate	39.95523 -80.40265
Wetland 16A	PEM	Slope	0.017	Isolate	39.95526 -80.40280
Wetland 128A	PEM	Slope	0.008	Isolate	39.95674 -80.40035
Wetland 129A	PEM	Slope	0.011	Isolate	39.95660 -80.40024
Wetland 129B	PEM	Slope	0.023	Isolate	39.95649 -80.39997
Wetland 129C	PEM	Slope	0.006	Isolate	39.95649 -80.40023
Wetland 23A	PEM	Slope	0.005	Isolate	39.95715 -80.40077
Wetland 107A	PEM	Slope	0.013	Isolate	39.95847 -80.41469
Wetland 123A	PEM	Slope	0.001	Isolate	39.95679 -80.42091
Wetland 124	PEM	Slope	0.003	Isolate	39.95638 -80.42098
Total:			0.313		

UNT OR-O, 1st order	59	39.95720-80.42123	no benthics	defined B&B ends approximatley 40' from UNT-OR
UNT3-OR A, 1st Order	212	39.94823 -80.41437	"	channel in upland pasture
32705F-2, 1st Order	324	39.95605 -80.41132	"	defined B&B ends approximatley 60' from 32705F
32705K-1a, 1st Order	101	39.95515 -80.40300	"	channel associated with isolated wetland 15
UNT-OR C, 1st Order	49	39.95138 -80.42372	2 taxa	defined B&B ends approximatley 50' from UNT-OR
UNT-OR G, 1st Order	118	39.95502 -80.42213	no benthics	defined B&B ends approximatley 60' from UNT-OR
UNT-OR H, 1st Order	154	39.95515 -80.42194	no benthics	defined B&B ends approximatley 30' from UNT-OR
Total	1,017			

Vernal Pool 2	0.016
Vernal Pool 3	0.012
Vernal Pool 4	0.001
Total	0.029

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 13, 2009 Non RPWs

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.95464° N, Long. -80.40633° W.
Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 9 May 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☒ Non-RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **This jurisdictional determination is for 27 ephemeral stream channels containing 4,251 feet that are tributaries to RPWs that are non-rpw's for which a significant nexus can not be established nor documented by this office. None of these stream had benthics and all lacked flow during the consultant's field surveys when other streams**

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

within the survey area had flow. Many of them were inspected by this office, and we concur that they are non-RPWs that are not likely to have a significant impact on the nearest TNW, Wheeling Creek, located approximatley 25 river miles downstream and therefore, should not be regulated under Section 404 of the Clean Water Act..

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: 2,433**acres**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **6** tributaries before entering TNW.

   Project waters are **20-25** river miles from TNW.
   Project waters are **1 (or less)** river miles from RPW.
   Project waters are **15-20** aerial (straight) miles from TNW.
   Project waters are **1 (or less)** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: 1st order tributaries that flow thru 3 or 4 stream channels prior to flowing to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TWN which enters the Ohio River at RM 90.3.

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 1 .

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: some may have been relocated during past land use activities.

Tributary properties with respect to top of bank (estimate):
Average width: 1-2 feet
Average depth: . feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: boulder .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: .

Subsurface flow: **Pick List.** Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

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[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☒ Riparian corridor. Characteristics (type, average width): most in steep forest setting, a few in open pasture/old field.
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:a.

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain:PEM.
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:This jurisdictional determination is for 27 ephemeral stream channels containing 4,251 feet that are tributaries to RPWs that are non-rpw's for which a significant nexus can not be established nor documented by this office. None of these stream had benthics and all lacked flow during the consultant's field surveys when other streams within the survey area had flow. Many of them were inspected by this office, and we concur that they are non-RPWs that are not likely to have a significant impact on the nearest TNW, Wheeling Creek, located approximatley 25 river miles downstream and therefore, should not be regulated under Section 404 of the Clean Water Act.

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. **Data supporting this conclusion is provided at Section III.C.**

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **f.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☒ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:**This jurisdictional determination is for 27 ephemeral stream channels containing 4,251 feet that are tributaries to RPWs that are non-rpw's for which a significant nexus can not be established nor documented by this office. None of these stream had benthics and all lacked flow during the consultant's field surveys when other streams within the survey area had flow. We have determined that due to their ephemeral flow nature and distance to the TNW, 25 river miles downstream, they are not likely to have a significant impact on the TNW, Wheeling Creek. Therefore, they are not jurisdicitonal waters of the United States and should not be regulated under Section 404 of the Clean Water Act..**
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☒ Non-wetland waters (i.e., rivers, streams): **4,248**linear feet, **1-2**width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Aquatic Resoruce Report dated April 2008 prepared by CEC Environmental Consultants.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☐ Aerial (Name & Date): .
or ☒ Other (Name & Date):supplied by CEC taked during Jan 2008 field surveys.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE: Following is the list of non-RPW streams and their location that this office has determined are not jurisdicitonal under the Section 404 of the Clean Water Act.

Stream Name	feet				Receiving Stream
32704C, 1st Order	301	NRPW	39.96039	-80.42405	32704
32704D, 1st Order	160	NRPW	39.96077	-80.42321	32704
32704G, 1st Order	119	NRPW	39.96079	-80.42301	32704
32704H, 1st Order	245	NRPW	39.96079	-80.42301	32704
32704J, 1st Order	102	NRPW	39.96077	-80.42219	32704
32705, 1st order	135	NRPW	39.95845	-80.39919	32705
32705F-1, 1st Order	312	NRPW	39.95563	-80.41144	32705
32705F-3, 1st Order	100	NRPW	39.95645	-80.41153	32705
32705F-5, 1st Order	156	NRPW	39.95709	-80.41153	32705
32705G, 1st Order	506	NRPW	39.95217	-80.41136	32705
32705H-1, 1st Order	53	NRPW	39.95626	-80.40713	32705
32705H-2, 1st Order	53	NRPW	39.95662	-80.40675	32705
32705Q, 1st Order	258	NRPW	39.95787	-80.40023	32705
32705R, 1st Order	176	NRPW	39.95845	-80.39919	32705
32706D, 1st Order	71	NRPW	39.95711	-80.41649	32706
32706E-4, 1st Order	129	NRPW	39.95859	-80.41551	32706
32706E-5, 1st Orde	124	NRPW	39.95883	-80.41546	32706
32706F, 1st Order	50	NRPW	39.95802	-80.41684	32706
32706H, 1st Order	184	NRPW	39.95897	-80.41720	32706
32706I, 1st Order	198	NRPW	39.95907	-80.41740	32706
32706J, 1st Order	146	NRPW	39.95911	-80.41749	32706
UNT-OR F, 1st Order	154	NRPW	39.95496	-80.42252	Owens Run
UNT-OR I, 1st Order	73	NRPW	39.95542	-80.42175	Owens Run
UNT-OR L, 1st Order	31	NRPW	39.95625	-80.42160	Owens Run
UNT-OR P, 1st Order	204	NRPW	39.95723	-80.42107	Owens Run
UNT-OR Q, 1st Order	208	NRPW	39.95744	-80.42099	Owens Run
UNT-OR-M	33	NRPW			Owens Run
Total Feet	4, 251				

UNT OR-1st order 140 39.95744 -80.42099 Owens Run
UNT 3-OR 1st order 168

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 19, 2007. This form is for unnamed tributary 32705C, an RPW with 5 non-RWP tributaries that are isolated and non-jurisdicitonal under CWA. MHHaberman.

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:LRP 2007-463 Consol's Bailey Coal Refuse Disposal Areas No. 5 & 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.94968° N, Long. -80.41779° W.
Universal Transverse Mercator:
Name of nearest waterbody: Owens Run
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☒ Field Determination. Date(s): May 9, 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☒ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Not Applicable.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **UNT 32705C is a RPW based on benthics, channel development and observed flow that has a defined channel for 1,222 feet and a drainage area of 31 acres. The defined bed & banks of the channel ends approximately 164 feet upslope from the next receiving stream, UNT 32705, in an upland meadow. Indications of surface flow continue for**

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

approximately 100 feet downstreamof the defined B&B of the stream channel but end 64 feet upslope of the closest receiving stream, UNT 32705 in an upland area. Five ephemeral 1st order streams, containing 942 feet, flow to UNT 32705C. This office is not able to establish or document a significant nexus for jurisdiction under the Clean Water Act for the non-RPWs or the isolated stream channel to Wheeling Creek, the closes TNW located approximatley 25 areial miles away.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **acres**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☐ Artificial (man-made). Explain: .
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
- ☐ Silts
- ☐ Sands
- ☐ Concrete
- ☐ Cobbles
- ☐ Gravel
- ☐ Muck
- ☐ Bedrock
- ☐ Vegetation. Type/% cover:
- ☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List.** Explain findings: .
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):
  - ☐ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

---

[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: wetland located within 1 year high water event floodplain.

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width):wetland located within floodplain with adjacent forested riparian coordior.
- ☐ Vegetation type/percent cover. Explain:wetland .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   - ☒ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   - ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   - ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   - ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☒ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:**UNT 32705C is a RPW based on benthics, channel development and observed flow that has a defined channel for 1,222 feet and a drainage area of 31 acres. The defined bed & banks of the channel ends approximately 164 feet upslope from the next receiving stream, UNT 32705, in an upland meadow. Indications of surface flow are observeable for approximately 100 feet downstream of the defined B&B of the stream channel but end 64 feet upslope of the closest receiving stream, UNT 32705 in an upland area. The 5 1st order channels that are tributary to UNT 32705C, 32705C-1,-2,-3,-4, and -5 containing 942 feet, did not have flow on the day of the site investigation even though it was raining intermittently during the day and other streams within the project area were flowing, and none of these stream contained macroinvertabrates. Therefore, this office has determined that they are non-RPW and we are not able to establish nor document a significant nexus to regulate them under the CWA. A benthic survey of UNT 32705C identified 10 taxa with both single and multi year life cycles within the channel which had a flow between 20-30 gpm on the day of the survey, 1/9/08 indicating that it is a RPW. However, without a surface water connection to a stream hydrologicly connected to the TNW, Wheeling Creek, it is considered isolated and it is unlikely that the degradation or destructon could affect interstate commerce on the TNW. This office is not able to establish and document a significant nexus for this isolated feature to be considered jurisdictional under Section 404 of the Clean Water Act .**
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☒ Non-wetland waters (i.e., rivers, streams): **2,164**linear feet, **2-7**width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Aquatic Resource Report dated April 8, 2008 pepared by CEC Environmental Consultants.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2000'.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .

- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☐ Aerial (Name & Date): .
  or ☒ Other (Name & Date):photo's CEC dated January 9, 2008.
- ☒ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 23, 2009 RPW UNT 32704 with tributaries 32704A, 32704B, 32704B, 32704E, 32704F, 32704I and abutting wetlands

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.94919° N, Long. -80.42442° W.
Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream Owens Run
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 9 May 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: ~~1,880~~ 1786 linear feet: 1-6width (ft) and/or acres.
   Wetlands: 0.766 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: Owens Run 2,433acres
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through 4 tributaries before entering TNW.

   Project waters are **20-25** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **15-20** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: UNT 32704, 830', and the 6 tributareis, 1,050', flow to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TWN which enters the Ohio River at RM 90.3 .

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: 1st and 2nd.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☒ Natural
- ☐ Artificial (man-made). Explain: .
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: 1-6 feet
Average depth: .1-.5 feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
- ☒ Silts
- ☒ Sands
- ☐ Concrete
- ☒ Cobbles
- ☒ Gravel
- ☐ Muck
- ☐ Bedrock
- ☐ Vegetation. Type/% cover:
- ☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: present.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: spring, seep, ground water, & surface run-off; connection..
Other information on duration and volume: 3/1/2008 estimated flow ranged from 30-45 gpm in 32704 and ranged between from 25-30 in 32704A to between 1 - 10 in 1st order tributaries.

Surface flow is: **Confined.** Characteristics: .

Subsurface flow: **Pick List.** Explain findings: .
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☒ Bed and banks
- ☒ OHWM[6] (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☒ multiple observed or predicted flow events
  - ☐ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: no observed pollutants, water clear.
Identify specific pollutants, if known: .

---

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): forested.
☒ Wetland fringe. Characteristics: PEM/PSS.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: s.
☒ Other environmentally-sensitive species. Explain findings: Likely habitat for sensitive salamender and reptile .
☒ Aquatic/wildlife diversity. Explain findings: benthic survey identified between19 taxa in UNT 32704, 10 in 32704A and 1st order tribs ranged between 2 and 10 taxa in the other tributaries.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0.7665acres
Wetland type. Explain:all PEM/PSS .
Wetland quality. Explain:appears good.
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: .
☒ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **20-25** river miles from TNW.
Project waters are **15-20** aerial (straight) miles from TNW.
Flow is from: **Wetland to/from navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: appear nondegraded.
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):forested.
☒ Vegetation type/percent cover. Explain: forest/shrubs.
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:wetland type support a wide variety of herps including aquatic and upland sensitive species.
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **4**
Approximately (0.766) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

	Directly abuts? (Y/N)	Size (in acres)		Directly abuts? (Y/N)	Size (in acres)
	Wetland 30	ABT	0.451	UNT 32704A	
Wetland 31	ADJ	0.221	UNT 32704 & B		
Wetland 31A	ABT	0.024	UNT OR		
Wetland 34	ABT	0.070	UNT 32704E		
Total		0.766			

Summarize overall biological, chemical and physical functions being performed: serves to retain excess nutrients and sediments from the water column; absorb pollutants, and provide wildlife habitat, contribute to the downstream foodweb,.ground water retention, recharge.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: observed flow by consultant during stream asssement on 3/1/2008 estimated flow ranged from 30-45

gpm in 32704 and ranged between from 25-30 in 32704A to between 1 - 10 in 1st order tributaries. The life cycle of the benthics found indicates that moisture is needed for a significant portion of their life cycle. Based on Corps observations during site visit defined bed and banks and substrate indicate that the streams are RPW with more than seasonal flow. The 0.766 acres of abutting wetlands assist in providing base flow during dry seasons.

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

☒ Tributary waters: **1,880** linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**

☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **field surveys indicated that all wetlands identified in seciton Bhave a direct hydrologic connection to the RWP.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: **0.766**acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.068**acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

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[8]See Footnote # 3.

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):**[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. **NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. **SUPPORTING DATA. Data reviewed for JD (check all that apply** - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Aquatic resource delineation report dated April 10, 2008 prepared by CEC Environmental Consultants.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .

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[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☐ Aerial (Name & Date):
  or ☒ Other (Name & Date):supplied by CEC taked during Jan 2008 field surveys.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 22, 2009 RPW UNT OR-2 w/abutting wetlands

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.94839° N, Long. -80.42290° W.
Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream Owens Run
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 9 May 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 288linear feet: 2width (ft) and/or acres.
   Wetlands: 0.034 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: 2,433**acres**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** tributaries before entering TNW.

   Project waters are **20-25** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **15-20** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   [redacted] to TNW[5]: UNT OR-2, 288, is a 1st order RPW that flows directly to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TWN which enters the Ohio River at RM 90.3. .

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

[redacted]

Tributary stream order, if known: 1st.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☒ Natural
- ☐ Artificial (man-made). Explain: .
- ☐ Manipulated (man-altered). Explain: may have been relocated during past land use activities.

Tributary properties with respect to top of bank (estimate):
Average width: 2 feet
Average depth: .2 feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: present.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: spring, seep, ground water, & surface run-off.
Other information on duration and volume: 1/15/08 estimated flow was 5-10 gpm.

Surface flow is: **Confined.** Characteristics: .

Subsurface flow: **Pick List.** Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: no observed pollutants, water clear.
Identify specific pollutants, if known: .

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[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): forested.
☒ Wetland fringe. Characteristics: PEM.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings: Likely habitat for sensitive salamender and reptile .
☒ Aquatic/wildlife diversity. Explain findings: bethic survey identified 2 taxa.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.034acres
Wetland type. Explain:all PEM .
Wetland quality. Explain:appears good.
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **20-25** river miles from TNW.
Project waters are **15-20** aerial (straight) miles from TNW.
Flow is from: **Wetland to/from navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: appear nondegraded.
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):valley is undeveloped forest ravine.
☒ Vegetation type/percent cover. Explain: forested.
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:wetland type support a wide variety of herps including aquatic and upland sensitive species.
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **1**
Approximately (0.034) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland 26 ABT	0.034	UNT OR-2	

Summarize overall biological, chemical and physical functions being performed: serves to retain excess nutrients and sediments from the water column; absorb pollutants, and provide wildlife habitat, contribute to the downstream foodweb,.ground water retention, recharge.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: wetland 119 is located within the floodplain of UNT or in depressional area and is not abutting but is an adjacent wetland would serve to retain floodwaters to maintain low flow stream recharge in addition to providing habitat.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: observed flow by consultant during stream asssement on 1/15/08 rangedbetween 5 - 10 gpm. The stream orginates at a small wetland and 2 taxa were identified including gastropoda which indicates that the stream has water

for a significant portion of the year. Therefore, with the direct ground water connection it is most likely that the stream is more than a seasonal steam.

☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

☒ **Tributary waters: 288 linear feet 2 width (ft).**

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**

☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).

☐ Other non-wetland waters: acres.

Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **0.034 acre wetland 26 is the ground water source of hydrology for stream and the stream channel begins at the wetland therefore it is abuting.**

☒ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: **0.034**acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or

☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

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[8]See Footnote # 3.

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Aquatic resource delineation report dated April 10, 2008 prepared by CEC Environmental Consultants.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

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[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

- ☒ Photographs: ☐ Aerial (Name & Date): .
  or ☒ Other (Name & Date):supplied by CEC taked during Jan 2008 field surveys.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 13, 2009 RPW unt tributary 32706, 32706A, 32706B, 32706C, 32706E, 32706E-1, 32706E-2, 32706E-3, 32706G, w/abutting and adjacent wetlands

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.95082° N, Long. -80.41513° W.
Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 9 May 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 6,418linear feet: 2 - 7width (ft) and/or acres.
   Wetlands: 0.30 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: Owens Run 2,433 **acres**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **3** tributaries before entering TNW.

Project waters are **20-25** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **15-20** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: UNT 32706 is a 4th order RPW that flows to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TWN which enters the Ohio River at RM 90.3. The 8 1st, 2nd, and 3rd order streams are tributaries to 32706 and are at a minimum seasonal RPWs.
Tributary stream order, if known: 1st, 2nd, 3rd, 4th.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: may have been relocated during past land use activities.

Tributary properties with respect to top of bank (estimate):
Average width: 2-7 feet
Average depth: .5-1 feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☒ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: present.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: spring, seep, ground water, & surface run-off; connection..
Other information on duration and volume: 1/11/08 estimated flow was 30 to 40 gpm at lower reach of 32706 to 90-100 gpm in the upper reach, 1 - 5 gpm in the other RPW tribs to 50-60 gpm in 32706E system.

Surface flow is: **Confined.** Characteristics: .

Subsurface flow: **Pick List.** Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank ☒ the presence of litter and debris
☐ changes in the character of soil ☒ destruction of terrestrial vegetation
☒ shelving ☒ the presence of wrack line
☐ vegetation matted down, bent, or absent ☒ sediment sorting
☐ leaf litter disturbed or washed away ☒ scour
☒ sediment deposition ☒ multiple observed or predicted flow events
☐ water staining ☒ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:

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[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: no observed pollutants, water clear.
Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): forested.
☒ Wetland fringe. Characteristics: PEM/PSS.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: s.
☒ Other environmentally-sensitive species. Explain findings: Likely habitat for sensitive salamender and reptile .
☒ Aquatic/wildlife diversity. Explain findings: bethic survey identified between 2-3 in the 1st and 2nd order tribs and up to 8 species in the main channels.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.30acres
Wetland type. Explain:all PEM/PSS .
Wetland quality. Explain:appers good.
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **20-25** river miles from TNW.
Project waters are **15-20** aerial (straight) miles from TNW.
Flow is from: **Wetland to/from navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: appear nondegraded.
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):valley is undeveloped steep forest.
☒ Vegetation type/percent cover. Explain: forested.
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:wetland type support a wide variety of herps including aquatic and upland sensitive species.
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **13**
Approximately (0.30) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

	Directly abuts? (Y/N)	Size (in acres)		Directly abuts? (Y/N)	Size (in acres)
Wetland 101	ABT	0.007	32706		
Wetland 102	ABT	0.008	32706		
Wetland 103	ADJ	0.044	32706		
Wetland 103A	ABT	0.013	32706		
Wetland 104	ABT	0.013	32706		
Wetland 104A	ABT	0.043	32706		
Wetland 104B	ABT	0.003	32706		
Wetland 104C	ABT	0.025	32706		
Wetland 105	ABT	0.035	32706		
Wetland 105A	ABT	0.005	32706		
Wetland 106	ABT	0.043	32706		
Wetland 130	ADJ	0.029	32706		
Wetland 107	ABT	0.032	32706 E-3		

Summarize overall biological, chemical and physical functions being performed: serves to retain excess nutrients and sediments from the water column; absorb pollutants, and provide wildlife habitat, contribute to the downstream foodweb,.ground water retention, recharge.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: Wetlands 103 and 130, containing 0.042 acres, are located within the floodplain of UNT 32706 in depressional areas and are not abutting but as adjacent wetlands would serve to retain floodwaters to maintain low flow stream recharge in addition to providing habitat..

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: observed flow by consultant during stream asssement rangedflow was 30 to 40 gpm at lower reach of 32706 to 90-100 gpm in the upper reach, 1 - 5 gpm in the other 7 1st and 2nd order RPW tribs to 50-60 gpm in in 3rd order UNT 32706E system. Benthics ranged from2 -3 in the headwaters 1st and 2nd order streams to 8 in the primary channels. The life cycle of the benthics found indicates that moisture is needed for a significant portion of their life cycle. Based on Corps observations during site visit defined bed and banks and substrate indicate that the streams are RPW with more than seasonal flow. Stream is identified the USGS topo maps. 0.30 acres of abutting wetlands assist in providing base flow during dry seasons.
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☒ Tributary waters: **6,418** linear feet width (ft).
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   ☐ Tributary waters: linear feet width (ft).
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
   ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **field surveys indicated that wetlands identified in seciton B have a direct hydrologic connection to the RWP.**

   ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: **0.258**acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   ☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: **0.042**acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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[8]See Footnote # 3.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.**[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Aquatic resource delineation report dated April 10, 2008 prepared by CEC Environmental Consultants.

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[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☒ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☐ Aerial (Name & Date): .
  or ☒ Other (Name & Date):supplied by CEC taked during Jan 2008 field surveys.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): October 19, 2009 RPW UNT OR, -A, -B, -D, -E, -J, -K, AND -N, w/abutting and adjacent wetlands

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:2007-463 Consol's Bailey Coal Refuse Dispsal areas No. 5 and 6

C. PROJECT LOCATION AND BACKGROUND INFORMATION: MUST COMPLETE ALL OF SECTION
State:PA County/parish/borough: Greene City:
Center coordinates of site (lat/long in degree decimal format): Lat. 39.94919° N, Long. -80.42442° W.
Universal Transverse Mercator:
Name of nearest waterbody: closest regulated stream Owens Run
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Wheeling Creek, a tributary to the Ohio River
Name of watershed or Hydrologic Unit Code (HUC): 5030106
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 9 May 2008

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There ~~Are no~~ "~~*navigable waters of the U.S.*~~" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Pick List** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   ☐ TNWs, including territorial seas
   ☐ Wetlands adjacent to TNWs
   ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   ☐ Non-RPWs that flow directly or indirectly into TNWs
   ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   ☐ Impoundments of jurisdictional waters
   ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: ~~501~~ 1871 linear feet: 5-8width (ft) and/or acres.
   Wetlands: 0.434 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: Owens run 2,433**acres**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** tributaries before entering TNW.

   Project waters are **20-25** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **15-20** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: UNT OR, 3,833 feet, is a 2th order RPW that flows to Owens Run, a tributary to the Enlow Fork of Wheeling Creek, a TWN which enters the Ohio River at RM 90.3. The 7 1st order streams, containing 1,178 feet, are tributaries to UNT 0R. .
Tributary stream order, if known: 1st and 2nd.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: may have been relocated during past land use activities.

Tributary properties with respect to top of bank (estimate):
Average width: 2-8 feet
Average depth: .5-3 feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☒ Silts ☒ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: tribuay is stable.
Presence of run/riffle/pool complexes. Explain: present.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: spring, seep, ground water, & surface run-off; connection..
Other information on duration and volume: 1/15/08 estimated flow ranged from 75-100 gpm in lower OR to 20 to 30 gpm in the upper reach. The 1st order tributaries ranged between 1 - 2 gpm in OR-B to 15-20 in OR-D.

Surface flow is: **Confined.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank ☒ the presence of litter and debris
☐ changes in the character of soil ☒ destruction of terrestrial vegetation
☒ shelving ☒ the presence of wrack line
☐ vegetation matted down, bent, or absent ☒ sediment sorting
☐ leaf litter disturbed or washed away ☒ scour
☒ sediment deposition ☒ multiple observed or predicted flow events
☐ water staining ☒ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: no observed pollutants, water clear.
Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

☒ Riparian corridor. Characteristics (type, average width): forested.
☒ Wetland fringe. Characteristics: PEM.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: s.
☒ Other environmentally-sensitive species. Explain findings: Likely habitat for sensitive salamender and reptile .
☒ Aquatic/wildlife diversity. Explain findings: bethic survey identified between8 and 17 taxa in UNT OR, and the 1st order tribs ranged between 2 taxa in OR-C to 6 taxa in OR-J.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:0.0.434acres
Wetland type. Explain:all PEM .
Wetland quality. Explain:appears good.
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☒ Directly abutting
☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: wetland 119, 0.68 in not directly abutting UNT OR but it is located within the floodplain in a depressional area.
☒ Ecological connection. Explain: wetland 119 adjacent wetland would serve to retain floodwaters to maintain low flow stream recharge.
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **20-25** river miles from TNW.
Project waters are **15-20** aerial (straight) miles from TNW.
Flow is from: **Wetland to/from navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: appear nondegraded.
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):valley is undeveloped forest ravine.
☒ Vegetation type/percent cover. Explain: forested.
☐ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:wetland type support a wide variety of herps including aquatic and upland sensitive species.
☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **9**
Approximately (0.434) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

	Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland 117	ABT	0.008	UNT OR-A	
Wetland 118	ABT	0.100	UNT OR	
Wetland 119	ADJ	0.068	UNT OR	
Wetland 120	ABT	0.008	UNT OR	
Wetland 121	ABT	0.021	UNT OR	
Wetland 122	ABT	0.014	UNT OR	
Wetland 123	ABT	0.154	UNT OR-N	
Wetland 125	ABT	0.042	UNT OR-K	
Wetland 126	ABT	0.019	UNt OR--J	
total		0.434		

Summarize overall biological, chemical and physical functions being performed: serves to retain excess nutrients and sediments from the water column; absorb pollutants, and provide wildlife habitat, contribute to the downstream foodweb,.ground water retention, recharge.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: wetland 119 is located within the floodplain of UNT in depressional area and is not abutting but is an adjacent wetland would serve to retain floodwaters to maintain low flow stream recharge in addition to providing habitat.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

☐ TNWs: linear feet width (ft), Or, acres.
☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: observed flow by consultant during stream asssement on 1/15/08 ranged from 75-100 gpm in lower OR to 20 to 30 gpm in the upper reach. The 1st order tributaries ranged between 1 - 2 gpm in OR-B to 15-20 in OR-D Benthics ranged from2 -3 in the headwaters 1st and 2nd order streams to 8 in the primary channels. The life cycle of the benthics found indicates that moisture is needed for a significant portion of their life cycle. Based on Corps observations during site visit defined bed and banks and substrate indicate that the stream is a RPW with more than seasonal flow. Stream is identified the USGS topo maps. The 0.434 acres of abutting wetlands assist in providing base flow during dry seasons. In the absense of additional information, the Corps has determined that these streams are more that seasonal RPWs..
☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **5,011** linear feet **5-8** width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **field surveys indicated that all wetlands identified in seciton B with the exception of wetland 119 have a direct hydrologic connection to the RWP.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: **0.366**acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.068**acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**

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[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
- ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
- ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  - Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Aquatic resource delineation report dated April 10, 2008 prepared by CEC Environmental Consultants.
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☒ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .

[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite scale & quad name:Wind Ridge 1:2,000.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☐ Aerial (Name & Date): .
  or ☒ **Other (Name & Date):supplied by CEC** taked during Jan 2008 field surveys.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: ANY ADDITIONAL INFO HERE.

1). THE WETLAND DELINEATION SERVICES WERE PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. ON AUGUST 2007 THROUGH MARCH 2008.

2). THE WETLAND DELINEATION SERVICES PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. WERE CONDUCTED IN A MANNER CONSISTENT WITH THE CRITERIA CONTAINED IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987 MANUAL), AND WITH THE LEVEL OF CARE AND SKILL ORDINARILY EXERCISED BY THE MEMBERS OF THE ENVIRONMENTAL CONSULTING PROFESSION PRACTICING CONTEMPORANEOUSLY UNDER SIMILAR CONDITIONS IN THE LOCALITY OF THE PROJECT. IT MUST BE RECOGNIZED THAT THE JURISDICTIONAL WATER DELINEATION WAS BASED ON FIELD OBSERVATIONS AND CIVIL & ENVIRONMENTAL CONSULTANTS' PROFESSIONAL INTERPRETATIONS OF THE CRITERIA IN THE 1987 MANUAL. WETLAND DETERMINATIONS MAY CHANGE SUBSEQUENT TO CIVIL AND ENVIRONMENTAL CONSULTANTS' DELINEATION, BASED ON CHANGES TO REGULATORY CRITERIA, CHANGES TO DRAINAGE, AND OTHER HUMAN ACTIVITIES AND/OR LAND DISTURBANCES.

TOPOGRAPHIC CONTOURS PROVIDED BY CONSOL PENNSYLVANIA COAL COMPANY, LLC 2007

DWN. BY: CBL | CHK. BY:

1 inch equals 225 feet

DATE: REVISED 9/4/2008

0 225 450 675 900 Feet

Legend

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Surface Water Connection
- Wetland
- Open Water
- Vernal Pool
- Off-Site Wetland
- No Access
- Project Boundary
- Hydrologically Isolated Resource

ISSUED FOR: CONSOL ENERGY

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 Baldwin Road
Pittsburgh, PA 15205-9702
1-800-365-2324
Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL * St. Louis, MO * Export, PA * Detriot, MI

WETLAND AND STREAM DELINEATION MAP
BAILEY COAL REFUSE DISPOSAL AREAS NO. 5 AND 6
CONSOL PENNSYLVANIA COAL COMPANY, LLC
GREENE COUNTY, PENNSYLVANIA

PROJECT NO.: 071-522.0001

FIGURE: 4

J:\Projects\2007\071522\maps\final\071522_delineation_3_14_08.mxd

September 5, 2008

2008 SEP -8 PM 1:55

Ms. Marcia Haberman
U.S. Army Corps of Engineers
Federal Building
1000 Liberty Avenue
Pittsburgh, Pennsylvania 15222-4186

Dear Ms. Haberman:

Subject: Wetland and Stream Delineation Report Revisions
Proposed Bailey Mine Coal Refuse Disposal Areas No. 5 and 6
Richhill Township, Greene County, Pennsylvania
CEC Project 071-522.0001

Civil & Environmental Consultants, Inc. (CEC), on behalf of Consol Pennsylvania Coal Company, LLC (CPCC), is submitting this letter to document revisions to the stream and wetland delineation report, as per our discussions during the jurisdictional determination field meeting, held on May 9, 2008. The following revisions were made to the original report, dated April 10, 2008:

- Tributary 32705C was determined to be hydrologically isolated from Tributary 32705 by 64 feet of upland. Consequently, Tributaries 32705C-1 through 32705C-5 were also hydrologically isolated.
- Tributary 32705D was determined to lack defined bed and banks; therefore, it was not considered a stream.
- 101 linear feet of intermittent stream was added to Tributary 32705K along the southwest boundary of Wetland 15. It is noted that this portion of stream is hydrologically isolated, being that it is separated from the downstream portion by approximately 65 feet of upland.
- Tributary 32705S was added as an intermittent stream connecting Wetland 16 to Wetland 16B.
- Wetland 103 was determined to be adjacent Tributary 32706; therefore, it is not hydrologically isolated.

The previously stated changes are reflected on revised Figure 4 and Tables 1 and 2.

Civil & Environmental Consultants, Inc.

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If you have any questions or require additional information, please feel free to contact me at (412) 429-2324 or mshema@cecinc.com.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Michael L. Shema
Project Manager

Enclosures

cc: Ed Suter – CPCC

L-071-522.S5.08/W

RECEIVED

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ARMY

WETLAND AND STREAM DELINEATION REPORT
BAILEY MINE COAL REFUSE DISPOSAL AREAS No. 5 AND 6
RICHHILL TOWNSHIP, GREENE COUNTY, PENNSYLVANIA

Prepared for:

CONSOL PENNSYLVANIA COAL COMPANY, LLC
1525 PLEASANT GROVE ROAD
P.O. BOX J
CLAYSVILLE, PA 15323

Prepared by:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 BALDWIN ROAD
PITTSBURGH, PENNSYLVANIA 15205

CEC Project 071-522.0001

April 10, 2008

site visit
093d
Friday May 9

2007-463

Civil & Environmental Consultants, Inc.

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April 10, 2008

Ms. Marsha Haberman
U.S. Army Corps of Engineers
Federal Building
1000 Liberty Avenue
Pittsburgh, Pennsylvania 15222-4186

Dear Ms. Haberman:

Subject: Request for Wetland Boundary Verification and Jurisdictional Waters Determination
Proposed Bailey Mine Coal Refuse Disposal Areas No. 5 and 6
Richhill Township, Greene County, Pennsylvania
CEC Project 071-522.0001

Civil & Environmental Consultants, Inc. (CEC), on behalf of Consol Pennsylvania Coal Company, LLC (CPCC), requests a wetland boundary verification and jurisdictional waters determination at the subject site. Enclosed are a completed Pittsburgh District Wetland Boundary Verification Checklist and a copy of the wetland and stream delineation report that was prepared by CEC. Most of the checklist information can be found inside the reports, as noted on the completed checklist. The following information, not included in the reports, satisfies the corresponding Wetland Boundary Verification Checklist items:

Item 2 - directions to the site from downtown Pittsburgh:

- Take I-79 South onto I-70 West
- Exit I-70 at the Chestnut Street exit
- Bear right off the exit ramp onto Rt. 40 East
- At the second traffic light turn right and follow to junction with Rt. 18
- Make a right onto Rt. 18 South and follow to the junction with Rt. 231
- Turn Right on Rt. 231 and follow this along Enlow Fork
- Where Rt. 231 turns right, continue going straight onto Rt. 3026 until you reach the Bailey Mine Preparation Plant (on your left)
- Pull through the main gates of the Preparation Plant, but do not proceed to the guard house
- We will meet in this parking lot then go through the gates together.

Total drive time is approximately 1 hr and 15 minutes from Pittsburgh

Item 5 - the site contacts are:

Applicant:
Mr. Ed Suter
Consol Pennsylvania Coal Company, LLC
1525 Pleasant Grove Road
P.O. Box J
Claysville, Pennsylvania 15323

Consultant:
Mr. Michael Shema
Civil & Environmental Consultants, Inc.
333 Baldwin Road
Pittsburgh, Pennsylvania 15205
(412) 429-2324
mshema@cecinc.com

We will also contact the Department of Environmental Protection (DEP) California District Mining Office to request their attendance at the verification site meeting. Please review the enclosed information and contact me at your earliest convenience so that we can coordinate a date for the site meeting. Please call if you have any questions or require additional information. Thank you for your attention to this request.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Michael L. Shema
Project Manager

Enclosures

cc: Ed Suter - CPCC
Mark Haibach – CEC

L-071-522.0001.AP10/W

TABLE OF CONTENTS

Page

1.0 Introduction 1

1.1 General Information 1
1.2 Methodology 1
1.2.1 Methodology for Delineating Wetlands 1
1.2.2 Methodology for Delineating Streams 3

2.0 Findings 5

2.1 National Wetlands Inventory Maps 5
2.2 Site Soils 5
2.3 Plant Communities 7
2.4 Hydrology 8
2.5 Wetlands 9
2.6 Streams 10
2.7 Other Waters 10
2.8 Preliminary Significant Nexus Determination 11

3.0 Regulatory Considerations 13

3.1 Meetings with Regulatory Agencies 13
3.2 Regulatory Issues 13

4.0 Conclusions 15

5.0 Level of Care 16

6.0 References 17

FIGURES

Figure 1 – USGS Site Location Map
Figure 2 – USFWS National Wetland Inventory (NWI) Map
Figure 3 – USDA Soils Map
Figure 4 – Wetland and Stream Delineation Map on Topographic Background

TABLES

Table 1 – Wetland Summary
Table 2 – Stream Summary
Table 3 – Other Waters Summary

APPENDICES

Appendix A – Wetland Determination Data Forms
Appendix B – Wetland and Vernal Pool Photographs
Appendix C – Stream Determination Data Forms
Appendix D – Stream Photographs

1.0 INTRODUCTION

1.1 GENERAL INFORMATION

This report presents the findings of a wetland and stream delineation conducted at the proposed Bailey Mine Coal Refuse Disposal Areas (CRDA) No. 5 and 6, a 750+ acre site, located in Richhill Township, Greene County, Pennsylvania (Figure 1). The purpose of the study was to identify and delineate wetlands, streams, and other potentially jurisdictional waters within the proposed development site. The property, herein referred to as the site, consists of upland forests, abandoned pastures, emergent wetlands, scrub-shrub wetlands, and forested wetlands. It is bounded to the north by the Bailey Mine complex, to the south by Ackley Creek Road, and to the east and west by undeveloped upland forest.

Civil & Environmental Consultants, Inc. (CEC) conducted the initial wetland delineation in August through September 2007 and conducted the initial stream delineation in January 2008. In February of 2008, the project area was revised to include additional areas, in which wetlands and streams were delineated between February 2008 and March 2008. CEC's wetland and stream delineation services were completed in accordance with our proposal for professional services dated July 26, 2007 and Consol Pennsylvania Coal Company, LLC's (CPCC) subsequent authorization to proceed.

1.2 METHODOLOGY

CEC identified and delineated all potential jurisdictional waters including wetlands and streams (ephemeral, intermittent, and perennial) within the site. The methodology for conducting the wetland and stream delineation work is presented below.

1.2.1 Methodology for Delineating Wetlands

The delineation was based on CEC's professional judgment and interpretation of the technical criteria presented in the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual*

(Corps Manual). Wetland boundaries, where present, were delineated using the routine onsite determination method described in the Corps Manual supplemented by the *National List of Plant Species That Occur in Wetlands: Northeast (Region 1)* (Reed 1988) and *Hydric Soils of the United States* (USDA 1991). CEC completed the following scope of services to identify and delineate jurisdictional wetland boundaries at the site:

1. Office Data Review: CEC personnel reviewed the U.S. Geological Survey (USGS) topographic mapping (Figure 1), U.S. Fish & Wildlife Service (USFWS), National Wetlands Inventory (NWI) Map (Figure 2), U.S. Department of Agriculture (USDA) *Soil Survey of Greene and Washington Counties, Pennsylvania* (Figure 3), aerial photographs, existing topographic surveys, and the county hydric soils list. These resources were used to identify potential wetland areas prior to conducting the fieldwork. Other potential jurisdictional water bodies located within the project area, (e.g. rivers, lakes, streams and ponds), were also identified from these sources.

2. Site Reconnaissance: CEC performed the wetland delineation using the routine onsite determination method. First, the dominant plant species within each plant community were identified and a determination was made on whether the community was dominated by hydrophytic (wetland) plants. Next, a representative test site was located within the plant community and soils were sampled using a spade shovel to determine if hydric soil indicators were present. Lastly, the test site was inspected to determine if indicators of wetland hydrology (ponding, soil saturation, etc.) were present.

   When a test site was determined to be within a wetland, further testing was performed to locate the wetland/non-wetland boundary and a second test site was typically established outside the wetland boundary to document conditions in the non-wetland area. The boundaries of areas having wetland vegetation, hydric soils, and wetland hydrology were marked in the field with consecutively numbered surveyor's flags and subsequently located by CEC biologists using a Trimble Geo-XT™ Global Positioning System (GPS).

3. Data Collection: Data forms for the routine onsite determination method were completed for 133 representative locations within the site boundaries (see Appendix A for the wetland data forms). The data sheets were completed to record the vegetation, soils and hydrology observations used in making the wetland determination. Representative photographs of the site and the wetlands are presented in Appendix B.

1.2.2 Methodology for Delineating Streams

In addition to identifying wetlands, CEC identified all streams within the study area that would likely be considered jurisdictional by state and federal regulatory agencies. A weight-of-evidence approach for identifying streams was used and is based on the evaluation of multiple lines of evidence concerning physical and biological indicators of stream hydrology. CEC used field indicators such as flow, substrate composition, presence of defined bed and bank, origin of the source of stream hydrology, presence/absence of vegetation within the stream channel, and the composition and relative abundances of resident stream invertebrates to classify on-site stream segments into three stream types: ephemeral, intermittent, and perennial. A description of each stream type is provided below.

- Ephemeral Stream – Stream reaches lacking flow or benthic macroinvertebrate communities. Ephemeral streams typically flow in direct response to precipitation events.

- Intermittent Stream – Stream reaches containing seasonal flows and possibly containing a benthic macroinvertebrate community comprised of taxa with short aquatic life stages (e.g., midges, blackfly larvae).

- Perennial Stream – Stream reaches containing year-round flow dominated by a diverse benthic macroinvertebrate community and containing permanently aquatic taxa or those with long aquatic life stages (e.g., freshwater mussels, dobsonflies, and some mayflies and stoneflies).

The uppermost limit of an ephemeral stream was determined at the point where the stream lost its defined "bed and bank" or ordinary high water mark (OHWM) and/or a predominance of upland vegetation was observed in the channel. The physical characteristics of the streams and field observations of aquatic biota are summarized on the field data forms presented in Appendix C. Photographs of delineated stream segments are presented in Appendix D.

The limit of each distinct stream segment was marked in the field with surveyors flagging, located with a GeoXT GPS unit, and subsequently transferred to the Wetland and Stream Delineation Map (Figures 4 and 5). The total stream segment lengths and designations are summarized in Section 2.6 of this report.

2.0 FINDINGS

2.1 NATIONAL WETLANDS INVENTORY MAP

NWI maps have been prepared by the USFWS based on high altitude infrared aerial photography and limited ground truthing. Wetlands and deep-water habitats are identified on these maps and classified according to the system developed by Cowardin and co-workers (1979).

The NWI map for the Wind Ridge, Pennsylvania quadrangle covering the site vicinity identifies four wetlands within the project site (Figure 2). The NWI map classifies one of these wetlands as a palustrine emergent wetland (PEM) and three of them as palustrine unconsolidated bottom wetlands (PUB). These wetlands are located along Tributaries 32705 and 32704 and correspond to the following delineated features: Wetland 1, Open Water 1, Wetland 24, and Wetland 31.

2.2 SITE SOILS

A review of the *Soil Survey of Washington and Greene Counties, PA* (USDA 1983) shows 11 soil mapping units on the project site, Figure 3. The soil mapping units identified at the site are summarized in the following table.

SOILS INFORMATION

Soil Mapping Unit Name (1)	Soil Mapping Unit Symbol (1)	Drainage Class(1)	Hydric Soil List Designation(2)
Culleoka silt loam, 3-25%	CaB, CaC, CaD	Well Drained	Not Hydric
Dormont silt loam, 3-25%	DoB, DoC, DoD*	Moderately Well Drained	Hydric Inclusions
Dormont-Culleoka silt loams, 15-50%	DtD, DtF	Moderately Well Drained and Well Drained	Not Hydric
Library silty clay loam, 8-15%	LbC	Somewhat Poorly Drained	Hydric Inclusions
Weikert-Culleoka complex, 3-15%	WeB, WeC	Well Drained	Hydric Inclusions

(1) USDA [1983] (2) USDA
*DoD is not listed as having hydric components

The majority of the site is mapped as Dormont-Culleoka silt loams. As shown in the table above, the USDA identifies five out of 12 soil units within the site as having hydric inclusions. The following paragraphs provide a short description of each soil mapping unit identified within the site.

Culleoka silt loam (CaB, CaC, CaD), 3-25% slopes: The Culleoka soil series consists of well drained soils in uplands. Water runoff is medium to rapid, permeability is moderate, and available water capacity is moderate. CaB is located on 3 to 8 percent slopes and is classified as Prime Farmland, but CaC and CaD are located on steeper slopes and are not classified as Prime Farmland.

Dormont silt loam (DoB, DoC, DoD), 3-25% slopes: The Dormont soil series consists of moderately well drained soils in uplands. Water runoff is medium to rapid, permeability is slow to moderately slow, and available water capacity is high. The Dormont soil series is not listed as Prime Farmland, but DoB (3-8%) and DoC (8-15%) are listed as Additional Farmland of Statewide Importance.

Dormont-Culleoka silt loams (DtD and DtF), 15-50% slopes: The Dormont-Culleoka series consists of moderately well drained and well drained soils in uplands. Water runoff is medium to rapid, permeability is moderately slow to moderately rapid, and the available water capacity is moderate to high. This soil series is not listed as Prime Farmland or Additional Farmland of Statewide Importance.

Library silty clay loam (LbC), 8-15% slopes: The Library series consists of somewhat poorly drained soils in uplands and on terraces. Water runoff is rapid, permeability is slow, and the available water capacity is moderate to high. This soil series is listed as Additional Farmland of Statewide Importance.

Weikert-Culleoka complex (WeB and WeC), 3-15% slopes: The Weikert-Culleoka series consists of well drained soils in uplands. Water runoff is medium to rapid, permeability is

moderately rapid, and the available water capacity is very slow. WeB (3-8%) is listed as Additional Farmland of Statewide Importance.

2.3 PLANT COMMUNITIES

The plant communities present on the site consist of upland forests, abandoned pastures, emergent wetlands, scrub-shrub wetlands, and forested wetlands. Dominant plant species comprising these plant communities were identified and the USFWS wetland plant indicator status was determined according to Reed (1988). The USFWS has defined five wetland plant indicator categories, which include:

(1) obligate wetland (OBL – has >99% probability of occurring in wetlands);
(2) facultative wetland (FACW – has 66% to 99% chance of occurring in wetlands);
(3) facultative (FAC – has 33% to 66% chance of occurring in wetlands);
(4) facultative upland (FACU – has 1 to 33% chance of occurring in wetlands); and
(5) upland (UPL – has <1% chance of occurring in wetlands).

Plants classified as OBL, FACW or FAC are considered wetland plants (or hydrophytes) by the Corps and the Pennsylvania Department of Environmental Protection (PADEP).

Upland forests, located along steep side slopes and ridgetops, were typically dominated by the following tree species: sugar maple (*Acer saccharum*, FACU-), green ash (*Fraxinus pennsylvanica*, FACW), American hornbeam (*Carpinus caroliniana*, FAC), American beech (*Fagus grandifolia*, FACU), black cherry (*Prunus serotina*, FACU) and northern red oak (*Quercus rubra*, FACU-).

Abandoned pastures, located along Tributary 32705, commonly supported the following herbaceous species: orchard grass (*Dactylis glomerata*, FACU), timothy (*Phleum pretense,* FACU), wild carrot (*Daucus carota*, UPL), red fescue (*Festuca rubra*, FACU), and golden-rod species (*Solidago spp.*).

Emergent wetlands commonly supported the following herbaceous species: sweetflag (*Acorus calamus*, OBL), rice-cut grass (*Leersia oryzoides*, OBL), arrow-leaf tearthumb (*Polygonum sagittatum*, OBL), boneset (*Eupatorium perfoliatum*, FACW+), jewelweed (*Impatiens capensis*, FACW), and sedge species (*Carex spp.*).

The dominate shrubs growing in the palustrine scrub/shrub wetlands were spicebush (*Lindera benzoin*, FACW-) and box elder (*Acer negundo*, FAC+), and the dominant tree species in the palustrine forested wetlands was Norway spruce (*Picea abies*, UPL).

The individual wetland areas and their characteristics are listed in Table 1 of this report and the dominant plant species observed in the wetlands and their indicator status are recorded on the wetland determination data forms (Appendix A).

2.4 HYDROLOGY

Site elevations range from approximately 1,540 feet AMSL in the northeast to 1,080 feet AMSL along the Unnamed Tributary to Owens Run (UNT-OR) in the southwestern portion of the site. Hydrologic features on the site include wetlands, streams, open water habitat, and vernal pools.

The main hydrologic feature present on the site is Tributary 32705. The stream originates onsite at a spring and traverses the site in a southwestern direction. This stream is mapped on the USGS quadrangle as a dashed blue-line stream and discharges directly into Owens Run. The stream channel was twelve to fifteen feet wide and contained between four and twelve inches of water at the time of the site reconnaissance. The substrate within the channel included bedrock, boulder, cobble, gravel, sand and silt. The banks along Tributary 32705 are moderate to steeply sloping, and exhibit some areas of moderate erosion.

The second major hydrologic feature of the site is Tributary 32706, which originates at a spring and flows southeast before discharging into Tributary 32705. This stream is also mapped on the USGS quadrangle as a dashed blue-line stream, and it was four to five feet wide and contained

two to three inches of water at the time of the site reconnaissance. Cobble, gravel, sand, and silt were the primary substrates throughout the stream reach.

The third major hydrologic feature of the site is an Unnamed Tributary to Owens Run (UNT-OR), which originates at a spring and flows south into Owens Run. This stream is not depicted on the USGS quadrangle, but it is five to seven feet wide at the mouth and contained one to three inches of water at the time of the site reconnaissance. Substrates were dominated by cobble, gravel, sand, and silt.

The fourth major hydrologic feature of the site is Tributary 32704, which originates at a spring and flows southeast before discharging into Owens Run. This stream is also mapped on the USGS quadrangle as a dashed blue-line stream, and it was one to two feed wide and contained two to three inches of water at the time of the site reconnaissance. Cobble, gravel, sand, and silt were the primary substrates throughout the stream reach.

2.5 WETLANDS

A total of 104 wetland areas totaling 6.760 acres were identified and delineated at the site. The wetlands range in size from 0.001 acre to 0.644 acre, with the majority of the wetlands being less than 0.100 acre. The size and CEC's interpretation of the Cowardin and Brinson classifications are summarized in Table 1. Most of the wetlands were located adjacent to surface water features such as streams. The hydrology for floodplain wetlands was primarily provided by shallow groundwater and precipitation. Several groundwater seepage wetlands were located on side slopes within abandoned pastures. Wetlands that were in close proximity to each other, had a shared source of hydrology, and supported similar plant communities were commonly represented by a single test site.

Among the site's wetlands, 18 wetland areas totaling 0.357 acre were hydrologically isolated from jurisdictional waters and are identified in Table 1 with an asterisk (*).

A field survey of the flagged wetland boundaries was completed by using a sub-meter Trimble® GeoXT™ GPS unit. The wetland data forms are provided in Appendix A, and the overall wetland locations are shown on Figures 4 and 5. Photographs of the wetlands are provided in Appendix B. The wetlands identified on the site do not include the open water habitat and vernal pools described in Section 2.7 of this report.

2.6 STREAMS

In addition to identifying wetlands within the site, CEC identified streams that would likely be considered "jurisdictional" by the Corps and/or PADEP. A total of 35,696 feet of stream was identified on the site and was comprised of 8,392 feet of ephemeral stream, 18,314 feet of intermittent stream, and 8,990 feet of perennial stream. The approximate onsite lengths of the streams and CEC's stream classification are summarized in Table 2. Stream determination data forms are provided in Appendix C and stream photographs are provided in Appendix D.

Perennial streams were limited to the main stem of Tributary 32704, Tributary 32705, UNT-OR and Tributary 32705A. These reaches typically supported diverse benthic macroinvertebrate assemblages dominated by long-lived taxa such as mayflies (Ephemeroptera), stoneflies (Plecoptera), and caddisflies (Trichoptera). Streams classified as intermittent typically supported benthic macroinvertebrate communities dominated by short-lived taxa such as flatworms (Platyhelminthes), black flies (Simulidae), midges (Chironomidae), and aquatic worms (Oligochaeta). Ephemeral drainages generally lacked flow and did not support a benthic macroinvertebrate community.

Among the site's streams, six streams totaling 867 feet were hydrologically isolated from jurisdictional waters and are identified in Table 2 with an asterisk (*).

2.7 OTHER WATERS

During the site reconnaissance, one open water habitat was also identified. Open Water 1 (0.052 acre) is located along Tributary 32705I and is a man-made impoundment intended for

agricultural use. The pond does have an outlet pipe; however, the berm has been breached and the pond currently discharges through an eroded channel on the southwestern side.

Three vernal pools were also identified within the project area. Vernal Pool 2 (0.011 acre), Vernal Pool 3 (0.011 acre), and Vernal Pool 4 (0.006 acre) are located upslope of the headwaters of Tributary 32704, but lack a hydrologic connection to Tributary 32704. The vernal pools appear to be natural features, that were characterized by having standing water (3-6 inches deep) and water stained leaves which indicate that the areas are inundated for a significant portion of the year. However, none of the vernal pools supported hydrophytic vegetation. These resources are summarized in Table 3.

2.8 PRELIMINARY SIGNIFICANT NEXUS DETERMINATION

The Corps and the U.S. Environmental Protection Agency have issued guidance on conducting jurisdictional determinations in response to the recent U.S. Supreme Court decision in *Rapanos vs. United States* concerning the extent of jurisdictional waters under Section 404 of the Clean Water Act (Corps 2007). The guidance manual indicates that rivers and streams that are navigable or navigable-in-fact and those that are "relatively permanent waters" (RPWs, e.g., exhibit perennial or seasonal flow) are jurisdictional waters. Similarly, wetlands that are adjacent to or directly abut Traditional Navigable Waters (TNWs) and wetlands that directly abut RPWs are considered jurisdictional waters.

Wetlands that are adjacent to, but not directly abutting, RPWs and streams that are considered non-relatively permanent waters (NRPWs, e.g., exhibit ephemeral flow) require a significant nexus determination to establish if the water has more than a speculative or insubstantial effect on the chemical, physical, and/or biological integrity of a TNW.

In working with the Pittsburgh District of the Corps, on projects similar to CRDA No. 5 and 6, CEC understands that the Corps is typically not claiming jurisdiction over NRPWs that do not have wetlands associated with them. Based on CEC's experience and interpretation of these guidelines, it is CEC's professional opinion that approximately 6,077 feet of the onsite

ephemeral streams do not meet the significant nexus criterion, and therefore, are non-jurisdictional. Streams that are not considered to have a significant nexus are marked in Table 2 with a double asterisk (**).

3.0 REGULATORY CONSIDERATIONS

3.1 MEETINGS WITH REGULATORY AGENCIES

No wetland and stream jurisdictional determination meetings with regulatory agencies have occurred at the proposed Bailey Mine CRDA No. 5 and 6 site. Wetland and stream encroachment permits will be required for the proposed development activities. CEC recommends that a site visit be scheduled with representatives of the Pittsburgh District of the Corps for the purpose of having this agency verify the wetland boundaries and the extent of jurisdictional streams, discuss proposed wetland and stream impacts, and possible mitigation measures. Recently, the Corps has developed new guidance materials regarding jurisdictional determinations, which requires the Corps to document the presence of a "significant nexus" between the on-site aquatic resources and traditional navigable waters. The amount and type of information that may be required can be site-specific and vary on a case-by-case basis. Additional information may be requested by the Corps to complete the jurisdictional determination.

3.2 REGULATORY ISSUES

Impacts to jurisdictional wetlands and streams are regulated in the Commonwealth of Pennsylvania by the Corps and PADEP. Discharges of dredged or fill material into waters of the United States, including non-isolated wetlands, require permits from the Corps under the provisions of Section 404 of the CWA. A Water Quality Certification must also be obtained from the PADEP in accordance with Section 401 of the CWA.

Obstructions and encroachments in bodies of water of the Commonwealth, including wetlands, are regulated on the state level by PADEP. Before commencing activities in a stream, river, floodway, lake, pond or wetland, the appropriate permit must be secured by the landowner. Pennsylvania regulates impacts to wetlands and waterbodies under the provisions of 25 PA Code Chapter – 105 *Dam Safety and Waterway Management.* The Pennsylvania permits will be

reviewed by PADEP under the Coal Mining Activity Permit (CMAP) regulatory program. Module 15 of the CMAP document addresses PA Chapter 105 wetland and stream permitting. Based on the results of the wetland delineation and the preliminary design of the proposed Bailey CRDA No. 5 and 6, the project will impact jurisdictional wetlands and streams. The majority of these streams are likely to be classified as jurisdictional waters by the Corps and PADEP, thus requiring that permits be obtained for fill placed into the wetlands and streams.

CEC suggests that the site plan for the proposed Bailey CRDA No. 5 and 6 site be designed to avoid and minimize wetland and stream impacts to the extent possible. An alternatives analysis that demonstrates the need to encroach upon wetlands and jurisdictional waters and that demonstrates environmental impacts to these resources were minimized may need to be completed if an individual Section 404 CWA permit is required. A mitigation plan for any unavoidable wetlands and water course impacts may be required with the submittal of the permit application or pre-construction notice.

4.0 CONCLUSIONS

One-hundred and four wetland areas, totaling 6.760 acres, were identified and delineated within the proposed Bailey Mine CRDA No. 5 and 6. Additionally, a total of 35,696 feet of stream was identified in the proposed project area and was comprised of 8,392 feet of ephemeral stream, 18,314 feet of intermittent stream, and 8,990 feet of perennial stream. One open water habitat totaling 0.052 acre and three vernal pools totaling 0.028 acre were also identified and delineated within the project area. The wetland and stream determination boundaries were flagged in the field and subsequently located by CEC ecologists using a Trimble® GeoXT™ GPS. The boundaries of all potential jurisdictional waters are shown on Figure 4 and 5.

Of the aquatic resources on the site, CEC has identified 0.357 acre of wetlands, 0.028 acre of vernal pools, and 867 feet of stream to be hydrologically isolated from jurisdictional waters. Additionally, under the significant nexus standard, 6,077 feet of ephemeral streams should be considered non-jurisdictional by the Corps. Therefore, the total jurisdictional waters on the site include 6.403 acres of wetlands, 28,703 feet of stream, and 0.052 acre of open water habitat.

5.0 LEVEL OF CARE

The wetland delineation services performed by CEC were conducted in a manner consistent with the criteria contained in the Corps Manual and with the level of care and skill ordinarily exercised by members of the environmental consulting profession practicing contemporaneously under similar conditions in the locality of the project. It must be recognized that the wetland delineation was based on field observations and CEC's professional interpretation of the criteria in the Corps Manual at the time of our field work. Wetland determinations may change subsequent to CEC's delineation based on changes in the regulatory criteria, seasonal variations in hydrology, alterations to drainage patterns and other human activities and/or land disturbances.

6.0 REFERENCES

Cowardin, L. M., V. Carter, and F. C. Golet. 1979. *Classification of Wetlands and Deep Water Habitats of the United States.* U.S. Department of the Interior, Fish and Wildlife Service. Washington D. C. FWS/OBS-79/31.

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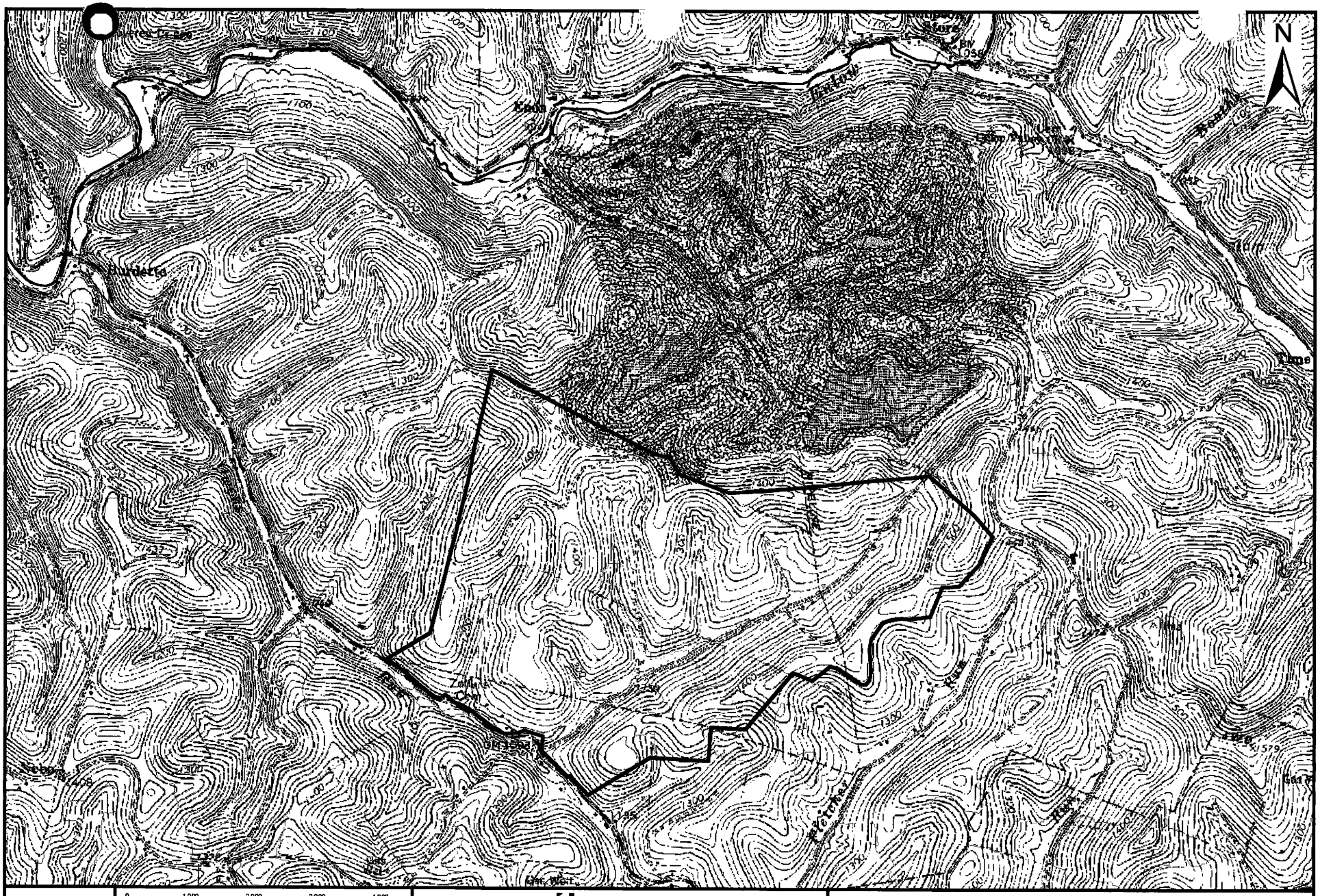
FIGURES



USGS 7.5 MIN
WIND RIDGE,
PA QUADRANGLE,
DATED: 1964,
PHOTOREVISED: 1994

DWN. BY: BWF
CHK. BY: MRH

1 inch equals 2,000 feet

DATE: 1/23/2008

0 1,000 2,000 3,000 4,000 Feet

Project Boundary (750+ Acres)

ISSUED FOR: CONSOL ENERGY

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 Baldwin Road
Pittsburgh, PA 15205-9702
1-800-365-2324

Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL * St. Louis, MO * Export, PA * Detroit, MI

USGS SITE LOCATION MAP
BAILEY COAL REFUSE DISPOSAL AREAS NO. 5 AND 6
CONSOL PENNSYLVANIA COAL COMPANY, LLC
GREENE COUNTY, PENNSYLVANIA

PROJECT NO.: 071-522.001

FIGURE: 1

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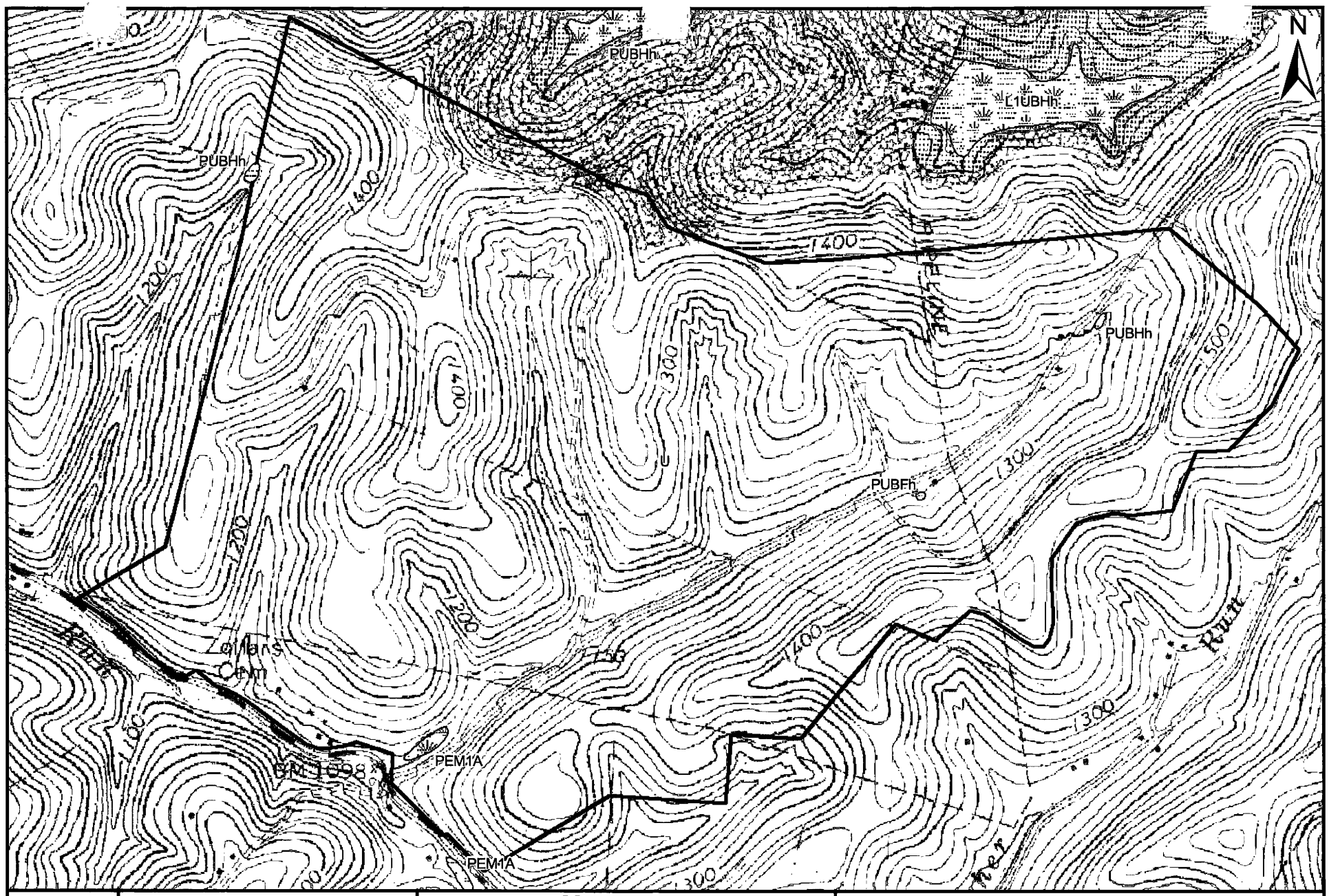

USGS 7.5 MIN QUADRANGLE WINDRIDGE, PENNSYLVANIA NATIONAL WETLANDS INVENTORY (NWI) FROM USFWS, 1982

DWN. BY: BMF

CHK. BY: MEH

1 inch equals 1,000 feet

DATE: 1/23/2008

0 500 1,000 1,500 2,000 Feet

NWI Wetlands

Project Boundary (750+ Acres)

ISSUED FOR: CONSOL ENERGY

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 Baldwin Road
Pittsburgh, PA 15205-9702
1-800-365-2324

Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL * St. Louis, MO * Export, PA * Detroit, MI

USFWS NATIONAL WETLAND INVENTORY (NWI) MAP
BAILEY COAL REFUSE DISPOSAL AREAS NO. 5 AND 6
CONSOL PENNSYLVANIA COAL COMPANY, LLC
GREENE COUNTY, PENNSYLVANIA

PROJECT NO.: 071-522.001

FIGURE: 2

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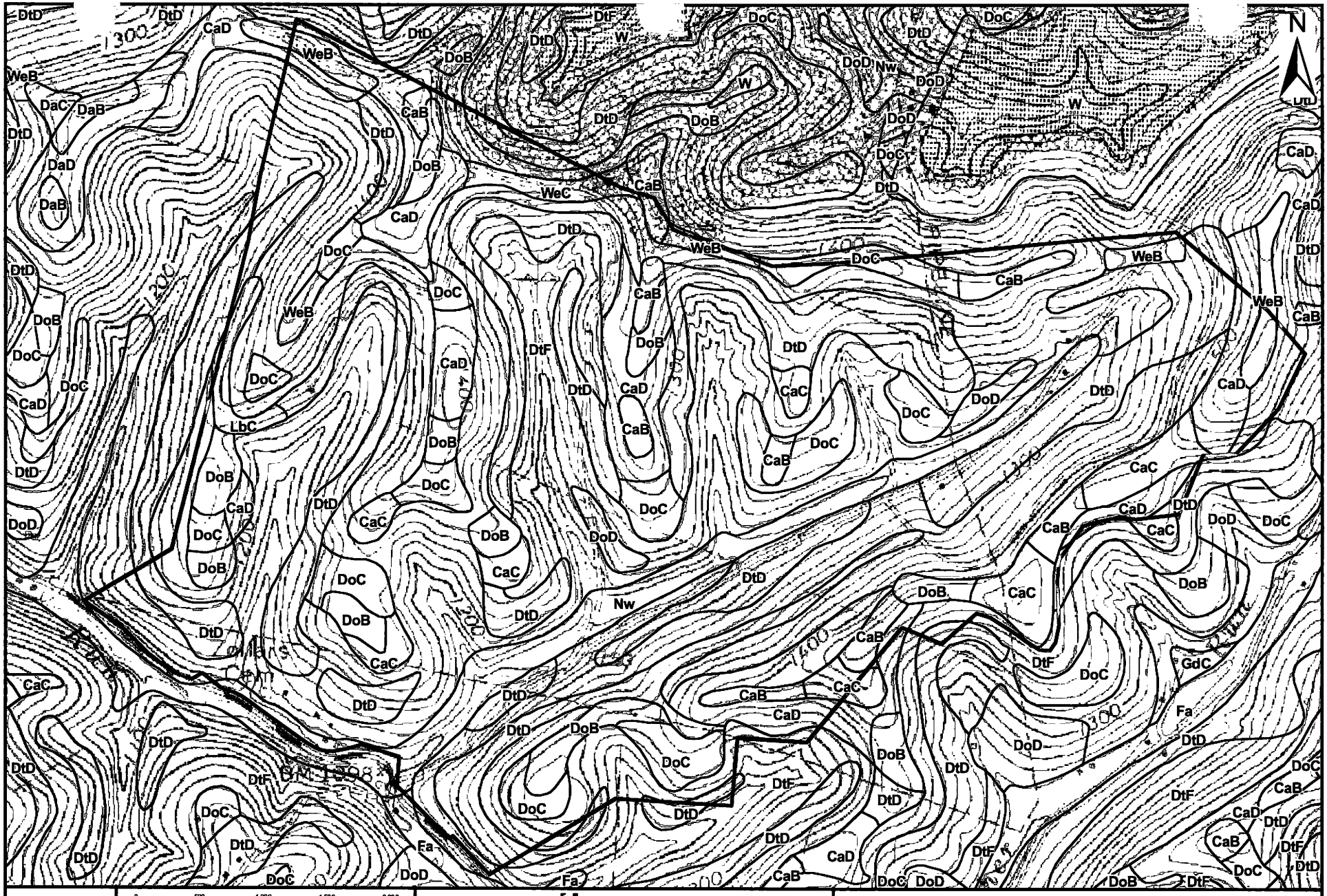

USGS 7.5 MIN QUADRANGLE WINDRIDGE, PENNSYLVANIA SOILS FROM USDA, NRCS, 2004

DWN. BY. BMF | CHK. BY MRH

1 inch equals 1,000 feet

DATE: 1/23/2008

0 500 1,000 1,500 2,000 Feet

Project Boundary (750+ Acres)

Soil Map Unit

ISSUED FOR: CONSOL ENERGY

ISSUED BY: CEC

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 Baldwin Road
Pittsburgh, PA 15205-9702
1-800-365-2324
Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL * St. Louis, MO * Export, PA * Detroit, MI

USDA SOILS MAP
BAILEY COAL REFUSE DISPOSAL AREAS NO. 5 AND 6
CONSOL PENNSYLVANIA COAL COMPANY, LLC
GREENE COUNTY, PENNSYLVANIA

PROJECT NO.: 071-522.001 | FIGURE: 3

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TABLES

TABLE 1
WETLAND SUMMARY
BAILEY MINE CRDA No. 5 AND 6
CEC PROJECT: 071-522.0001

Wetland Name	Classification		Wetland Acreage
	Cowardin (NWI)	Brinson (HGM)	
Wetland 1	PEM	LGR	0.132
Wetland 2	PEM	LGR	0.109
Wetland 3	PEM	LGR	0.041
Wetland 3A	PEM	LGR	0.033
Wetland 3B	PEM	LGR	0.009
Wetland 4	PEM	LGR	0.028
Wetland 5	PEM	LGR	0.013
Wetland 5A	PEM	LGR	0.011
Wetland 5B	PEM	LGR	0.039
Wetland 5C	PEM	LGR	0.034
Wetland 6	PEM	LGR	0.099
Wetland 6A	PEM	LGR	0.069
Wetland 7	PEM	LGR	0.033
Wetland 7A	PEM	LGR	0.006
Wetland 7B	PEM	LGR	0.015
Wetland 7C	PEM	LGR	0.009
Wetland 8 SAME?	PEM /PSS?	LGR	0.288
Wetland 8A	PFO	LGR	0.162
Wetland 8B	PEM	LGR	0.029
Wetland 9	PEM	LGR	0.122
Wetland 10	PEM	LGR	0.033
Wetland 11	PEM	LGR	0.161
Wetland 11A	PEM	LGR	0.057
Wetland 12	PEM	LGR	0.053
Wetland 13	PEM	HGR	0.025
Wetland 13A	PEM	GWS	0.064
Wetland 13B	PEM	HGR	0.024
Wetland 14	PEM	GWS	0.013
Wetland 15*	PEM	GWS	0.041
Wetland 15A*	PEM	GWS	0.008
Wetland 15B*	PEM	GWS	0.003
Wetland 16	PEM	GWS	0.140
Wetland 16A*	PEM	GWS	0.017
Wetland 16B	PEM	GWS	0.011
Wetland 17	PEM	LGR	0.078
Wetland 18	PEM	GWS	0.310
Wetland 19	PEM	LGR	0.008
Wetland 19A	PEM	LGR	0.012
Wetland 20	PEM	GWS	0.055

TABLE 1
WETLAND SUMMARY
BAILEY MINE CRDA No. 5 AND 6
CEC PROJECT: 071-522.0001

Wetland Name	Classification		Wetland Acreage
	Cowardin (NWI)	Brinson (HGM)	
Wetland 21	PEM	HGR	0.056
Wetland 21A	PEM	HGR	0.028
Wetland 22	PEM	HGR	0.020
Wetland 23	PEM	HGR	0.330
Wetland 23A*	PEM	GWS	0.005
Wetland 24	PEM	HGR	0.169
Wetland 25	PEM	HGR	0.071
Wetland 26	PEM	HGR	0.034
Wetland 27*	PEM	GWS	0.050
Wetland 28*	PEM	GWS	Off-Site
Wetland 29*	PEM	GWS	0.077
Wetland 30	PEM/SS	GWS	0.451
Wetland 30A*	PEM/SS	GWS	0.006
Wetland 31 WHY NOT ONE	PEM/SS	HGR	0.221
Wetland 31A	PEM	HGR	0.024
Wetland 32*	PSS	GWS	0.016
Wetland 33* ?	PEM	GWS	0.025
Wetland 34	PSS	GWS	0.070
SAME ? Wetland 100	PEM PSS?	LGR	0.517
Wetland 100A OUT OF ORDER NO ~~DATA SHEET~~	PFO	LGR	0.106
Wetland 101	PEM/SS	LGR	0.007
Wetland 102	PEM PSS ?	HGR	0.008
Wetland 103*	PEM	GWS	0.044
Wetland 103A	PEM	GWS	0.013
Wetland 104	PEM	HGR	0.013
Wetland 104A	PEM	HGR	0.043
Wetland 104B	PEM	HGR	0.003
Wetland 104C	PEM	HGR	0.025
Wetland 105	PEM	HGR	0.035
Wetland 105A	PEM	HGR	0.005
Wetland 106	PEM	HGR	0.043
Wetland 107	PEM	GWS	0.032
Wetland 107A*	PEM	GWS	0.013
Wetland 108	PEM	LGR	0.096
Wetland 108A	PEM	LGR	0.008
Wetland 109	PEM	HGR	0.066
Wetland 110	PEM	HGR	0.045
Wetland 110A	PEM	HGR	0.051
Wetland 111	PEM	HGR	0.007

TABLE 1
WETLAND SUMMARY
BAILEY MINE CRDA No. 5 AND 6
CEC PROJECT: 071-522.0001

Wetland Name	Classification		Wetland Acreage
	Cowardin (NWI)	Brinson (HGM)	
Wetland 112	PEM	HGR	0.035
Wetland 112A	PEM	HGR	0.007
Wetland 113	PEM	GWS	0.050
Wetland 114	PEM	HGR	0.023
Wetland 115	PEM	HGR	0.036
Wetland 116	PEM	HGR	0.027
Wetland 116A	PEM	HGR	0.036
Wetland 117	PEM	LGR	0.008
Wetland 118	PEM	LGR	0.100
Wetland 119	PEM	GWS	0.068
Wetland 120	PEM	HGR	0.008
Wetland 121	PEM	HGR	0.021
Wetland 122	PEM	HGR	0.014
Wetland 123	PEM	GWS	0.154
Wetland 123A*	PEM	GWS	0.001
Wetland 124* ~~LOOIS~~	PEM	GWS	0.003
Wetland 125	PEM	GWS	0.042
Wetland 126	PEM	GWS	0.019
Wetland 127	PEM	GWS	0.056
Wetland 128	PEM	GWS	0.104
Wetland 128A*	PEM	GWS	0.008
Wetland 129	PEM	GWS	0.644
Wetland 129A*	PEM	GWS	0.011
Wetland 129B*	PEM	GWS	0.023
Wetland 129C*	PEM	GWS	0.006
Wetland 130	PEM	LGR	0.029
		Total Wetland Acreage	**6.760**
		Isolated Wetland Acreage	**0.357**
		Total Jurisdictional Wetland Acreage	**6.403**

*It is CEC's professional opinion that these wetlands lack a hydrologic connection to jurisdictional waters and, thus, should not be considered jurisdictional by the USACE.

COWARDIN
PEM - Palustrine Emergent Wetland
PSS - Palustrine Scrub/Shrub Wetland
PFO - Palustrine Forested Wetland

BRINSON
GWS - Groundwater Slope Wetland
LGR - Low-Gradient Riparian Wetland (0.1-3% Slope)
HGR - High-Gradient Riparian Wetland (>3% Slope)

TABLE 2
STREAM SUMMARY
BAILEY MINE CRDA No. 5 AND 6
CEC PROJECT: 071-522.0001

Stream Name	Stream Length (l.f.)			
	Perennial	Intermittent	Ephemeral	Total
32705 (141 l.f. **)	5,487	2,504	352	8,343
32705A	165			165
32705B		43		43
32705C		1,127		1,127
32705C-1**			240	240
32705C-2**			132	132
32705C-3**			283	283
32705C-4**			105	105
32705C-5**			182	182
32705D**			499	499
32705E		66		66
32705F		2,397	40	2,437
32705F-1**			312	312
32705F-2*			324	324
32705F-3**			100	100
32705F-4		287		287
32705F-5**			156	156
32705F-6		336		336
32705F-7		125	128	253
32705G**			506	506
32705H		1,109	154	1,263
32705H-1**			53	53
32705H-2**			53	53
32705I		265		265
32705J		9		9
32705K		77		77
32705L		347	84	431
32705M		47		47
32705N		47		47
32705O		164		164
32705P		16		16
32705Q**			258	258
32705R**			176	176
32706		3,651		3,651
32706A		497		497
32706B		74	92	166
32706C		49		49
32706D**			71	71
32706E		629		629

TABLE 2
STREAM SUMMARY
BAILEY MINE CRDA No. 5 AND 6
CEC PROJECT: 071-522.0001

Stream Name	Stream Length (l.f.)			
	Perennial	Intermittent	Ephemeral	Total
32706E-1		548	162	710
32706E-2		58	45	103
32706E-3		248		248
32706E-4**			129	129
32706E-5**			124	124
32706F			50	50
32706G		365		365
32706H**			184	184
32706I**			198	198
32706J**			146	146
UNT-OR (137 l.f. **)	2,880	731	222	3,833
UNT-OR A		44		44
UNT-OR B		64		64
UNT-OR C*		49		49
UNT-OR D		287	45	332
UNT-OR E		317		317
UNT-OR F**			154	154
UNT-OR G*			118	118
UNT-OR H*			154	154
UNT-OR I**			73	73
UNT-OR J		164		164
UNT-OR K			164	164
UNT-OR L**			31	31
UNT-OR M**			33	33
UNT-OR N		93		93
UNT-OR O*			59	59
UNT-OR P**			204	204
UNT-OR Q**			208	208
UNT2-OR		288		288
UNT3-OR(168 l.f.**)		52	168	220
UNT3-OR A*			212	212
32704 (94 l.f. **)	458	278	94	830
32704A		151		151
32704B		157		157
32704B-1		52		52
32704C**			301	301
32704D**			160	160
32704E			154	154
32704F		232	34	266

TABLE 2
STREAM SUMMARY
BAILEY MINE CRDA No. 5 AND 6
CEC PROJECT: 071-522.0001

Stream Name	Stream Length (l.f.)			
	Perennial	Intermittent	Ephemeral	Total
32704G**			119	119
32704H**			245	245
32704I		270		270
32704J**			102	102
Total Stream Length	**8,990**	**18,314**	**8,392**	**35,696**
Isolated Stream Length	**0**	**49**	**867**	**916**
Non-Jurisdicitional (Post-Rapanos) Stream Length	**0**	**0**	**6,077**	**6,077**
Total Jurisdictional Stream Length	**8,990**	**18,265**	**1,448**	**28,703**

*It is CEC's professional opinion that these wetlands lack a hydrologic connection to jurisdictional waters and, thus, should not be considered jurisdictional by the USACE.

**It is CEC's professional opinion that these areas lack a significant nexus as specified under the Rapanos guidance and, thus, should not be considered jurisdictional by the USACE

TABLE 3
OTHER WATERS SUMMARY
BAILEY MINE CRDA No. 5 AND 6
CEC PROJECT: 071-522.0001

Resource Name	Acreage
Open Water 1	0.052
Vernal Pool 1*	Off-Site
Vernal Pool 2*	0.011
Vernal Pool 3*	0.011
Vernal Pool 4*	0.006
Total Acreage	**0.080**
Total Isolated Acreage	**0.028**
Total Jurisdictional Acreage	**0.052**

*It is CEC's professional opinion that these vernal pools lack a hydrologic connection to jurisdictional waters and, thus, should not be considered jurisdictional by the USACE.

APPENDIX A

WETLAND DETERMINATION DATA FORMS

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 8-28-07
Applicant:	CONSOL	Parcel/Owner:	County: GREENE
Investigator(s):	MLS, MJN	GPS Unit: GEOXT 7 Camera: A	State: PA
GPS Coordinates:	39° 56' 52.46"N 80° 25' 10.22"W	Point Name: Wetland 1	TS-1
Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	WETLAND - 1, TS-1
Is the area a potential problem area?	Yes	No ✓	Photograph No:
(if needed, explain on reverse.)			1, 2

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Polygonum sagittatum	H	OBL	12.			
3.	Carex stricta	H	OBL	13.			
4.	Pilea pumila	H	FACW	14.			
5.	Aster prenanthoides	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

- ____ Recorded Data (Describe in Remarks)
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NA (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: TO SURFACE (inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ✓ Saturated in upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: WETLAND-1, TS-1

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-10		2.5 Y 4/2	NONE	NA	SILT LOAM
10-13		5Y 5/1	7.5YR 4/6	COMMON/ MEDIUM - COURSE	SILT LOAM
13-16		5Y 5/1	NONE	NA	CLAYEY SILT LOAM

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

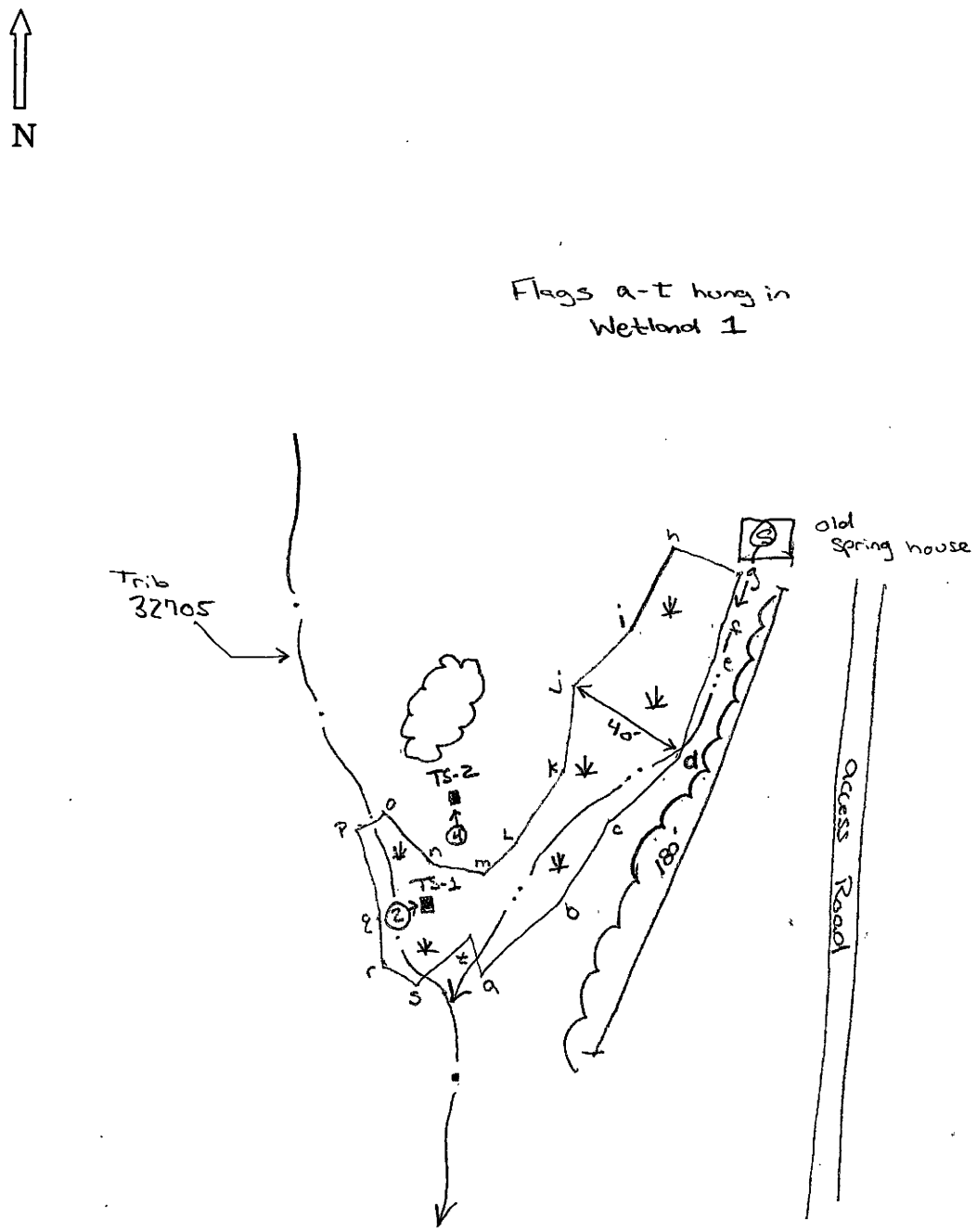
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 1, TS-1

Date: 8-28-07

Acres: 0.132

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-28-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** GREENE
Investigator(s):	MLS, MJN	**GPS Unit:** GEOXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°56'52.61"N 80°25'10.00"W	**Point Name:** Non Wetland; TS-2	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No ✓	NON WETLAND, TS-2
Is the area a potential problem area?	Yes	No ✓	**Photograph No:**
(if needed, explain on reverse.) .			3, 4

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Verbesina alternifolia	H	FAC	11.			
2.	Monarda clinopodia	H	UPL	12.			
3.	Viola sp.	H	N.I.	13.			
4.	Poa sp.	H	N.I.	14.			
5.	Rudbeckia laciniata	H	FACW	15.			
6.	Juglans nigra	T	FACU	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/4 = 50%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: NON WETLAND, TS-2

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (NW)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-7		10YR 4/2	NONE	NA	SILT LOAM
7-16		10YR 4/2	NONE	NA	GRAVELY SILT LOAM

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071 - 522.0001 CRDA NO. 5

Wetland ID: NON WETLAND, TS - 2

Date: 8/20/07

Acres: —

SKETCH MAP:

N

SEE SKETCH MAP FOR WETLAND 1, TS-1

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8/28/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** GREENE
Investigator(s):	MLS, MJN	**GPS Unit:** GEOXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°56'53.90"N 80°25'8.27"W	**Point Name:** Wetland 2, TS-3	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No ✓	WETLAND 2, TS-3
Is the area a potential problem area?	Yes	No ✓	**Photograph No:**
(if needed, explain on reverse.)			5,6

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Scirpus atrovirens	H	OBL	11.			
2.	Aster puniceus	H	OBL	12.			
3.	Agrimonia parviflora	H	FAC	13.			
4.	Poa palustris	H	FACW	14.			
5.	Mentha spicata	H	FACW+	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: NA (inches)	✓ Drainage Patterns in Wetlands
Depth to Free Water in Pit: 6 (inches)	Secondary Indicators:
Depth to Saturated Soil: TO SURFACE (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 671-522.0001 CRDA NO.5

Wetland ID: WETLAND 2, TS-3

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat Poorly Drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		5Y 3/2	NONE	NA	SILT
4-11		5Y 4/2	10YR 3/6	FEW/MEDIUM-COURSE	SILT LOAM
11-16		2.5Y 5/2	10YR 4/4	COMMON/FINE	SILT LOAM

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?

Yes ✓

No _____

USFWS Classification: PEM

Remarks:

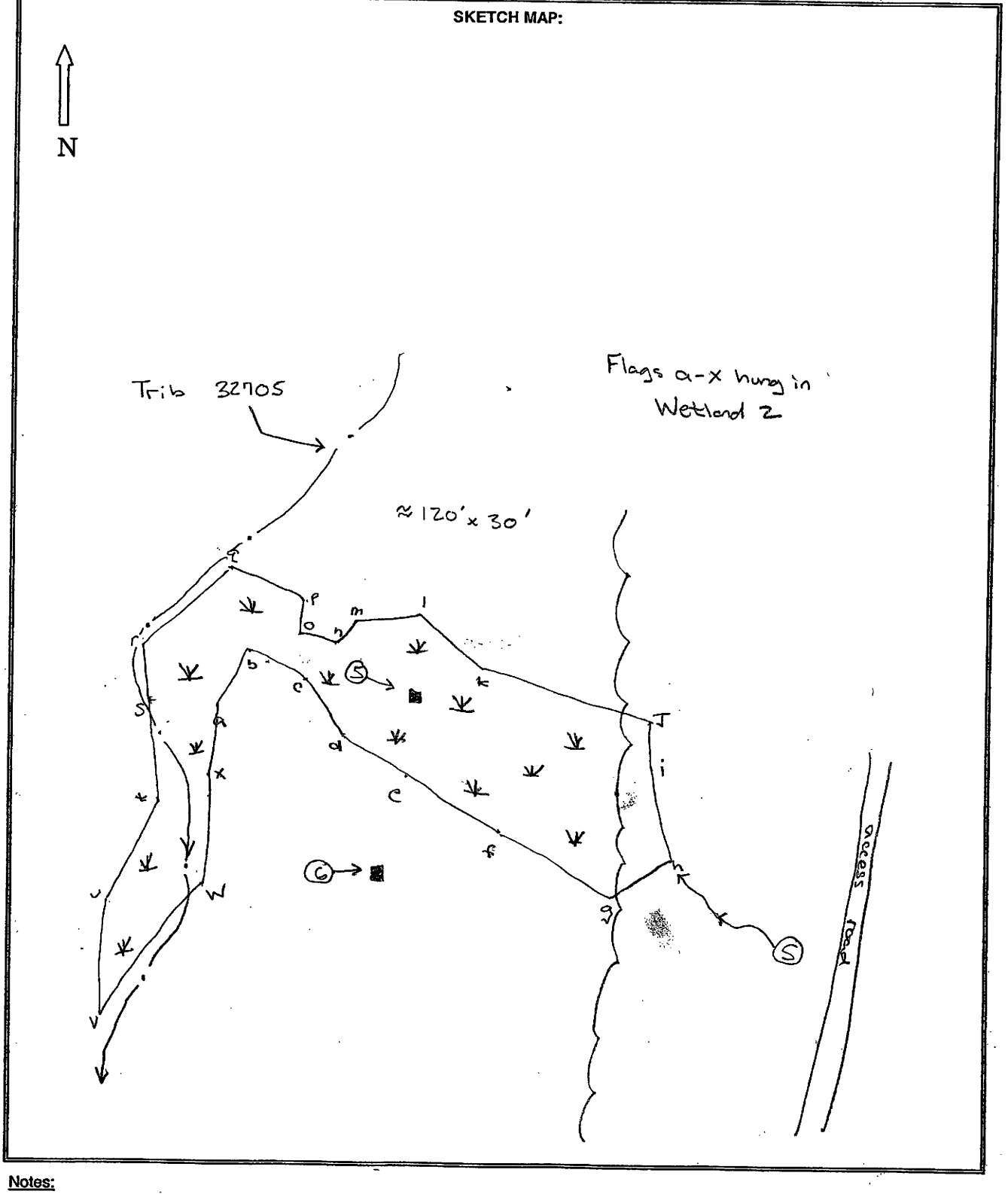
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: WETLAND 2, TS-3

Date: 8/28/07

Acres: 0.109

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-28-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** GREENE
Investigator(s):	MLS, MJN	**GPS Unit:** GEOXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39° 56' 53.68"N 80°25'8.55"W	**Point Name:** Non Wetland, TS-4	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** NON WETLAND, TS-4
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 7, 8
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Verbesina alternifolia	H	FAC	11.			
2.	Poa sp.	H	N.I.	12.			
3.	Amphicarpa bracteata	H	FAC	13.			
4.	Monarda clinopodia	H	UPL	14.			
5.	Glechoma hederacea	H	FACU	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/4 = 50%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: NA (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA NO. 5

Wetland ID: NONWETLAND, TS-4

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR 4/2	NONE	NA	SILT LOAM
4-12		2.5Y 4/3	NONE	NA	CLAYEY SILT LOAM
12-16		2.5Y 5/2	7.5YR 3/4	COMMON/MEDIUM	CLAY LOAM

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-4

Date: 8-28-07

Acres: —

SKETCH MAP:

N

See sketch for Wetland 2, TS-3

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA NO.5		**Date:** 8-28-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** GREENE
Investigator(s):	MLS, MJN	**GPS Unit:** GEOXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°56' 55.40"N 80°25' 7.17"W	**Point Name:** Wetland 3, TS-5	
Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** WETLAND 3, TS-5
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 9, 10
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Carex stricta	H	OBL	11.			
2.	Phalaris arundinacea	H	FACW+	12.			
3.	Aster prenanthoides	H	FAC	13.			
4.	Impatiens capensis	H	FACW	14.			
5.	Lobelia siphilitica	H	FACW+	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: 10 (inches)	____ Sediment Deposits
Depth to Saturated Soil: TO SURFACE (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: WETLAND 3, TS-5

SOILS

Map Unit Name:

(Series and Phase): Newark Silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		2.5Y 4/2	5YR 4/1	COMMON / COURSE	SILT LOAM
6-16		5Y 4/1	NONE	NA	SANDY SILT LOAM

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

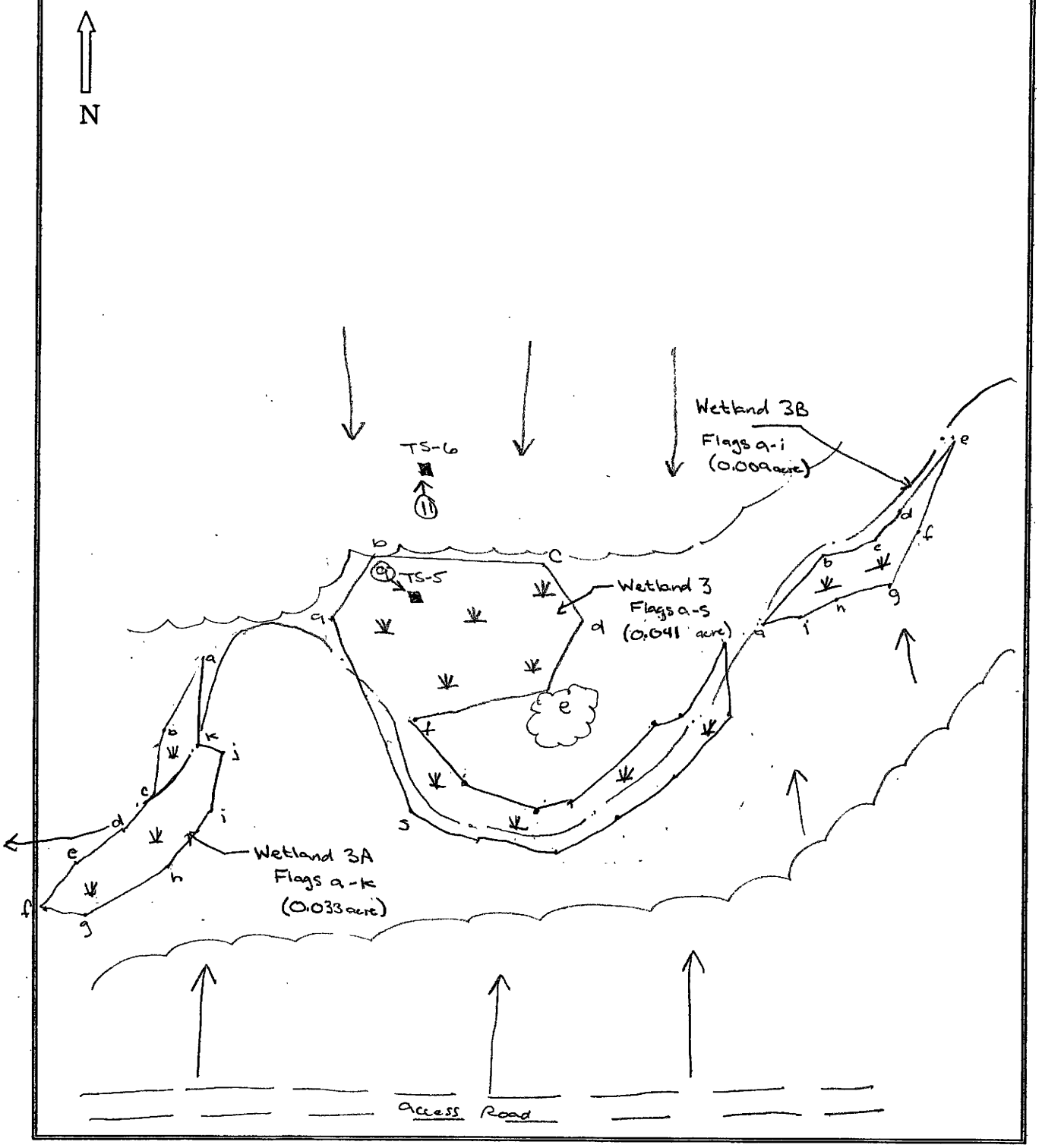
Project/Site: 071-522.0001 CRDA NO. 5

Wetland ID: WETLAND 3, TS-5

Date: 8-28-07

Acres: 0.083

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA NO. 5		**Date:** 8-28-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** GREENE
Investigator(s):	MLS, MJN	**GPS Unit:** GEOXT 7 **Camera:** #	**State:** PA
GPS Coordinates:	39°56'55.53"N 80°25'7.08"W	**Point Name:** Non Wetland, TS-6	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** NON WETLAND, TS-6
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 11, 12
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T/S	FACU-	11.			
2.	Verbsina alternifolia	H	FAC	12.			
3.	Viola sp.	H	N.I.	13.			
4.	Rosa multiflora	H	FACU	14.			
5.	Polygonum virginianum	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/4 = 50%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: NA (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA NO.5

Wetland ID: NON WETLAND, TS-6

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 4/3	NONE	NA	SILT LOAM
3-16		10YR 4/4	NONE	NA	SILT LOAM

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: ——

Remarks:

Project/Site: 071-522.0001

Wetland ID: NONWETLAND, TS-6

Date: 8-28-07

Acres: ——

SKETCH MAP:

N

SEE SKETCH MAP FOR WETLAND 3

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-31-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°56'58.08"N 80°25'4.02"W	**Point Name:** Wetland 4-TS7	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 4-TS 7
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 24
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Carex stricta	H	OBL	11.			
2.	Impatiens sp.	H	FACW	12.			
3.	Monarda clinopodia	H	UPL	13.			
4.	Verbesina alternifolia	H	FAC	14.			
5.	Polygonum sagittatum	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 80%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Wetland 4 - TS 7

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 3/3	none	N/A	Sandy silt loam
3-16		2.5Y 4/1	5YR 4/6	common/fine	Sandy silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?

Yes ✓

No ____

USFWS Classification: PEM

Remarks:

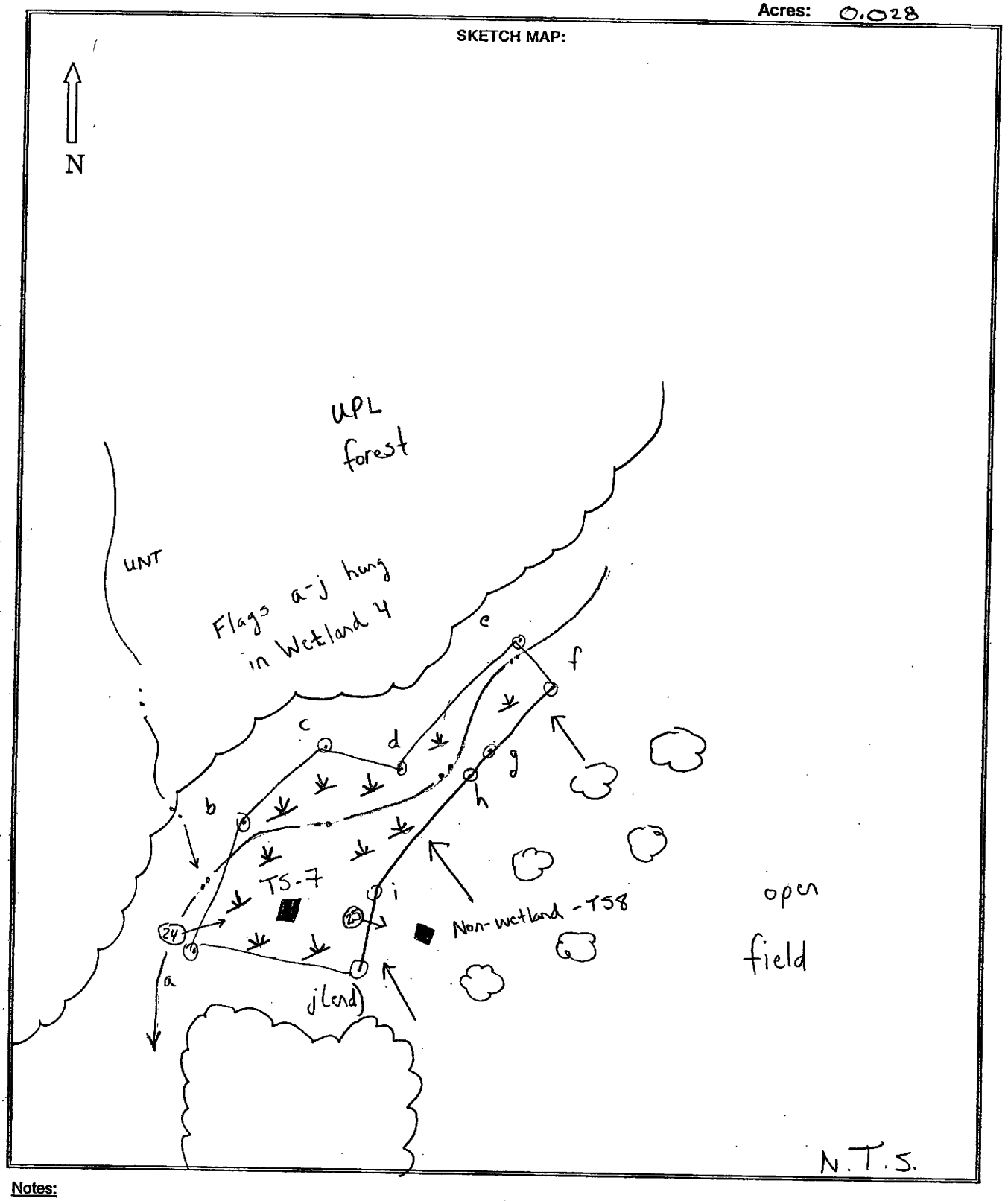
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 4 - TS7

Date: 8-31-07

Acres: 0.028

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 8-31-07
Applicant:	Consol	Parcel/Owner: Consol	County: Greene
Investigator(s):	MLS, LCPS	GPS Unit: GeoXT7 Camera: A	State: PA
GPS Coordinates:	39° 56' 58.08"N 80° 25' 3.74"W	Point Name: Non-Wetland-TS8	
Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Non-wetland-TS8
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	Photograph No: 25

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Juglans nigra	T	FACU	11.			
2.	Prunus serotina	T	FACU	12.			
3.	Acer saccharum	T	FACU-	13.			
4.	Rosa multiflora	S	FACU	14.			
5.	Verbesina alternifolia	H	FAC	15.			
6.	Monarda clinopodia	H	UPL	16.			
7.	Aster sp.	H	N.I.	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/6 = 17%

Remarks:

HYDROLOGY

- ____ Recorded Data (Describe in Remarks)
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland - TS8

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No _____

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 5/3	None	N/A	silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland- TS 8

Date: 8-31-07

Acres: —

SKETCH MAP:

N

see sketch for
Wetland 4-TS 7 for
Non-wetland- TS 8
location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9-4-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT **Camera:** A	**State:** PA
GPS Coordinates:	39°56'59.15"N 80°25'2.79"W	**Point Name:** Wetland 5, TS-9	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 5, TS-9
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 1
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Rosa multiflora	S	FACU	11.			
2.	Phalaris arundinacea	H	FACW+	12.			
3.	Impatiens capensis	H	FACW	13.			
4.	Polygonum sagittatum	H	OBL	14.			
5.	Polygonum hydropiperoides	H	OBL	15.			
6.	Rudbeckia laciniata	H	FACW	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/6 = 83%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: 15 (inches)

Depth to Saturated Soil: to surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
✓ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators:
_____ Oxidized Root Channels in Upper 12 Inches
_____ Water Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 5 TS-9

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (NW)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		2.5Y 4/2	5YR 5/8	few/fine to medium	organic loamy silt
6-16		10YR 4/2	5YR 5/8	few/fine	gravelly loamy silt

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?

Yes ✓

No _____

USFWS Classification: PEM

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

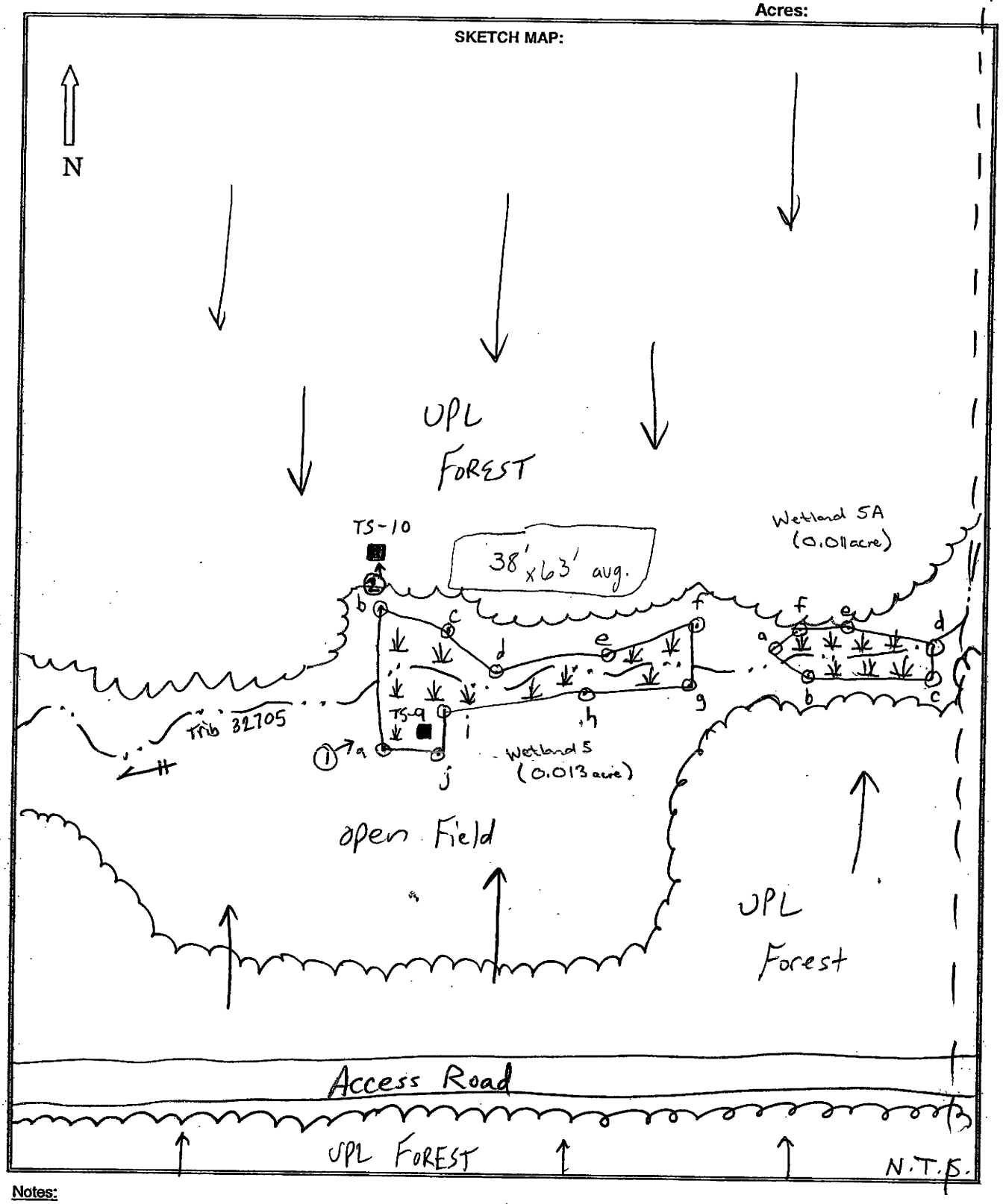
Wetland ID: Wetland 5, TS-9

Date: 9-4-07

Acres:

Matchlin A

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

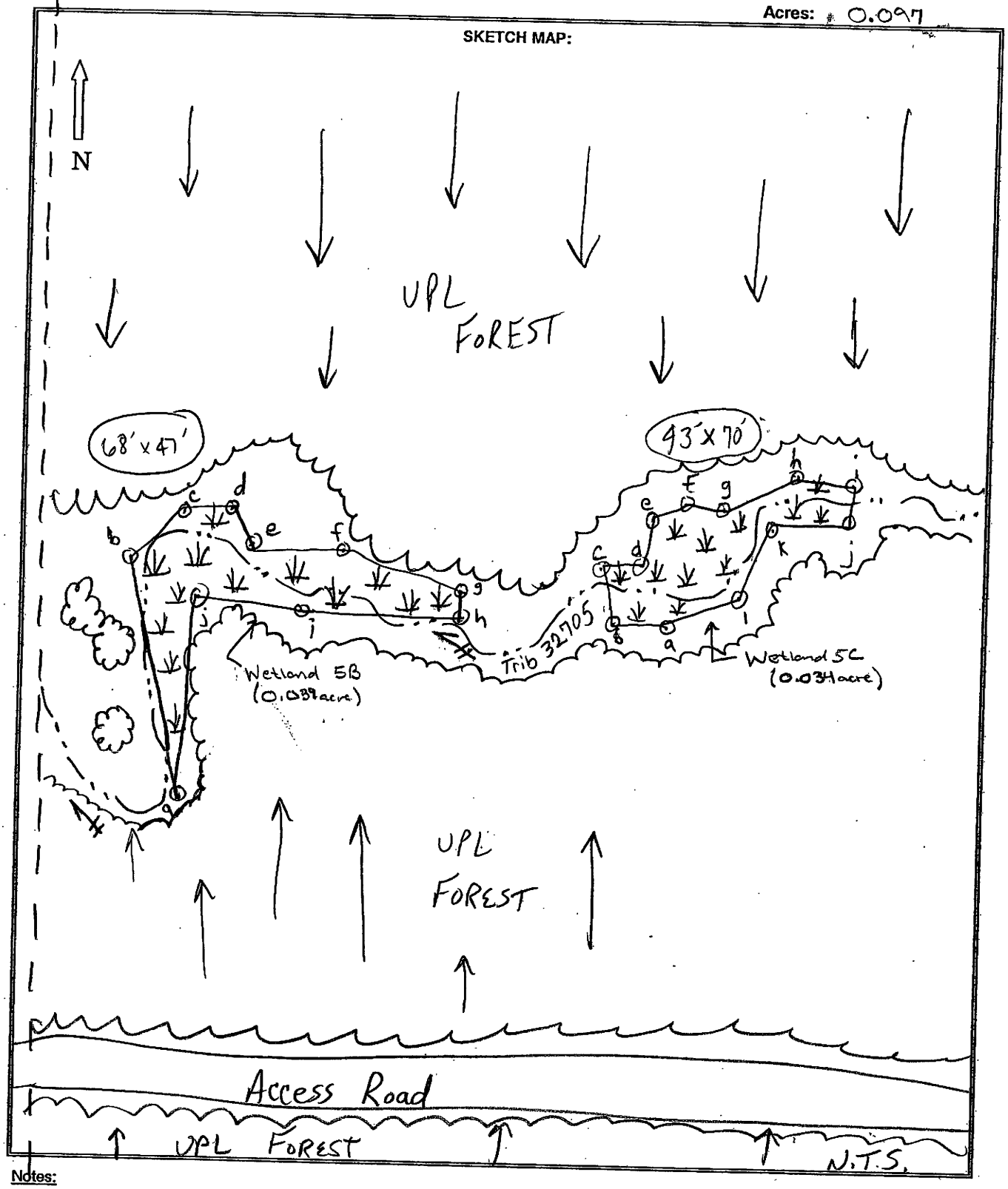
Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Wetland 5, TS-9

Date: 9-4-07

Acres: 0.097

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071522.0001 CRDA No. 5		Date: 9-4-07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	LCPS, JWC	GPS Unit: GeoXT 7 Camera: A	State: PA
GPS Coordinates:	39° 56' 59.30"N 80° 25' 29.8"W	Point Name: Non-wetland, TS-10	
Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Non-wetland, TS-10
Is the area a potential problem area?	Yes	No ✓	Photograph No:
(if needed, explain on reverse.)			2

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Tsuga canadensis	T	FACU	11.			
2.	Galium aparine	H	FACU	12.			
3.	Sedum ternatum	H	UPL	13.			
4.	Glechoma hederacea	H	FACU	14.			
5.	Eupatorium rugosum	H	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 0/5 = 0%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: > 16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: > 16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Non-wetland TS-10

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10 YR 5/4	NA	None	Silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓
Wetland Hydrology Present?	Yes _____	No ✓
Hydric Soils Present?	Yes _____	No ✓

Is this Sampling Point Within a Wetland?

Yes _____

No ✓

USFWS Classification: ——

Remarks:

Project/Site: 071522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS-10

Date: 9-4-07
Acres: ——

SKETCH MAP:

N

See sketch
for Wetland 5, TS-9

Notes:
1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	671522.0001 CRDA No. 5		Date: 9-4-07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	LCPS, JWC	GPS Unit: GeoXT 7 Camera: A	State: PA
GPS Coordinates:	39° 57' 2.09" N 80° 24' 53.59" W	Point Name: Wetland 6, TS-11	
Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 6, TS-11
Is the area a potential problem area?	Yes	No ✓	Photograph No:
(if needed, explain on reverse.)			3

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Lindera benzoin	S	FACW-	11.			
2.	Impatiens capensis	H	FACW	12.			
3.	Pilea pumila	H	FACW	13.			
4.	Aster prenanthoides	H	FAC	14.			
5.	Leersia virginica	H	FACW	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
___ Stream, Lake, or Tide Gauge	Primary Indicators:
___ Aerial Photographs	___ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	___ Water Marks
Depth of Surface Water: NA (inches)	___ Drift Lines
Depth to Free Water in Pit: 12 (inches)	___ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	___ Oxidized Root Channels in Upper 12 Inches
	___ Water Stained Leaves
	___ Local Soil Survey Data
	___ FAC-Neutral Test
	___ Others (Explain in Remarks)

Remarks:

Project/Site: 671522.0001 CRDA No. 5
Wetland ID: Wetland 6, TS-11

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams (DtF) 25-50% Drainage Class: Well drained / moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs
Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-7		5Y 4/2	7.5YR 4/6	Few / coarse	Sandy silt loam
7-16		5Y 4/1	7.5YR 4/6	Few / coarse	Clayey silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland? Yes ✓ No ____

USFWS Classification: PEM

Remarks:

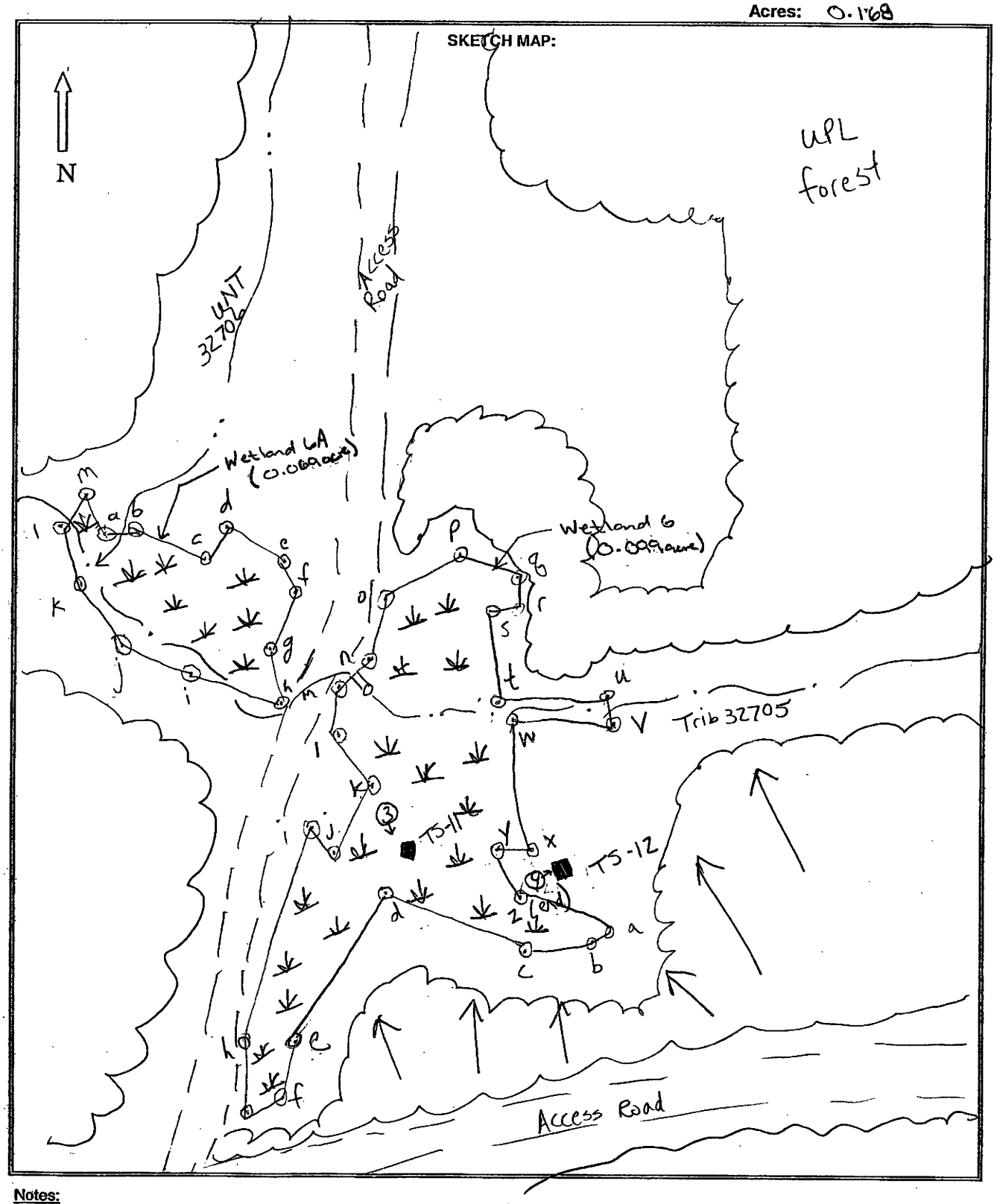
Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Wetland 6, TS-11

Date: 9-4-07

Acres: 0.168

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).

2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No.5		**Date:** 9-4-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'2.23"N 80°24'53.34"W	**Point Name:** Non-wetland, TS-12	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-wetland, TS-12
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 4
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Prunus serotina	T	FACU	12.			
3.	Lindera benzoin	S	FACW-	13.			
4.	Quercus velutina	S	UPL	14.			
5.	Eupatorium rugosum	H	FACU-	15.			
6.	Sedum ternatum	H	UPL	16.			
7.	Polystichum acrostichoides	H	FACU-	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/7 = 14%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: N/A (inches)	____ Sediment Deposits
Depth to Saturated Soil: N/A (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-wetland TS-12

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No _____

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 5/4	none	N/A	silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland, TS-12

Date: 9-4-07

Acres: —

SKETCH MAP:

N

see sketch for
Wetland 6, TS-11
for TS-12 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9-5-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'3.72"N 80° 24' 50.55"W	**Point Name:** Wetland 7 - TS-13	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 7, TS-13
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	**Photograph No:** 5

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Lindera benzoin	S	FACW-	11.			
2.	Carex stricta	H	OBL	12.			
3.	Impatiens capensis	H	FACW	13.			
4.	Eupatorium rugosum	H	FACU-	14.			
5.	Pilea pumila	H	FACW	15.			
6.	Acorus calamus	H	OBL	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/6 = 83%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: 0.5-1 (inches)	____ Drift Lines
Depth to Free Water in Pit: 16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: 8-16 (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 7, TS-13

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 3/2	none	N/A	loamy silt
3-8		10YR 5/2	5YR 4/6	common/medium	loamy silt
8-16		10YR 5/2	none	N/A	gravelly silt

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

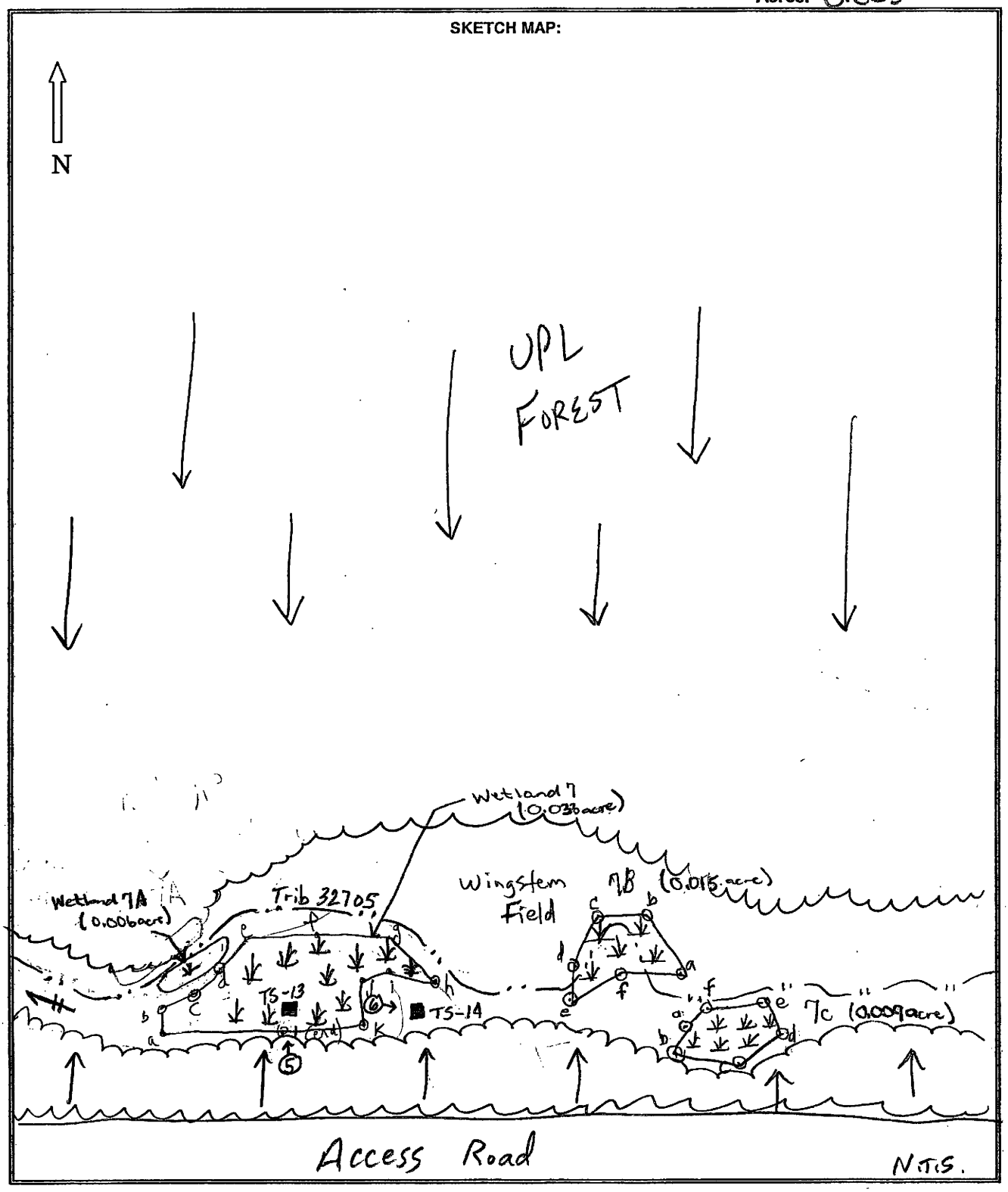
Project/Site: 071-522,0001 CRDA No.5

Wetland ID: Wetland 7, TS-13

Date: 9-5-07

Acres: 0.063

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071522.0001 CRDA No. 5		**Date:** 9-5-07
Applicant:	CONSOL	**Parcel/Owner:** CONSOL	**County:** Greene
Investigator(s):	LCPS JWC	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39° 57' 3.79"N 80° 24' 50.28"W	**Point Name:** Non-wetland, TS-14	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland, TS-14
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 6
Is the area a potential problem area?	Yes	No ✓	
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Carpinus caroliniana	S	FAC	13.			
4.	Polystichum acrostichoides	H	FACU-	14.			
5.	Sedum ternatum	H	UPL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-14

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (NW)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR 4/3	NA	None	Silt loam
4-16		10YR 5/3	5YR 4/6 10R 3/6	Common / Fine to medium Few / Coarse	Silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-14

Date: 9-5-07

Acres: —

SKETCH MAP:

N

See sketch for
Wetland 7, TS-13.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071522.0001 CRDA No. 5		**Date:** 9-5-07
Applicant:	CONSOL	**Parcel/Owner:** CONSOL	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'5.54"N 80°24'47.83"W	**Point Name:** Wetland 8 TS-15	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 8, TS-15
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 7
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Lindera benzoin	S	FACW-	11.			
2.	Rosa multiflora	S	FACU	12.			
3.	Sambucus canadensis	S	FACW-	13.			
4.	Impatiens capensis	H	FACW	14.			
5.	Aster prenanthoides	H	FAC	15.			
6.	Onoclea sensibilis	H	FACW	16.			
7.	Carex stricta	H	OBL	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 6/7 = 86%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: NA (inches)	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: 15 (inches)	Secondary Indicators:
Depth to Saturated Soil: To Surface (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071522.0001 CRDA No. 5
Wetland ID: Wetland 8, TS-15

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10 YR 4/2	7.5 YR 4/6	Few/Fine	Clayey silt loam
5-16		5Y 4/1	5YR 4/6	Few/Coarse	Clay loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

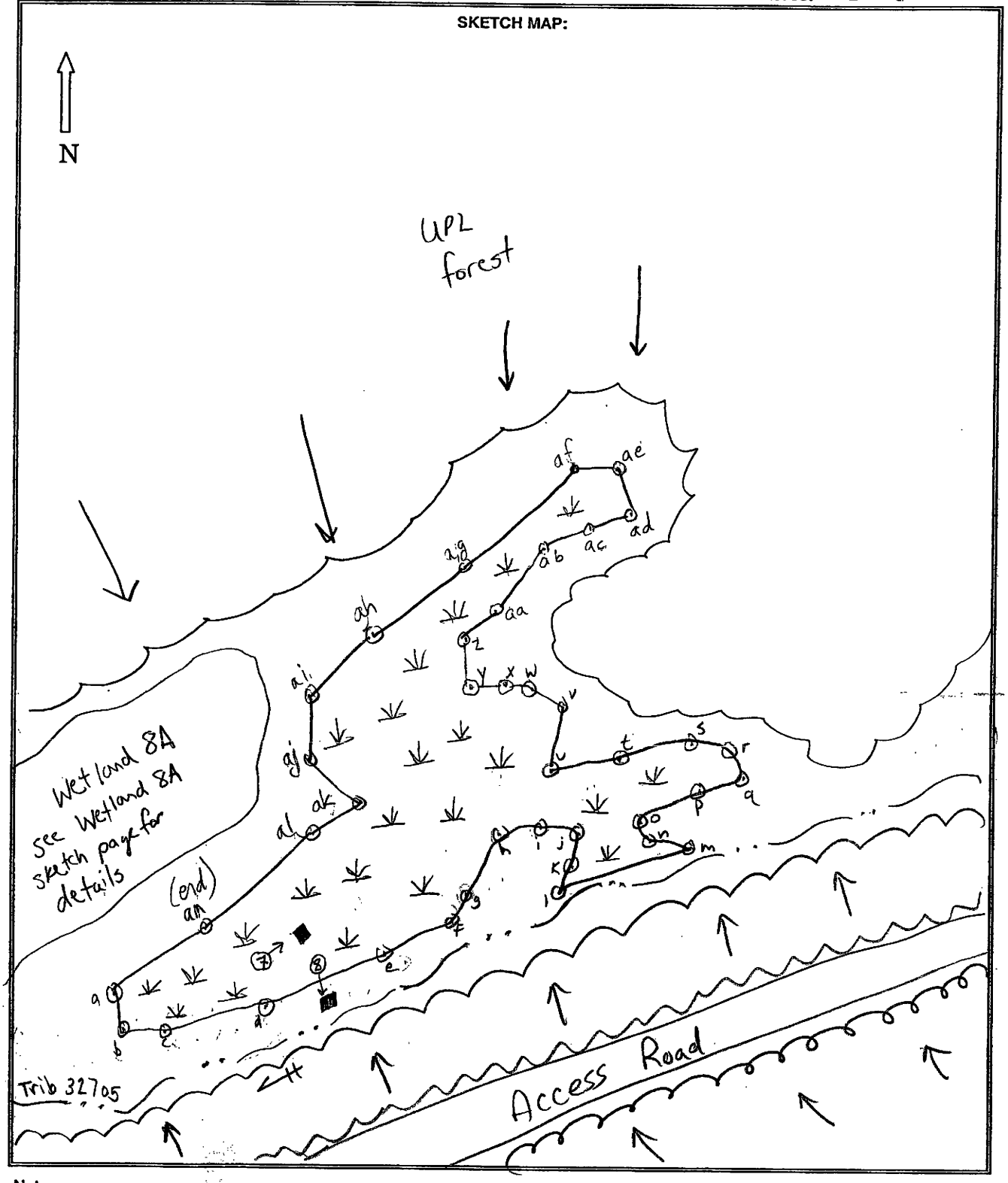
Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Wetland 8, TS-15

Date: 9-5-07

Acres: 0.288

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071522.0001 CRDA No. 5		**Date:** 9-5-07
Applicant:	CONSOL	**Parcel/Owner:** CONSOL	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'5.26"N 80°24'47.92"W	**Point Name:** Non-wetland, TS-16	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland, TS-16
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 8
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Carpinus caroliniana	S	FAC	13.			
4.	Rosa multiflora	S	FACU	14.			
5.	Polystichum acrostichoides	H	FACU-	15.			
6.	Viola sp	H	N.I.	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: > 16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: > 16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-16

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (NW)

Drainage Class: Somewhat poorly drained

(Taxonomy Subgroup): Aeric Fluvaquents

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 4/3	NA	None	Silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-16

Date: 9-5-07

Acres: —

SKETCH MAP:

N

See sketch for Wetland 8, TS-15.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9-6-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	LCPS JWC	GPS Unit: GeoXT7 Camera: A	State: PA
GPS Coordinates:	39° 57' 5.77"N 80° 24' 48.85"W	Point Name: Wetland 8A-TS 17	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Wetland 8A-TS 17
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	Photograph No: 11

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Alnus glutinosa	T	FACW-	11.			
2.	Ulmus americana	T	FACW-	12.			
3.	Acer saccharum	T	FACU-	13.			
4.	Sambucus canadensis	S	FACW-	14.			
5.	Impatiens capensis	H	FACW	15.			
6.	Aster prenanthoides	H	FAC	16.			
7.	Pilea pumila	H	FACW	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 6/7 = 86%

Remarks: Buttressed tree roots observed.

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: 0-0.5 (inches)	____ Drift Lines
Depth to Free Water in Pit: 14 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 8A-TS 17

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents
Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 3/2	none	N/A	loamy silt
3-14		10Y 4/1	5YR 4/6	common/fine to medium	clayey silt loam
14-16		5Y 3/1	none	N/A	clayey silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PFO/PEM

Remarks:

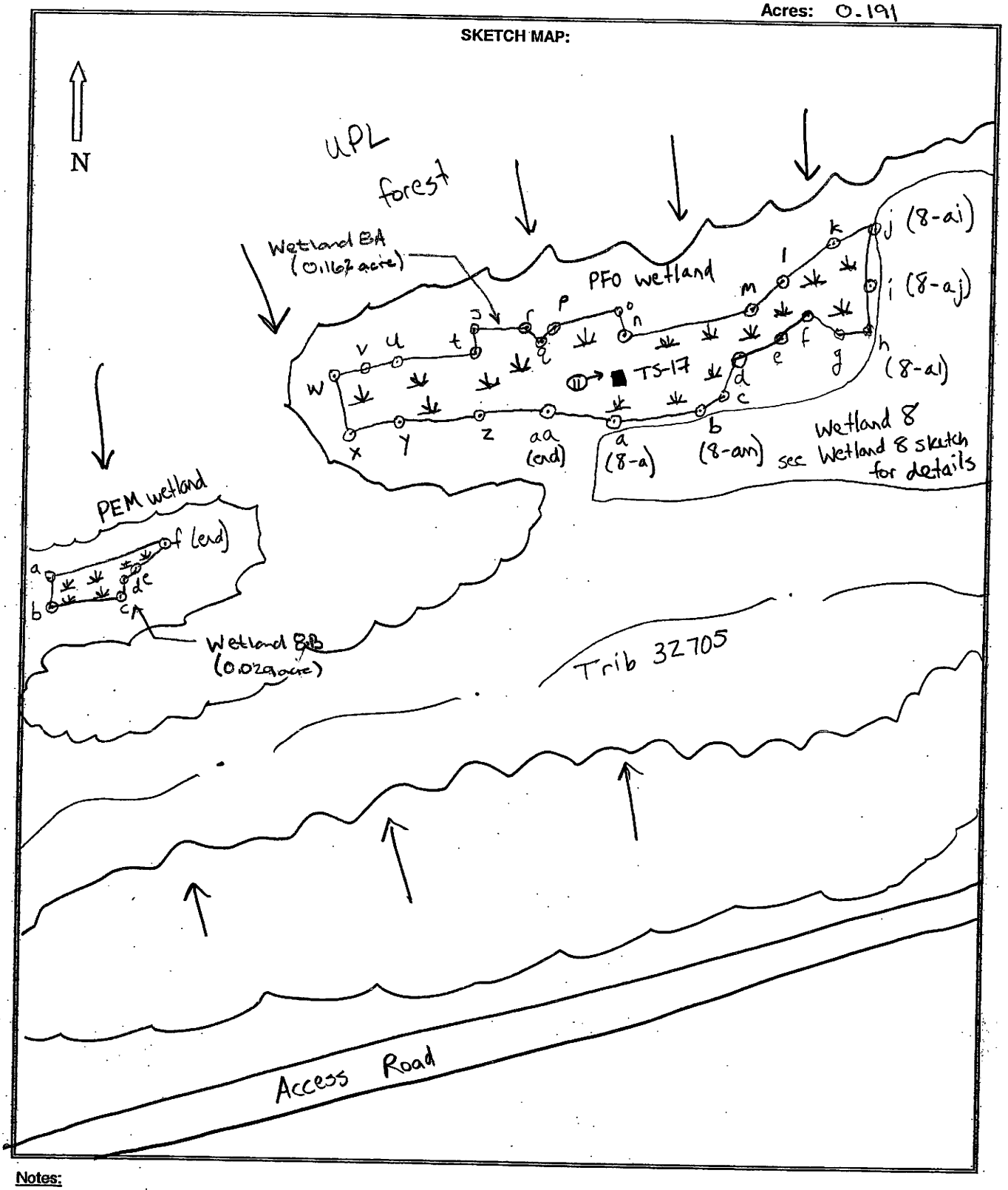
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 8A, TS-17

Date: 9-6-07

Acres: 0.191

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071522.0001 CRDA M.5		**Date:** 9-6-07
Applicant:	CONSOL	**Parcel/Owner:** CONSOL	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT **Camera:** A	**State:** PA
GPS Coordinates:	39° 57'8.90"N 80°24'38.52"W	**Point Name:** Wetland 9, TS-18	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 9, TS-18
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	**Photograph No:** 9

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Polygonum sagittatum	H	OBL	11.			
2.	Impatiens capensis	H	FACW	12.			
3.	Aster prenanthoides	H	FAC	13.			
4.	Amphicarpa bracteata	H	FAC	14.			
5.	Carex Frankii	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: Wetland hydrology present.

Project/Site: 071522.0001 CRDA No. 5
Wetland ID: Wetland 9, T5-18

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-7		5Y 4/2	7.5YR 4/6	Common/Fine	Silt loam
7-16		5Y 4/1	7.5YR 5/8	Common/Medium	Clayey Silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks: ORC's observed at 7-16 inches.
Observed soil meets the criteria to be hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

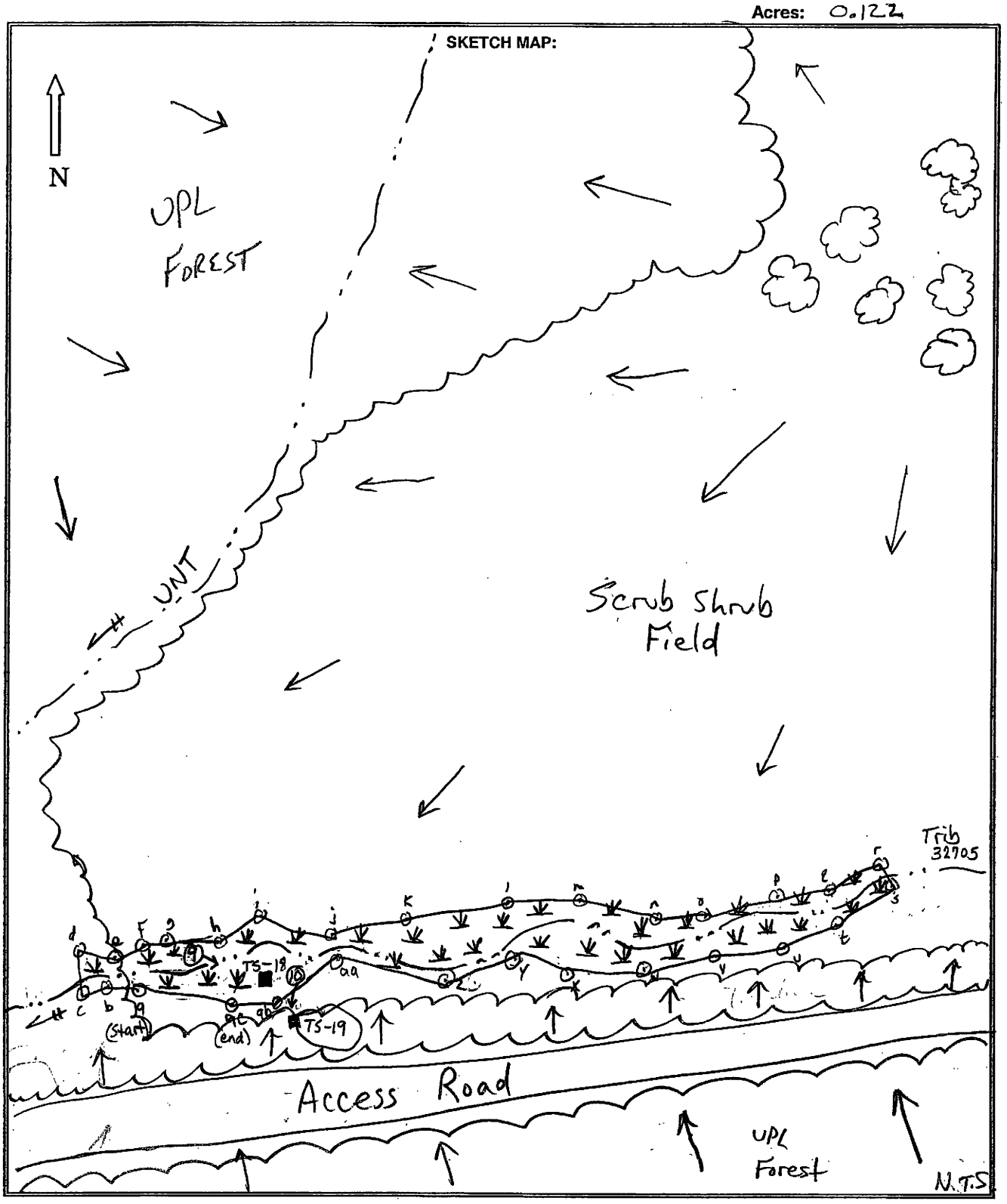
Project/Site: 071 522.0001 CRDA No. 5

Wetland ID: Wetland 9, TS-18

Date: 9-6-07

Acres: 0.122

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071522.0001 CRDA No. 5		**Date:** 9-6-07
Applicant:	CONSOL	**Parcel/Owner:** CONSOL	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'8.77"N 80°24'38.26"W	**Point Name:** Non-wetland, TS-19	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland, TS-19
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 10
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Carya ovata	T	FACU-	11.			
2.	Ulmus americana	T	FACW-	12.			
3.	Carpinus caroliniana	T/S	FAC	13.			
4.	Amphicarpa bracteata	H	FAC	14.			
5.	Aster prenanthoides	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 80%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: > 16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: > 16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No hydrology indicators observed.

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-19

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams (DtD 15-25%

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Moderately well drained/ Well drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 5/4	5YR 5/8	Few / Fine	Silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks: Observed soil does not meet criteria to be considered hydric.

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?		✓
Hydric Soils Present?		✓

Is this Sampling Point Within a Wetland?

Yes _____

No ✓

USFWS Classification: _____

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-19

Date: 9-6-07

Acres: —

SKETCH MAP:

N

See sketch map
for wetland 9, TS-18.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No.5		**Date:** 9-7-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'11.79"N 80°24'31.74"W	**Point Name:** Wetland 10, TS-20	

Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:** Wetland 10, TS-20
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	**Photograph No:** 14
Is the area a potential problem area?	Yes ____	No ✓	
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Salix nigra	S	FACW+	11.			
2.	Rosa multiflora	S	FACU	12.			
3.	Glyceria striata	H	OBL	13.			
4.	Carex frankii	H	OBL	14.			
5.	Leersia oryzoides	H	OBL	15.			
6.	Eupatorium perfoliatum	H	FACW+	16.			
7.	Amphicarpa bracteata	H	FAC	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 6/7 = 86%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: N/A (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
✓ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 10, TS-20

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (NN)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-8		2.5Y 4/1	1) 2.5YR 3/6 2) 5YR 4/6	1) abundant/coarse 2) abundant/coarse	silt loam
8-16		10Y 3/1	none	N/A	silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

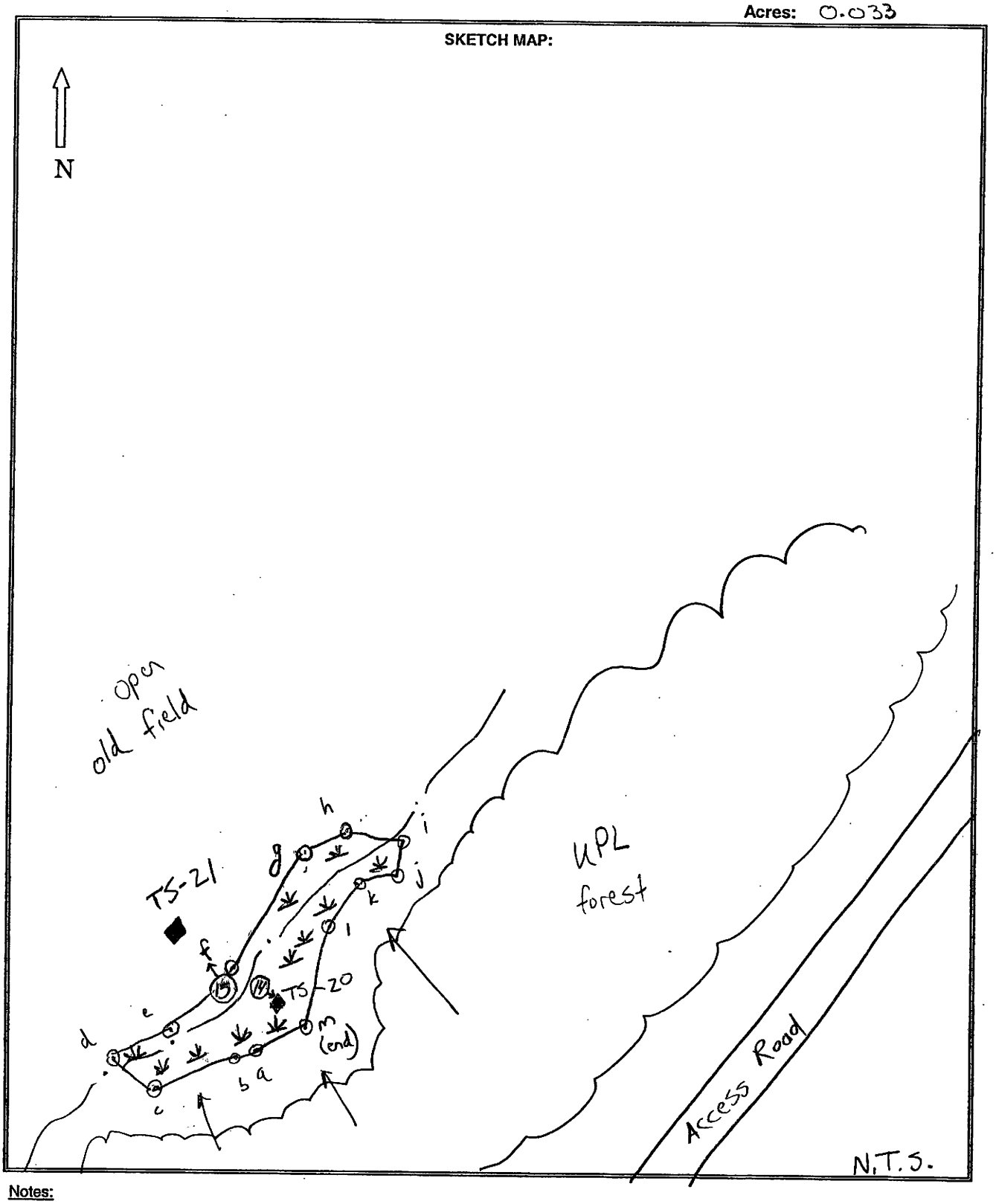
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 10, TS-20

Date: 9-7-07

Acres: 0.033

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9-7-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'11.95"N 80°24'31.90"W	**Point Name:** Non-Wetland, TS-21	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-wetland, TS-21
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 15
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Rosa multiflora	S	FACU	11.			
2.	Dactylis glomerata	H	FACU	12.			
3.	Trifolium pratense	H	FACU-	13.			
4.	Ambrosia artemisiifolia	H	FACU	14.			
5.	Erigeron annuus	H	FACU	15.			
6.	Daucus carota	H	UPL	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 0/6 = 0%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: N/A (inches)	____ Sediment Deposits
Depth to Saturated Soil: N/A (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland, TS-21

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

Drainage Class: Somewhat poorly drained

(Taxonomy Subgroup): Aeric Fluvaquents

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 4/3	7.5YR 5/8	few/medium	silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland, TS-21

Date: 9-7-07

Acres: ——

SKETCH MAP:

N

see sketch for Wetland 10, TS-20

for TS-21 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9-7-07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	KPS, JWC	GPS Unit: Geo XT 7 Camera: A	State: PA
GPS Coordinates:	39° 57' 15.01" N 80° 24' 25.11" W	Point Name: Wetland 11, TS-22	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 11, TS-22
Is the area a potential problem area?	Yes	No ✓	Photograph No:
(if needed, explain on reverse.)			16

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Mentha spicata	H	FACW+	11.			
2.	Carex Frankii	H	OBL	12.			
3.	Eupatorium perfoliatum	H	FACW+	13.			
4.	Polygonum sagittatum	H	OBL	14.			
5.	Acorus calamus	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: 5 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	✓ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 11, TS-22

SOILS

Map Unit Name:
(Series and Phase): Newark Silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		2.5Y 4/2	7.5 YR 4/6	Common/Fine	Silt loam
5-16		5Y 3/1	5 YR 4/6	Few/Medium	Clayey silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks: ORC's observed at 5-16".

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

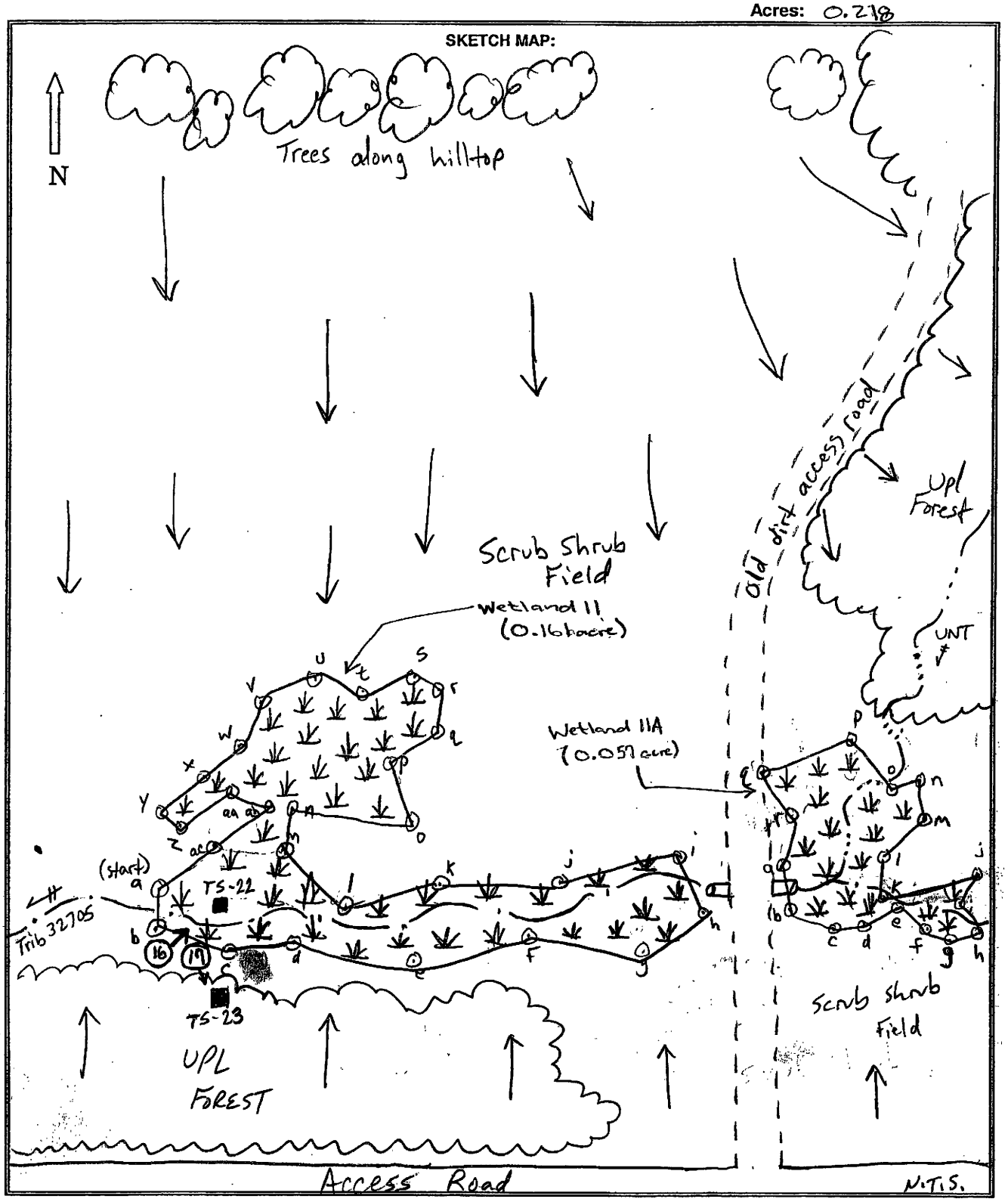
Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Wetland 11, TS-22

Date: 9-7-07

Acres: 0.218

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9-7-07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	LCPS, JWC	GPS Unit: GeoXT7 Camera: A	State: PA
GPS Coordinates:	39°57'14.81" N 80°24'24.88" W	Point Name: Non-wetland, TS-23	
Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Non-wetland, TS-23
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	Photograph No: 17

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Prunus serotina	T	FACU	11.			
2.	Rosa multiflora	S	FACU	12.			
3.	Rubus allegheniensis	S	FACU-	13.			
4.	Dactylis glomerata	H	FACU	14.			
5.	Holcus lanatus	H	FACU	15.			
6.	Arctium minus	H	UPL	16.			
7.	Aster lateriflorus	H	FACW-	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/7 = 14%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No wetland hydrology indicators observed.

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland, TS-23

SOILS

Map Unit Name:

(Series and Phase): Newark Silt loam 0-3% (NrW)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10YR 5/3	NA	None	Silt loam
5-16		10YR 5/4	10YR 2/1	Few / Fine	Clayey silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks: Soil does not meet criteria to be considered hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: ——

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland, TS-23

Date: 9-7-07

Acres: —

SKETCH MAP:

N

See sketch map
for Wetland 11, TS-22

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9-12-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK, LCPS	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39° 57' 15.63"N 80° 24' 20.39"W	**Point Name:** Wetland 12-TS24	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 12-TS24
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 9
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Salix nigra	T	FACW+	11.			
2.	Impatiens Capensis	H	FACW	12.			
3.	Leersia oryzoides	H	OBL	13.			
4.	Acorus calamus	H	OBL	14.			
5.	Eupatorium perfoliatum	H	FACW+	15.			
6.	Polygonum sagittatum	H	OBL	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 6/6 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 14 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 12 TS-24

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10Y 2.5/1	ORC's	NA	Loamy Silt
3-13		10Y 3/1	None	NA	Clayey Silt Loam
13-16		10YR 3/1	None	NA	Clayey Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

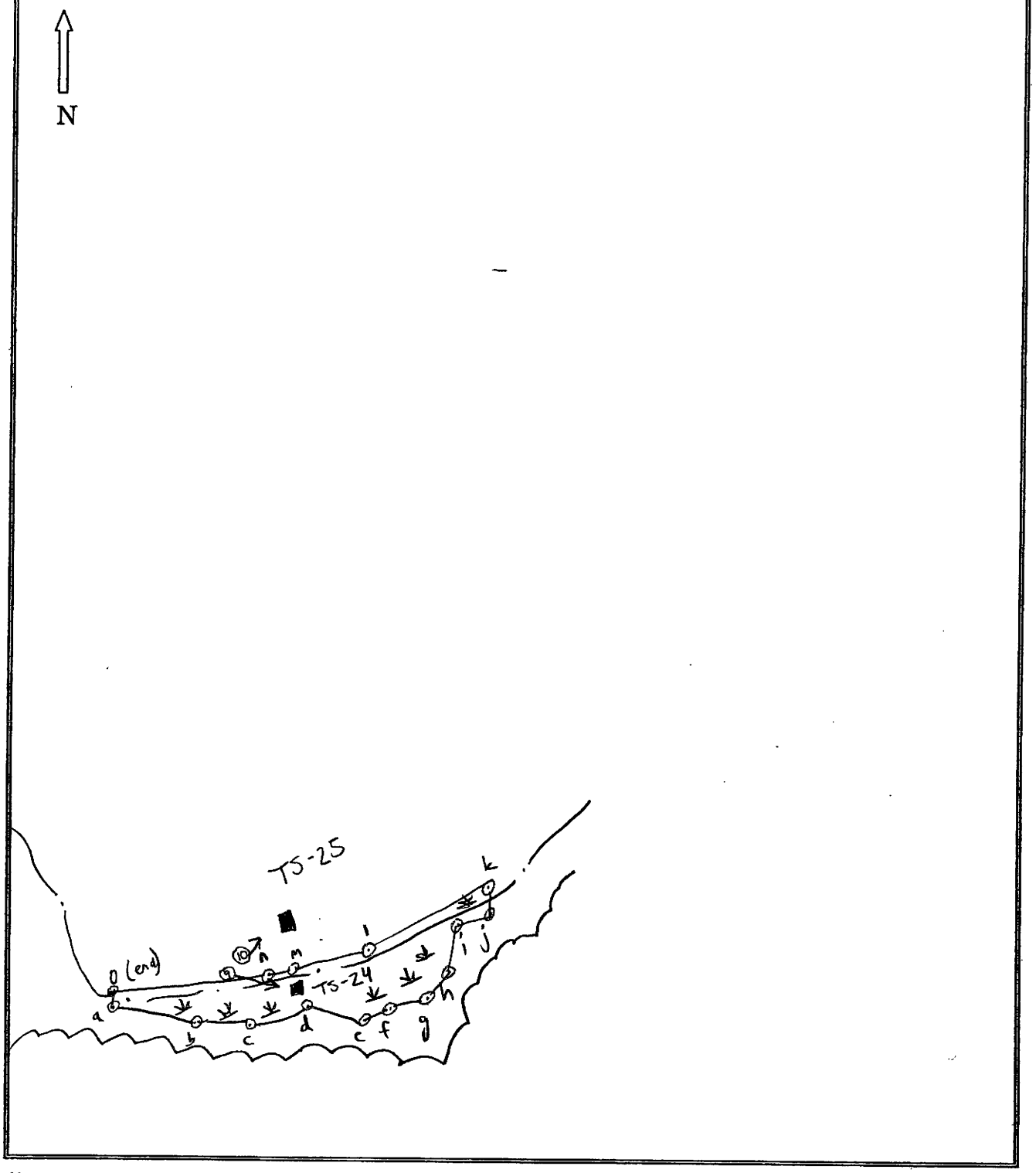
Project/Site: 071-522.0001 / CRPA No. 5

Wetland ID: Wetland 12 - TS 24

Date: 9-11-07

Acres: 0.053

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-572.0001 CRDA No. 5		**Date:** 9-11-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK, LCPS	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'15.79"N 80°24'20.49"W	**Point Name:** Non-Wetland, TS-25	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland-TS 25
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 10
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Poa pratensis	H	FACU	11.			
2.	Aster sp.	H	N.I.	12.			
3.	Arctium minus	H	UPL	13.			
4.	Glechoma hederacea	H	FACU	14.			
5.	Mentha spicata	H	FACW+	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1/) 1/4 = 25%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: — (inches)	____ Sediment Deposits
Depth to Saturated Soil: — (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS-25

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 4/3	none	N/A	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No	
Hydrophytic Vegetation Present?	_____	✓	
Wetland Hydrology Present?	_____	✓	
Hydric Soils Present?	_____	✓	

Is this Sampling Point Within a Wetland?
Yes _____
No ✓
USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-wetland, TS-25

Date: 9-12-07

Acres: —

SKETCH MAP:

N

please refer to Wetland 12, TS-24 for Non-Wetland, TS-25 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 / CRDA No. 5		**Date:** 9-11-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	LCPS, PAK	**GPS Unit:** 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'13.47"N 80°24'19.99"W	**Point Name:** Wetland 13 - TS 26	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 13-TS 26
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	**Photograph No:** 1
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Carex frankii	H	OBL	11.			
2.	Glyceria striata	H	OBL	12.			
3.	Leersia oryzoides	H	OBL	13.			
4.	Impatiens capensis	H	FACW	14.			
5.	Polygonum persicaria	H	FACW	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: — (inches)	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: 15 (inches)	Secondary Indicators:
Depth to Saturated Soil: 0 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	X FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: Adjacent to small pond

Project/Site: 071-522:0001/ CRDA No. 5
Wetland ID: Wetland 13 - TS 26

SOILS

Map Unit Name:
(Series and Phase): Dermont-Colloka silt loams (DtD) 15-25%
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Moderately Well Drained/ Well Drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-7		10YR 5/3	10YR 6/8	Few/Fine	Gravelly Silt Loam
7-16		5Y 4/2	7.5YR 5/6	Few/Fine	Loamy Silt
			N 2.5/0	Few/Coarse	

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soil
____	Aquic Moisture Regimes	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No ____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No ____	Yes X
Hydric Soils Present?	Yes X	No ____	No ____
			USFWS Classification: PEM

Remarks:

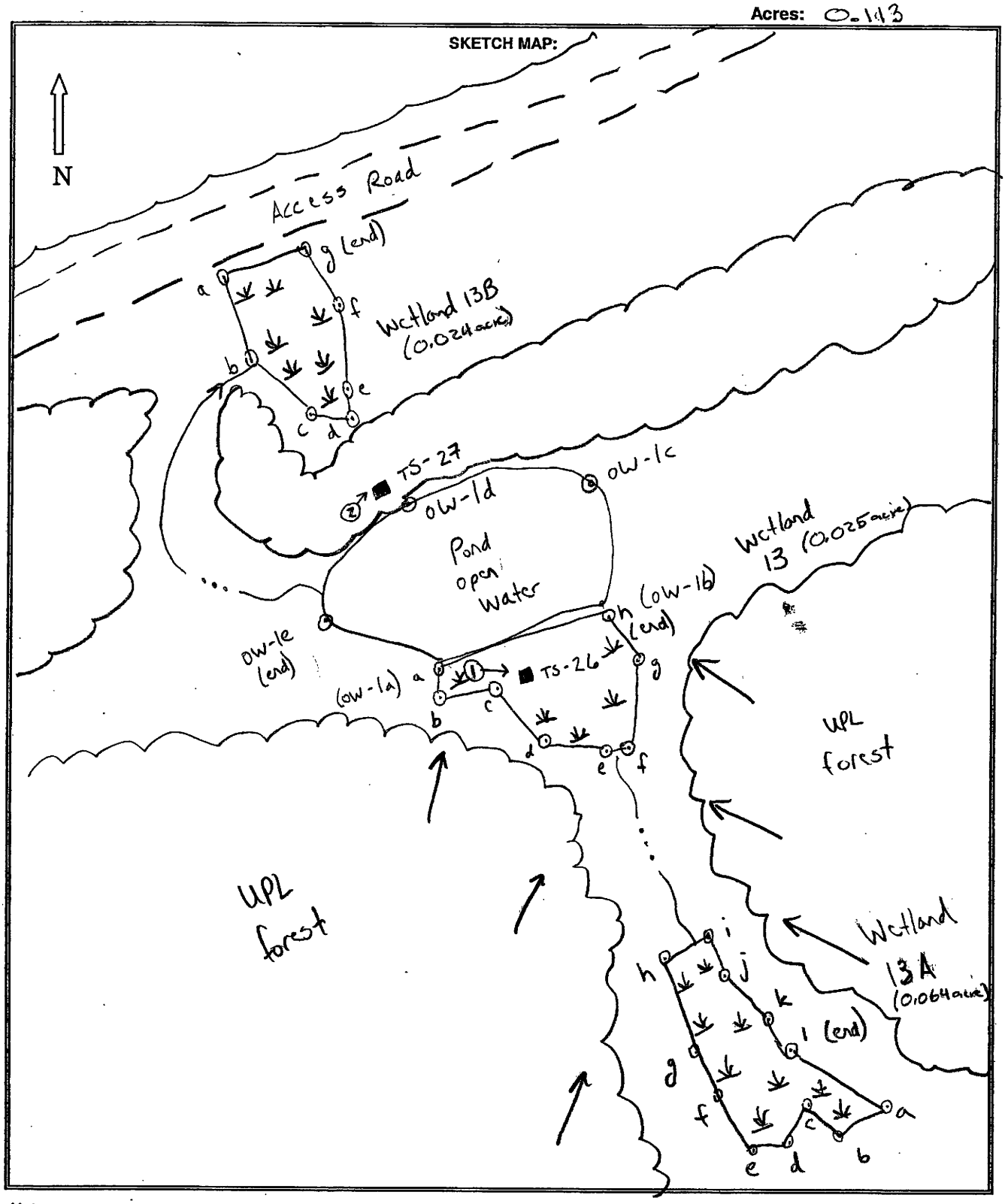
Project/Site: 071-522.0001 Bailey CRDA No. 5

Wetland ID: Wetland 13-TS 26

Date: 9-11-07

Acres: 0.113

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 / CRDA No. 5		Date: 9-11-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	LCPS, PAK	GPS Unit: 7 / Camera: A	State: PA
GPS Coordinates:	39° 57' 14.00" N 80° 24' 20.57" W	Point Name: Non-wetland TS-27	
Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Non-wetland TS-27
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	Photograph No: 2

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Robinia pseudo-acacia	T	FACU-	11.			
2.	Digitaria sanguinalis	H	FACU-	12.			
3.	Polygonum persicaria	H	FACW	13.			
4.	Echinochloa crusgalli	H	FACU	14.			
5.	Rubus allegheniensis	S	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 1/5 = 20%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 / CROA No. 5
Wetland ID: Non-Wetland TS-27

SOILS

Map Unit Name: (DtF)
(Series and Phase): Dormont-Culleoka Silt loams 25-50%
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well Drained / Moderately Well Drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-1		10YR 4/4	None	NA	Silt Loam
1-16		10YR 5/4	None	NA	Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-wetland, TS-27

Date: 9-12-07

Acres: ——

SKETCH MAP:

N

please see wetland 13-TS-26 for Non-wetland, TS-27 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 / CRDA No. 5		**Date:** 9-12-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	LCPS, PAK **GPS Unit:** 7	**Camera:** A	**State:** PA
GPS Coordinates:	39°57'17.44"N 80°24'14.39"W	**Point Name:** Wetland 14- TS 28	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No X	Wetland 14- TS 28
Is the area a potential problem area?	Yes	No X	**Photograph No:**
(if needed, explain on reverse.)			3

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Leersia oryzoides	H	OBL	12.			
3.	Glyceria striata	H	OBL	13.			
4.	Aster lateriflorus	H	FACW-	14.			
5.	Aster prenanthoides	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: — (inches)	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: 0 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	X FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001/ CRDA No. 5
Wetland ID: Wetland 14 - TS 28

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams (DtD) 15-25%
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Moderately well Drained/ Well Drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		10YR 4/2	7.5YR 5/8	Few/Medium	Silt Loam
6-16		5Y 4/1	None	NA	Clayey Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

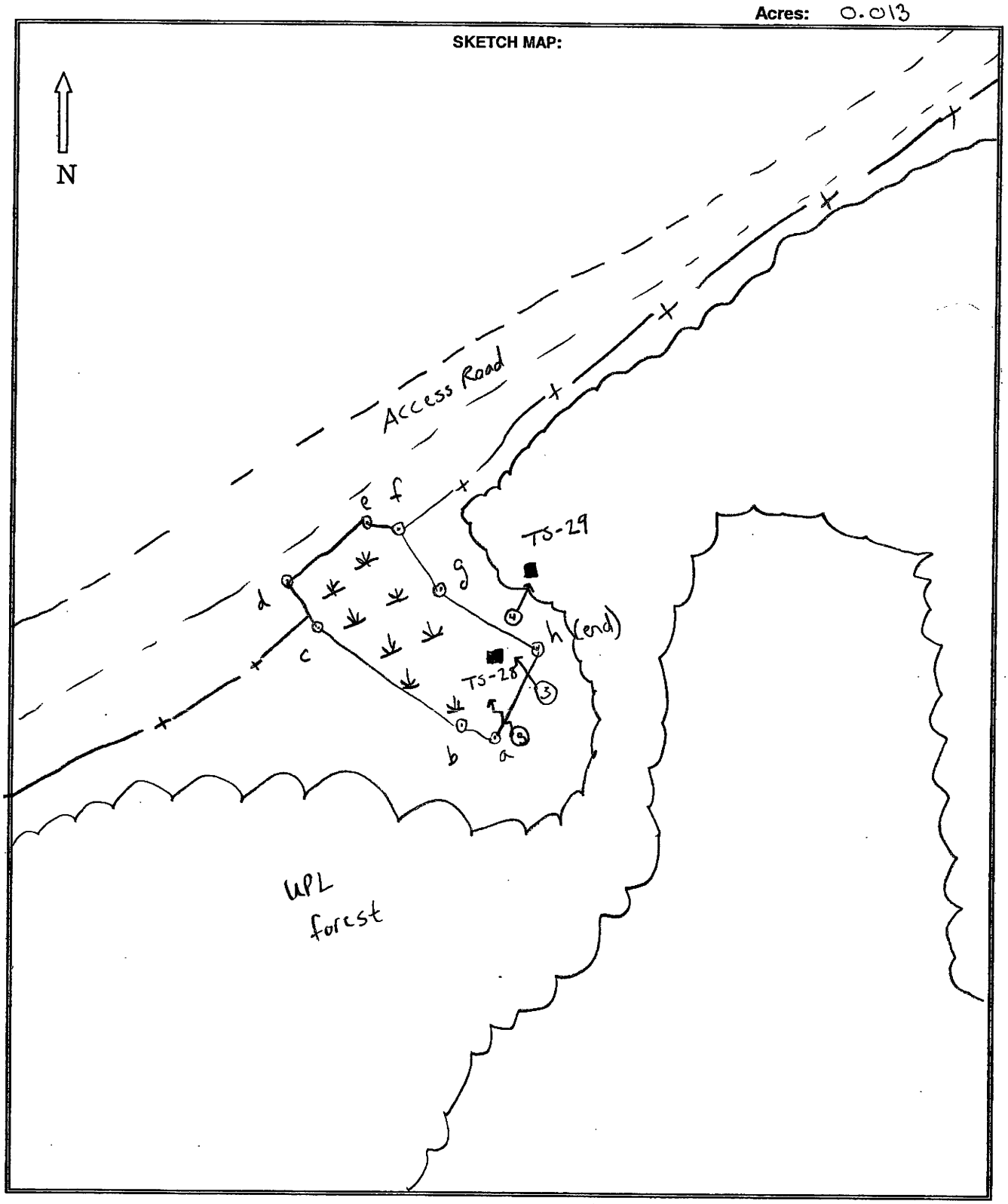
Project/Site: 071-522.0001/ CRDA No. 5

Wetland ID: Wetland 14 - TS 28

Date: 9-12-07

Acres: 0.013

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 / CRDA No. 5		**Date:** 9-12-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAR, LCPS	**GPS Unit:** 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57' 17.54"N 80°24' 14.34"W	**Point Name:** Non wetland - TS 29	
Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No X	Non wetland - TS 29
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	**Photograph No:** 4

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Juglans nigra	T	FACU	11.			
2.	Prunus serotina	T	FACU	12.			
3.	Carya glabra	T	FACU-	13.			
4.	Lonicera japonica	S	FAC-	14.			
5.	Rosa multiflora	S	FACU	15.			
6.	Aster prenanthoides	H	FAC	16.			
7.	Dichanthelium clandestinum	H	FAC+	17.			
8.	Viola sp.	H	N.I.	18.			
9.	Parthenocissus quinquefolia	HV	FACU	19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/8 = 25%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001/CROA No. 5

Wetland ID: Non wetland - TS 29

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka Silt loams (DtD) 15-25%

Drainage Class: Moderately Well Drained/ Well Drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-1		10YR 3/3	None	NA	Silt Loam
1-16		10YR 5/4	None	NA	Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland, TS-29

Date: 9-12-07

Acres: —

SKETCH MAP:

N

please refer to Wetland 14, TS-28
sketch for Non-wetland, TS-29 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No.5		Date: 9-12-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	PAK LCPS	GPS Unit: GeoXT 7 Camera: A	State: PA
GPS Coordinates:	39°57'18.12"N 80°24'11.17"W	Point Name: Wetland 15-TS 30	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Wetland 15-TS 30
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Photograph No: 5
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Polygonum sagittatum	H	OBL	12.			
3.	Leersia oryzoides	H	OBL	13.			
4.	Aster puniceus	H	OBL	14.			
5.	Glyceria striata	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 15 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 15, TS-30

SOILS

Map Unit Name:

(Series and Phase): Dorman-Cullooka Silt loams (DtD) 15-25%

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Moderately Well Drained/ Well Drained

Field Observations Confirm Mapped Type?

Yes _____ No _____

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 3/2	none	N/A	silt loam
3-11		5Y 4/1	7.5YR 4/6	common/ fine to medium	silt loam
11-16		10Y 5/1	none	N/A	silty clay

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____
Hydric Soils Present?	Yes ✓	No ____

Is this Sampling Point Within a Wetland?

Yes ✓

No ____

USFWS Classification: PEM

Remarks:

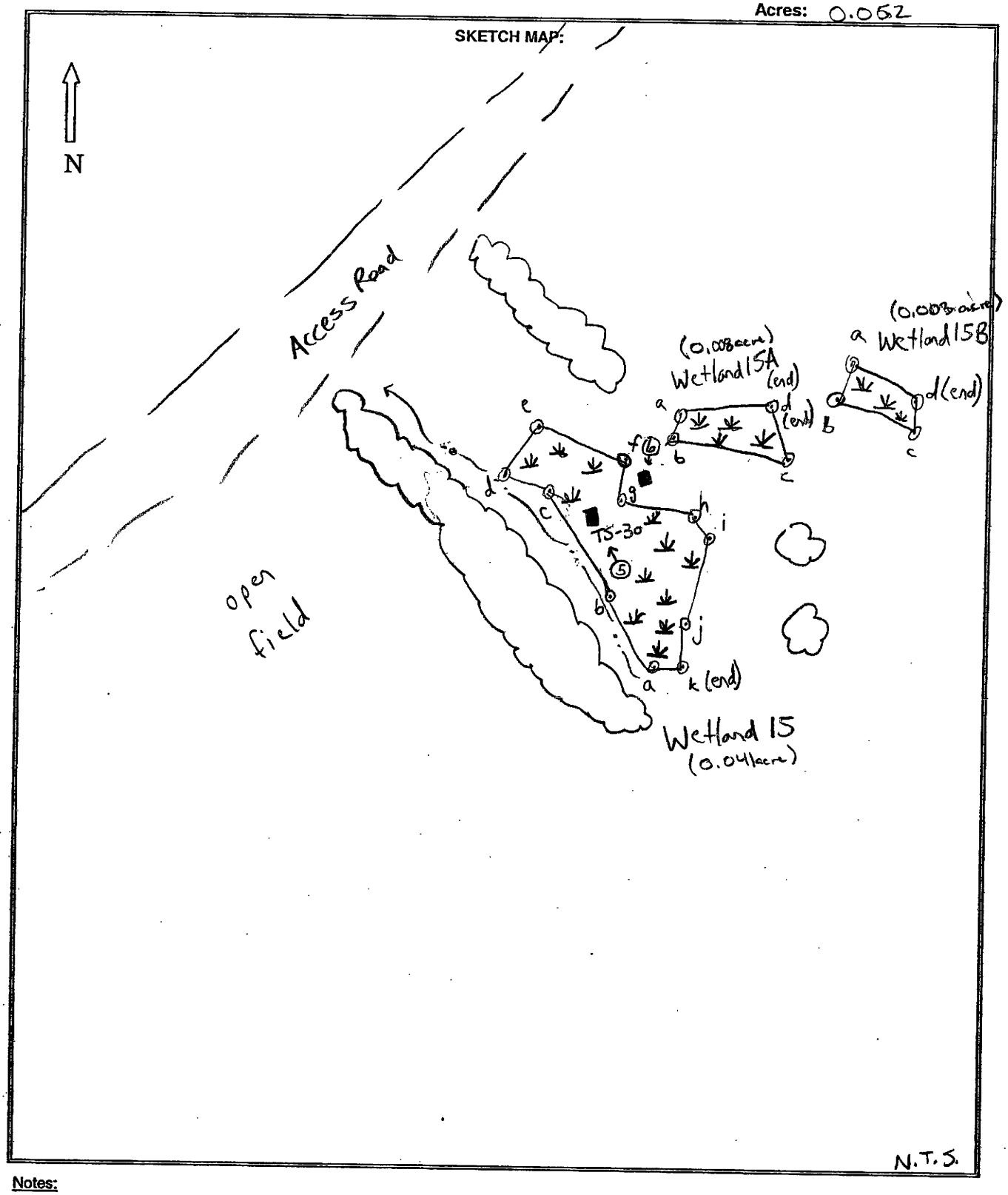
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 15 - TS 30

Date: 9-12-07

Acres: 0.062

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9-12-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	DAK, LCPS	GPS Unit: Geo XT 7 Camera: A	State: PA
GPS Coordinates:	39°57'18.32"N 80°24'11.00"W	Point Name: Non-Wetland, TS-31	
Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Non-wetland, TS-31
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	Photograph No: 6

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Fraxinus americana	T	FACU	12.			
3.	Prunus serotina	T	FACU	13.			
4.	Rubus allegheniensis	S	FACU-	14.			
5.	Rosa multiflora	S	FACU	15.			
6.	Leersia virginica	H	FACW	16.			
7.	Polygonum persicaria	H	FACW	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/7 = 29%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: — (inches)

Depth to Saturated Soil: — (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland, TS-31

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams (DtD) 15-25%

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Moderately Well Drained/ Well Drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-1		10YR 3/2	none	N/A	silt loam
1-4		10YR 4/2	7.5YR 4/6	few/fine	silt loam
4-16		10YR 4/4	none	N/A	clayey silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓
Wetland Hydrology Present?	Yes _____	No ✓
Hydric Soils Present?	Yes _____	No ✓

Is this Sampling Point Within a Wetland?

Yes _____

No ✓

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland, TS-31

Date: 9-12-07

Acres: —

SKETCH MAP:

N

Please see sketch for
Wetland 15, TS-30
for Non-wetland, TS-31
location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001/CRDA No. 5		Date: 9-12-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	LCPS, PAK	GPS Unit: 7 Camera: A	State: PA
GPS Coordinates:	39°57'18.93"N 80°24'10.32"W	Point Name: Wetland 16-TS32	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Wetland 16-TS32
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	Photograph No: 7

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Aster puniceus	H	OBL	11.			
2.	Carex lurida	H	OBL	12.			
3.	Leersia oryzoides	H	OBL	13.			
4.	Eupatorium perfoliatum	H	FACW+	14.			
5.	Typha latifolia	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
___ Stream, Lake, or Tide Gauge	Primary Indicators:
___ Aerial Photographs	X Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	___ Water Marks
Depth of Surface Water: 0-½ (inches)	___ Drift Lines
Depth to Free Water in Pit: 14 (inches)	___ Sediment Deposits
Depth to Saturated Soil: 0 (inches)	X Drainage Patterns in Wetlands
	Secondary Indicators:
	___ Oxidized Root Channels in Upper 12 Inches
	___ Water Stained Leaves
	___ Local Soil Survey Data
	X FAC-Neutral Test
	___ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001/ CRDA No. 5
Wetland ID: Wetland 16 - TS 32

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams 15-25% (DtD)
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Moderately Well Drained/ Well Drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		5Y 5/2	10YR 5/8	Few/Fine	Clayey Silt Loam
3-16		5Y 5/1	10YR 5/8	Few/Medium	Clay Loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- X Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	X	
Wetland Hydrology Present?	X	
Hydric Soils Present?	X	

Is this Sampling Point Within a Wetland?
Yes X
No ____

USFWS Classification: PEM

Remarks:

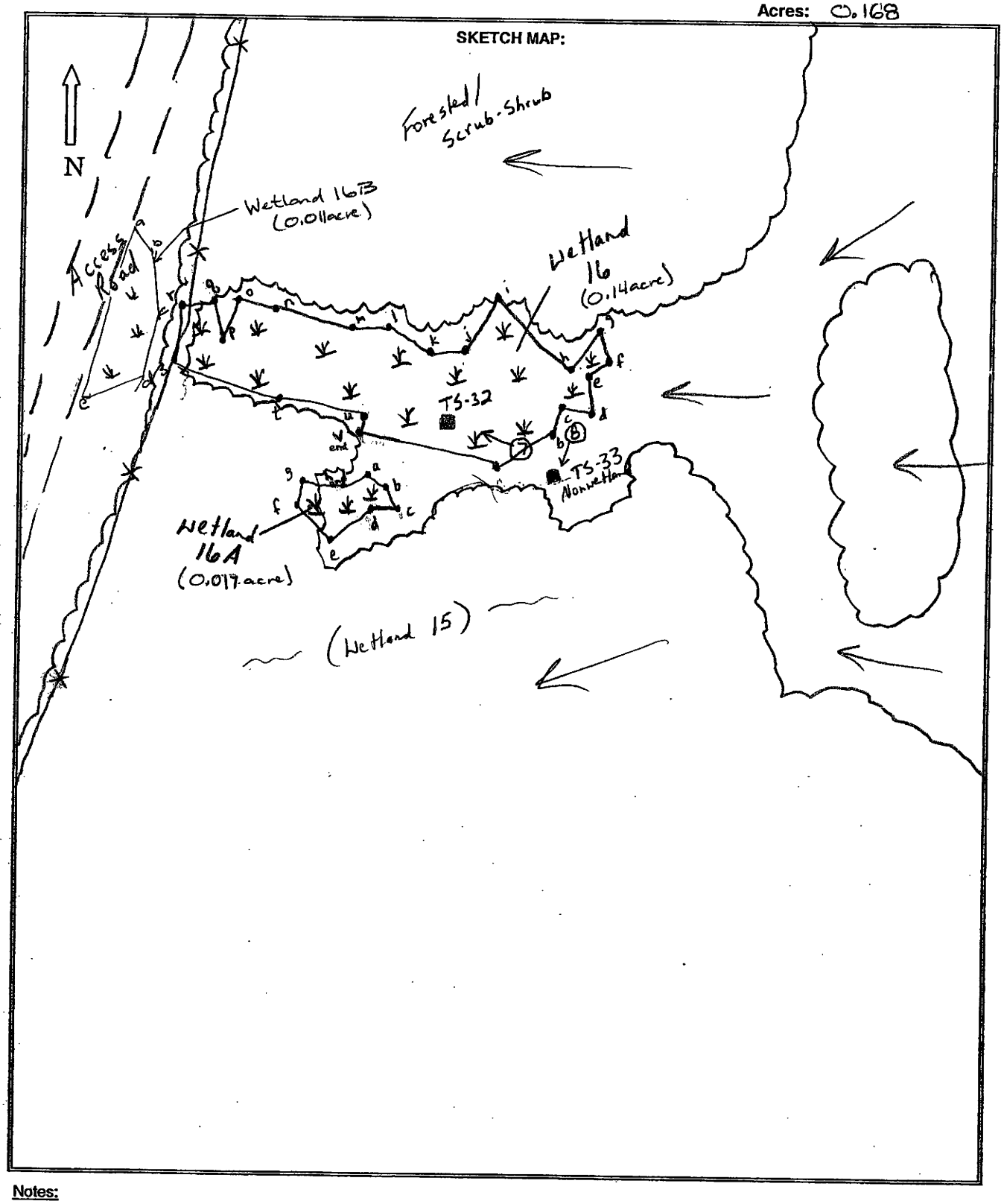
Project/Site: 071-522.0001/CRDA No. 5

Wetland ID: Wetland 16 - TS-32

Date: 9-12-07

Acres: 0.168

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001/CRDA No.5		Date: 9-12-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	PAK, LCPS	GPS Unit: 7 / Camera: A	State: PA
GPS Coordinates:	39° 57'18.68"N 80°24'9.80"W	Point Name: Nonwetland TS 33	
Do normal circumstances exist on the site?	Yes X	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No X	Nonwetland TS 33
Is the area a potential problem area?	Yes	No X	Photograph No: 8
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Rosa multiflora	S	FACU	11.			
2.	Eleagnus umbellata	S	UPL	12.			
3.	Acer saccharum	S	FACU-	13.			
4.	Aster ericoides	H	FACU	14.			
5.	Solidago gigantea	H	FACW	15.			
6.	Dactylis glomerata	H	FACU	16.			
7.	Phleum pratense	H	FACU	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 1/7 = 14%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	Wetland Hydrology Indicators:
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: ~ (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 / CRDA No. 5
Wetland ID: Nonwetland TS 33

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka Silt loams 15-25% (DtD) Drainage Class: Moderately Well Drained / Well Drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-7		10YR 4/4	none	N/A	silt loam
7-16		10YR 5/3	10YR 5/8	few/fine	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-wetland, TS-33

Date: 9-12-07

Acres: ——

SKETCH MAP:

N

see sketch for Wetland 16-TS32

for Non-wetland, TS-33 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 / CRDA No. 5		Date: 9-13-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	LCPS, PAK	GPS Unit: 7 / Camera: A	State: PA
GPS Coordinates:	39°57'16.40"N 80°24'21.06"W	Point Name: Wetland 17 - TS 34	
Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Wetland 17 - TS 34
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	Photograph No: 12

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Agrostis alba	H	FACW	11.			
2.	Leersia oryzoides	H	OBL	12.			
3.	Mentha spicata	H	FACW+	13.			
4.	Phalaris arundinacea	H	FACW+	14.			
5.	Rumex crispus	H	FACU	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 80%

Remarks:
Area is dominated by Agrostis alba

HYDROLOGY

- ____ Recorded Data (Describe in Remarks)
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- X No Recorded Data Available

Field Observations:

Depth of Surface Water: — (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: 0-3 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- X Saturated in upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators:
- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522,0001/CRDA No.5
Wetland ID: Wetland 17 - TS 34

SOILS

Map Unit Name:
(Series and Phase): Nawark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat Poorly Drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		5Y 4/1	N 2.5/0	Few/Coarse	Loamy Silt
3-16		5Y 5/2	10YR 5/8	Few/Fine	Clay Loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- X Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	X	
Wetland Hydrology Present?	X	
Hydric Soils Present?	X	

Is this Sampling Point Within a Wetland?
Yes X
No ____

USFWS Classification: PEM

Remarks:

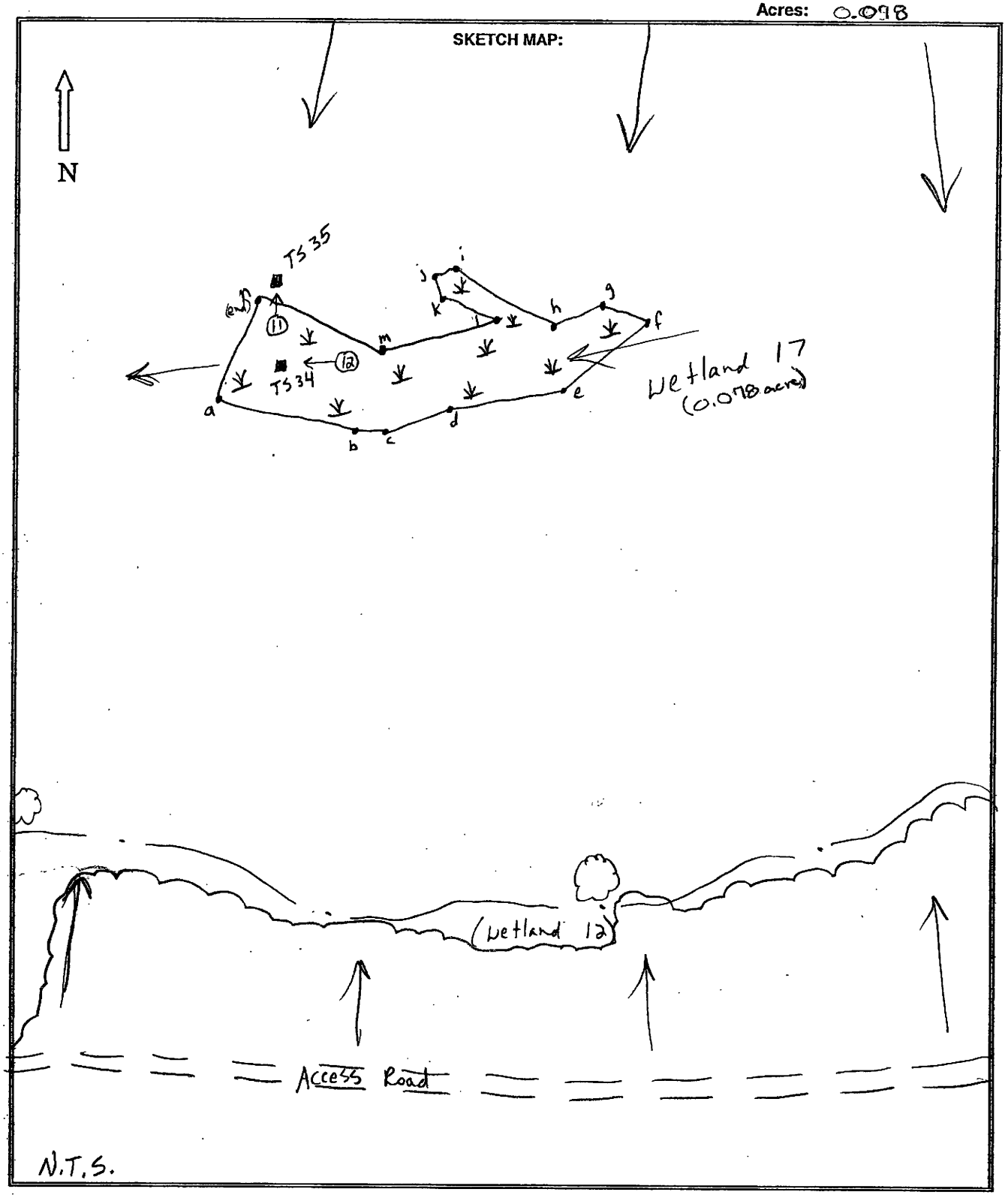
Project/Site: 071-522.0001/ CRDA No. 5

Wetland ID: Wetland 17 - TS 34

Date: 9-13-07

Acres: 0.098

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001/CROA No. 5		**Date:** 9-13-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK, LCPS	**GPS Unit:** 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'16.64" N 80°24' 21.09" W	**Point Name:** Nonwetland - TS 35	
Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No X	Nonwetland - TS 35
Is the area a potential problem area?	Yes	No X	**Photograph No:**
(if needed, explain on reverse.)			11

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Festuca rubra	H	FACU	11.			
2.	Ambrosia artemisiifolia	H	FACU	12.			
3.	Avena sativa	H	UPL	13.			
4.	Daucus carota	H	UPL	14.			
5.	Agropyron repens	H	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 0/5=0%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: — (inches)	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001/CROA No. 5
Wetland ID: Nonwetland - TS 35

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR 4/3	None	NA	Silt Loam
4-16		10YR 5/4	None	NA	Silt Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland - TS 35

Date: 9-13-07

Acres: —

SKETCH MAP:

N

See sketch for Wetland 17-TS 34
for Non-Wetland - TS 35 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9-13-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK LCPS	**GPS Unit:** Geo XT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'18.84"N 80°24'16.98"W	**Point Name:** Wetland 18- TS 36	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 18-TS 36
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 13
Is the area a potential problem area?	Yes	No ✓	
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acorus calamus	H	OBL	11.			
2.	Aster puniceus	H	OBL	12.			
3.	Eupatorium perfoliatum	H	FACW+	13.			
4.	Mentha spicata	H	FACW+	14.			
5.	Scirpus atrovirens	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 11 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 18 - TS 36

SOILS

Map Unit Name: (DtF)
(Series and Phase): Dormont-Culleoka silt loams 25-50%
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well Drained/ Moderately Well Drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0 - 1		10YR 2/2	none	N/A	fibric silt
1 - 8		10Y 3/1	7.5YR 3/4	few/fine	clay loam
8-16		2.5Y 4/1	10YR 3/6	common/fine	silty clay

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

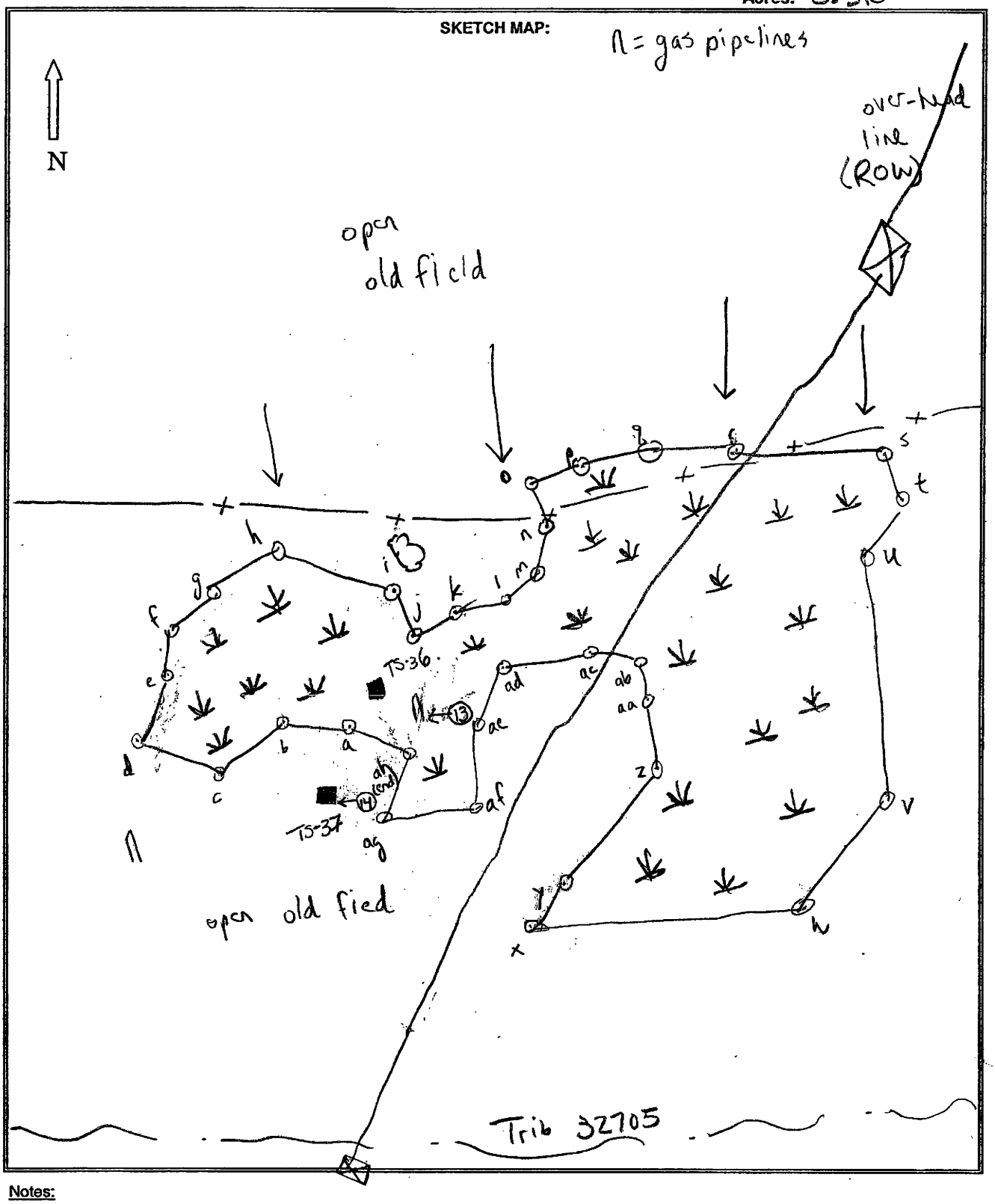
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 18 - TS 36

Date: 9-13-07

Acres: 0.310

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9-13-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK, LCPS	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57' 18.60"N 80° 24' 17.17"W	**Point Name:** Non-Wetland, TS-37	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Non-Wetland, TS-37
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 14
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Elaegnus umbellata	S	UPL	11.			
2.	Festuca rubra	H	FACU	12.			
3.	Phelum pratense	H	FACU	13.			
4.	Dactylis glomerata	H	FACU	14.			
5.	Aster sp.	H	N.I.	15.			
6.	Daucus carota	H	UPL	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 0/5 = 0 %

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: — (inches)	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: — (inches)	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
Depth to Saturated Soil: — (inches)	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-37

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams (DtF) 25-50%
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well Drained/ Moderately Well Drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 5/3	none	N/A	silt loam
3-16		10YR 5/4	none	N/A	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	_____	✓
Wetland Hydrology Present?	_____	✓
Hydric Soils Present?	_____	✓

Is this Sampling Point Within a Wetland?
Yes _____
No ✓

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-37

Date: 9-13-07

Acres: —

SKETCH MAP:

N

please see sketch for
Wetland 18, TS-36 for
Non-Wetland, TS-37 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9-14-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	PAK, LCPS	GPS Unit: GeoXT7 Camera: A	State: PA
GPS Coordinates:	39°57'17.89"N 80°24'15.59"W	Point Name: Wetland 19-TS-38	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 19-TS-38
Is the area a potential problem area?	Yes	No ✓	Photograph No:
(if needed, explain on reverse.)			15

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Glyceria striata	H	OBL	12.			
3.	Arctium minus	H	UPL	13.			
4.	Leersia oryzoides	H	OBL	14.			
5.	Polygonum sagittatum	H	OBL	15.			
6.	Amphicarpaea bracteata	V	FAC	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/6 = 83%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: 0 (inches)	____ Sediment Deposits
Depth to Saturated Soil: 0 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	X FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 / CRDA No.5
Wetland ID: Wetland 19 - TS 38

SOILS

Map Unit Name:
(Series and Phase): Newark Silt Loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		2.5Y 4/2	None	NA	Gravelly Silt
3-16		5Y 4/1	N 2.5/0	Few/Coarse	Gravelly Silt Loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____
Hydric Soils Present?	Yes ✓	No ____

Is this Sampling Point Within a Wetland?
Yes ✓
No ____
USFWS Classification: PEM

Remarks:

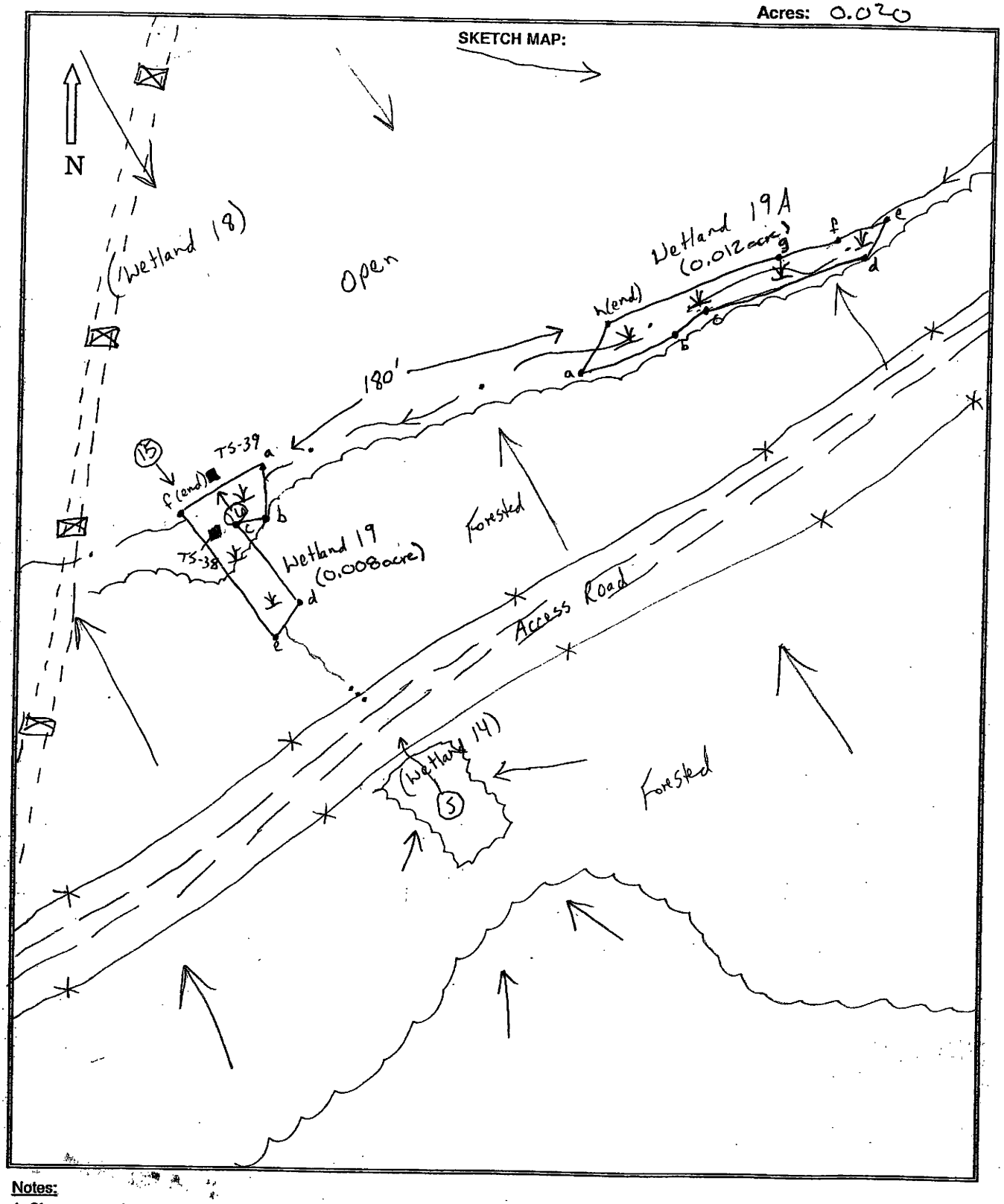
Project/Site: 071-522.0001/CROA No. 5

Wetland ID: Wetland 19 - TS 38

Date: 9-14-07

Acres: 0.020

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001/ CRDA No. 5		Date: 9-14-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	LCPS, PAK	GPS Unit: 7 / Camera: A	State: PA
GPS Coordinates:	39° 57' 18.07" N 80° 24' 15.62" W	Point Name: Nonwetland TS-39	
Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Nonwetland TS-39
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	Photograph No: 16

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Ambrosia artemisiifolia	H	FACU	11.			
2.	Phleum pratense	H	FACU	12.			
3.	Dactylis glomerata	H	FACU	13.			
4.	Arctium minus	H	UPL	14.			
5.	Agrostis alba	H	FACW	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 1/5 = 20%.

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001/CRDA No. 5
Wetland ID: Nonwetland TS-39

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat Poorly Drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 4/3	None	NA	Clayey Silt Loam
3-16		2.5Y 4/3	5YR 5/8	Few/Fine	Silt Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.001 CRDA No. 5

Wetland ID: Non-Wetland -TS 39

Date: 9-14-07

Acres: —

SKETCH MAP:

N

please see sketch for

Wetland 19, TS 38 for

Non-Wetland-TS 39 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9-14-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK, LCPS	**GPS Unit:** GeoXT **Camera:** A	**State:** PA
GPS Coordinates:	39°57'20.26"N 80°24'13.50"W	**Point Name:** Wetland 20-TS40	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 20-TS40
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 17
Is the area a potential problem area?	Yes	No ✓	
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Leersia oryzoides	H	OBL	11.			
2.	Epilobium coloratum	H	OBL	12.			
3.	Polygonum hydropiper	H	OBL	13.			
4.	Aster puniceus	H	OBL	14.			
5.	Carex frankii	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks: Wetland dominated by Leersia oryzoides

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >11 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 20, TS-40

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams (DtF) 25-50%, Drainage Class: Well Drained / Moderately Well Drained
(Taxonomy Subgroup): Ultic Hapludalfs
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		5Y 3/2	N 2.5/0	common/coarse	silt loam
3-16		5Y 4/2	7.5YR 3/4	few to common/ fine to medium	clayey silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

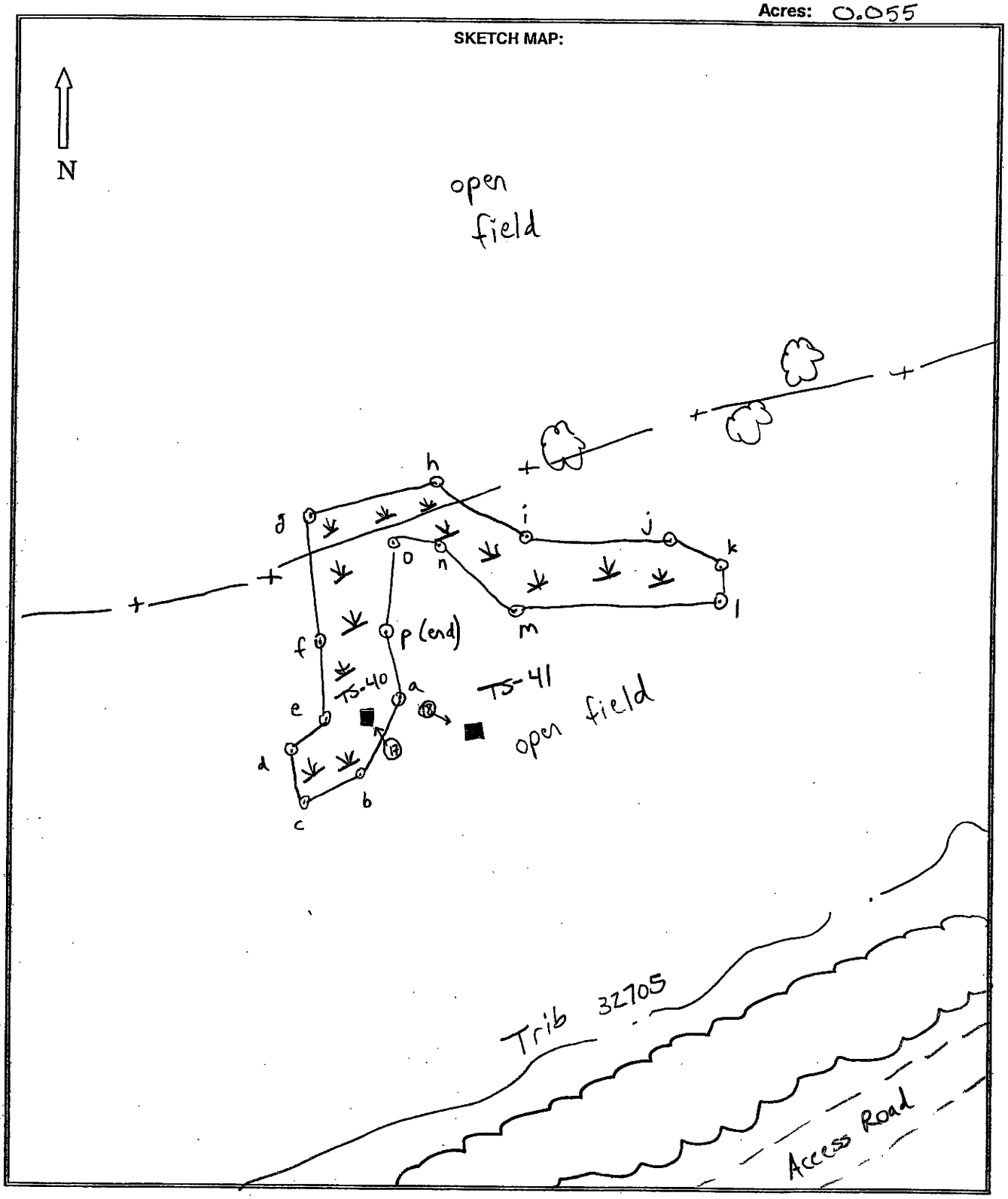
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 20, TS-40

Date: 9-14-07

Acres: 0.055

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9-14-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	PAK, LCPS	GPS Unit: GeoXT 7 Camera: A	State: PA
GPS Coordinates:	39°57'20.23"N 80°24'13.34"W	Point Name: Non-Wetland, TS-41	
Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Non-Wetland, TS-41
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	Photograph No: 18

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Agropyron repens	H	FACU-	11.			
2.	Dactylis glomerata	H	FACU	12.			
3.	Erigeron annuus	H	FACU	13.			
4.	Arctium minus	H	UPL	14.			
5.	Avena sativa	H	UPL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 0/5 = 0%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: — (inches)	____ Sediment Deposits
Depth to Saturated Soil: — (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-41

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF)

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well Drained/ Moderately Well Drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 4/3	none	N/A	silt loam
3-11		10YR 4/4	none	N/A	silt loam
11-16		10YR 4/3	10YR 4/2	common/medium	silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓
Wetland Hydrology Present?	Yes _____	No ✓
Hydric Soils Present?	Yes _____	No ✓

Is this Sampling Point Within a Wetland?

Yes _____

No ✓

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland - TS 41

Date: 9-14-07

Acres: —

SKETCH MAP:

N

please see sketch for
Wetland 20, TS-40 for
Non-Wetland - TS 41 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).

2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 / CRDA No. 5		Date: 9-14-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	LCPS, PAK	GPS Unit: 7 / Camera: A	State: PA
GPS Coordinates:	39°57'22.61"N 80°24'8.15"W	Point Name: Wetland 21-TS 42	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Wetland 21-TS 42
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	Photograph No: 19
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Polygonum sagittatum	H	OBL	11.			
2.	Impatiens capensis	H	FACW	12.			
3.	Glyceria striata	H	OBL	13.			
4.	Polygonum persicaria	H	FACW	14.			
5.	Eupatorium perfoliatum	H	FACW+	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: 0-11 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators: (11-16")
	X Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	X FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001/ CRDA No. 5
Wetland ID: Wetland 21 - TS 42

SOILS

Map Unit Name:
(Series and Phase): Newark Silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat Poorly Drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10YR 3/3	10YR 4/6	few/fin	Clayey Silt Loam
5-11		5Y 4/1	5YR 4/4	few/Coarse	Clayey Silt Loam
11-16		5Y 5/1	5YR 4/4	Common/Fine-Medium	Clay Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

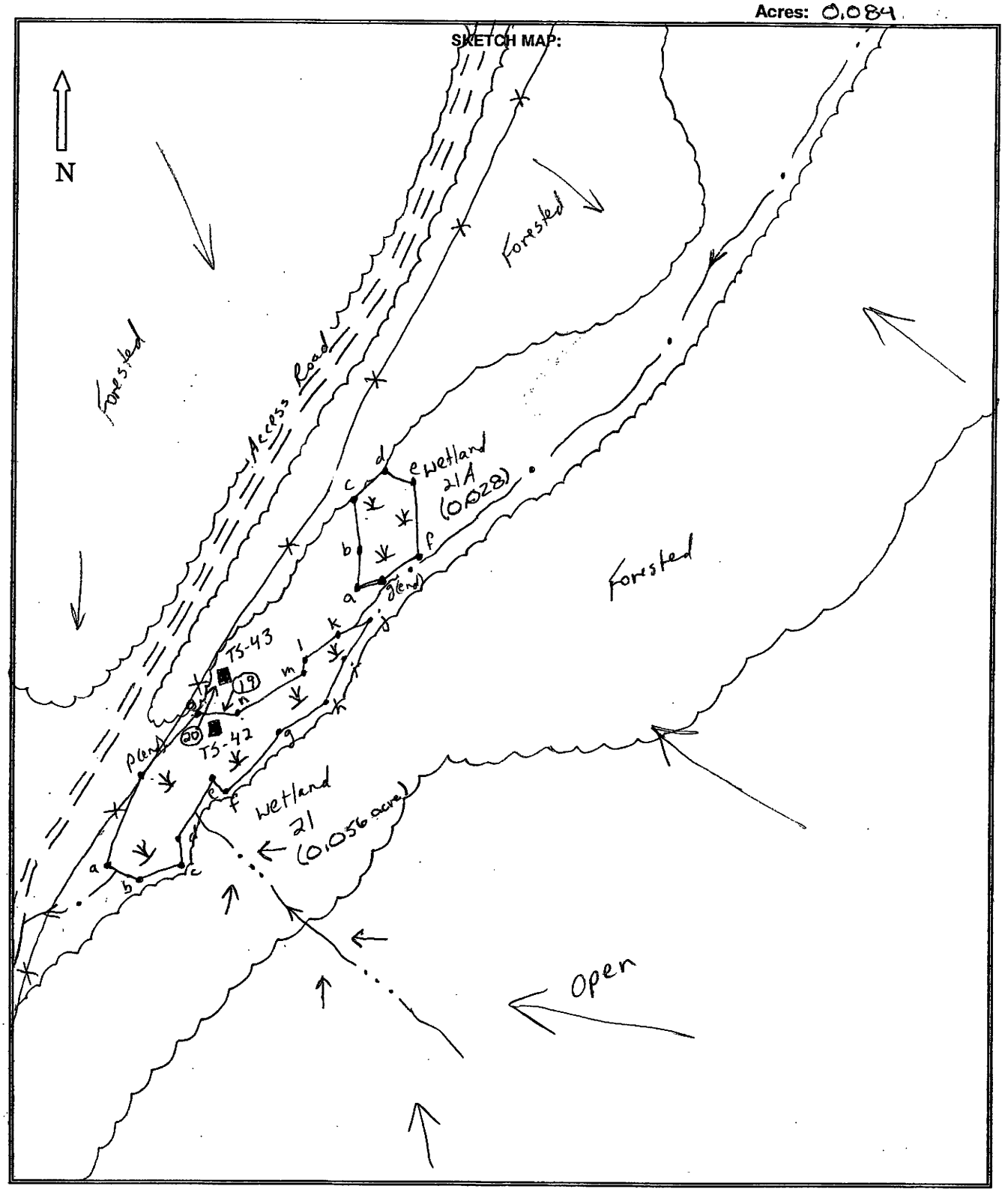
Project/Site: 071-522.0001/CRPA No. 5

Wetland ID: Wetland 21- TS 42

Date: 9-14-07

Acres: 0.084

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001/CRDA No. 5		**Date:** 9-14-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK, LCPS	**GPS Unit:** 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'22.83"N 80°24'8.00"W	**Point Name:** Nonwetland - TS 43	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Nonwetland - TS 43
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	**Photograph No:** 20
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Dactylis glomerata	H	FACU	11.			
2.	Coronilla varia	H	UPL	12.			
3.	Aster prenanthoides	H	FAC	13.			
4.	Aster sp.	H	N.I.	14.			
5.	Phleum pratense	H	FACU	15.			
6.	Rosa multiflora	S	FACU	16.			
7.	Amphicarpaea bracteata	V	FAC	17.			
8.	Fraxinus americana	T	FACU	18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/7 = 29%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: — (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-577.0001/CRDA No.5
Wetland ID: Nonwetland - TS 43

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat Poorly Drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10YR 4/3	None	NA	Silt Loam
5-16		10YR 5/4	None	NA	Silt Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-43

Date: 9-14-07

Acres: —

SKETCH MAP:

N

See sketch for Wetland 21, TS-42

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/17/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	PAK, KLM	GPS Unit: GeoXH 9 Camera: C	State: PA
GPS Coordinates:	39°57'24.15"N 80°24'5.42"W	Point Name: TS-44	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No X	Wetland 22, TS-44
Is the area a potential problem area?	Yes	No X	Photograph No:
(if needed, explain on reverse.)			1

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Leersia oryzoides	H	OBL	11.			
2.	Polygonum sagittatum	H	OBL	12.			
3.	Polygonum persicaria	H	FACW	13.			
4.	Pilea pumila	H	FACW	14.			
5.	Impatiens capensis	H	FACW	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: 0-5 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 22 TS-44

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10 YR 4/3	n/a	n/a	silt loam
2-6		10 YR 4/2	7.5 YR 4/4	common/fine	silt loam
6-16		5 Y 4/1	7.5 YR 4/6	common/fine-med.	clayey silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

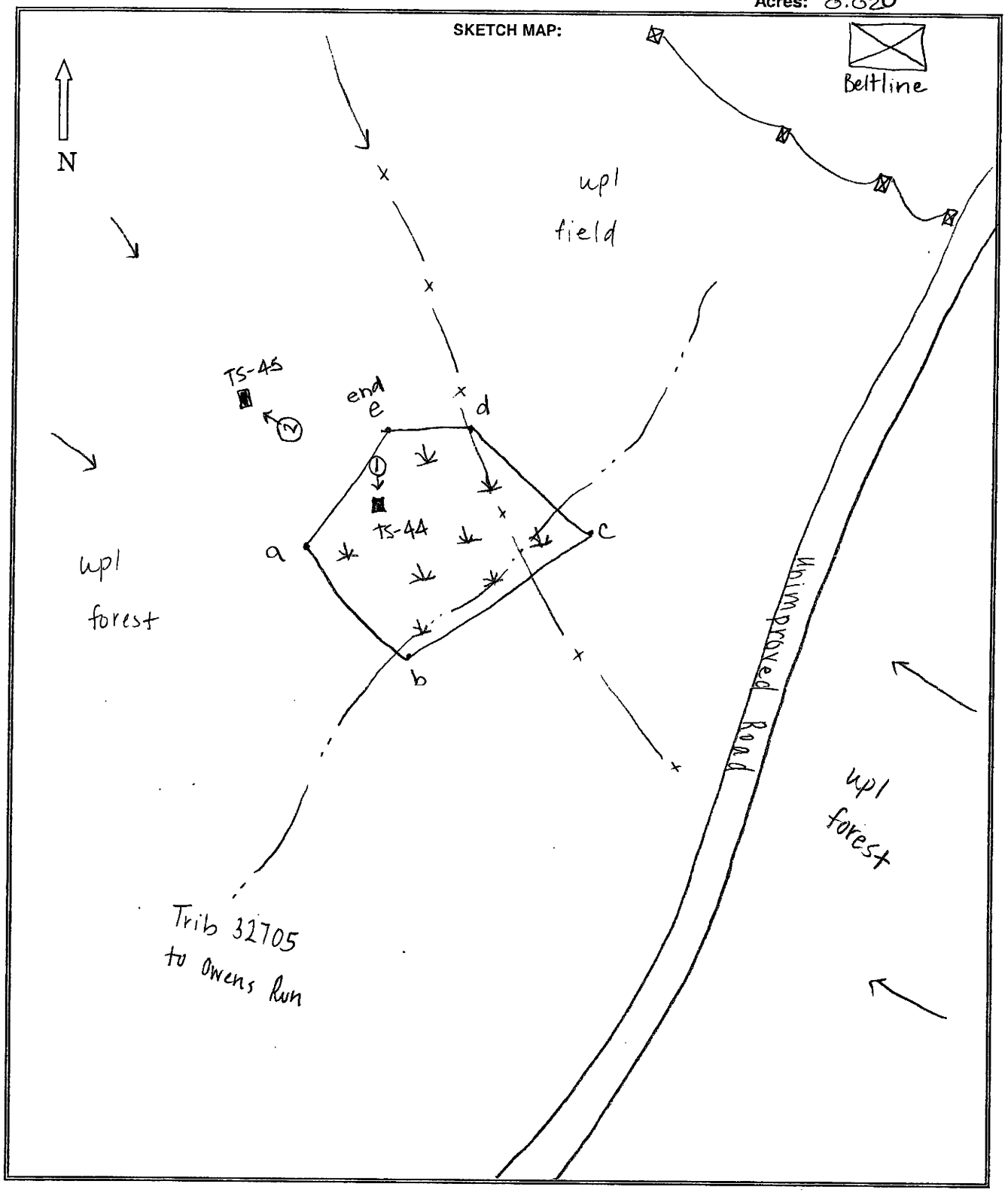
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 22 TS-44

Date: 9/17/07

Acres: 0.020

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/17/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	PAK, KLM	GPS Unit: GeoXH9 Camera: C	State: PA
GPS Coordinates:	39° 57'24.28"N 80° 24'5.82"W	Point Name: TS-45	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Non-Wetland, TS-45
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	Photograph No: 2
(if needed, explain on reverse.) .			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Prunus serotina	T	FACU	11.			
2.	Acer rubrum	T	FAC	12.			
3.	Rosa multiflora	S	FACU	13.			
4.	Dactylis glomerata	H	FACU	14.			
5.	Arctium lappa	H	UPL	15.			
6.	Vernonia gigantea	H	FAC	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/6 = 33%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: N/A (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No hydrology indicators present.

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS-45

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (NW)
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-8		10 YR 4/2	7.5 YR 4/4	common/very fine	silt loam
8-16		10 YR 4/3	10 YR 6/6	few/medium	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS-45

Date: 9/17/07
Acres: ___

SKETCH MAP:

N

See Wetland 22
sketch map.

Notes:
1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/17/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	PAK, KLM	GPS Unit: GeoXH9 Camera: C	State: PA
GPS Coordinates:	39°57'25.86"N 80°24'3.69"W	Point Name: TS-46	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No X	Wetland 23 TS 46
Is the area a potential problem area?	Yes	No X	Photograph No:
(if needed, explain on reverse.)			4

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Salix nigra	T	FACW+	11.			
2.	Leersia oryzoides	H	OBL	12.			
3.	Typha latafolia	H	OBL	13.			
4.	Eupatorium perfoliatum	H	FACW+	14.			
5.	Aster puniceus	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: 0-1 (inches)	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: to surface (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 23 TS 46

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		5Y 4/2	7.5 YR 4/6	common/fine	silt loam
5-16		10 Y 4/1	n/a	n/a	clayey silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

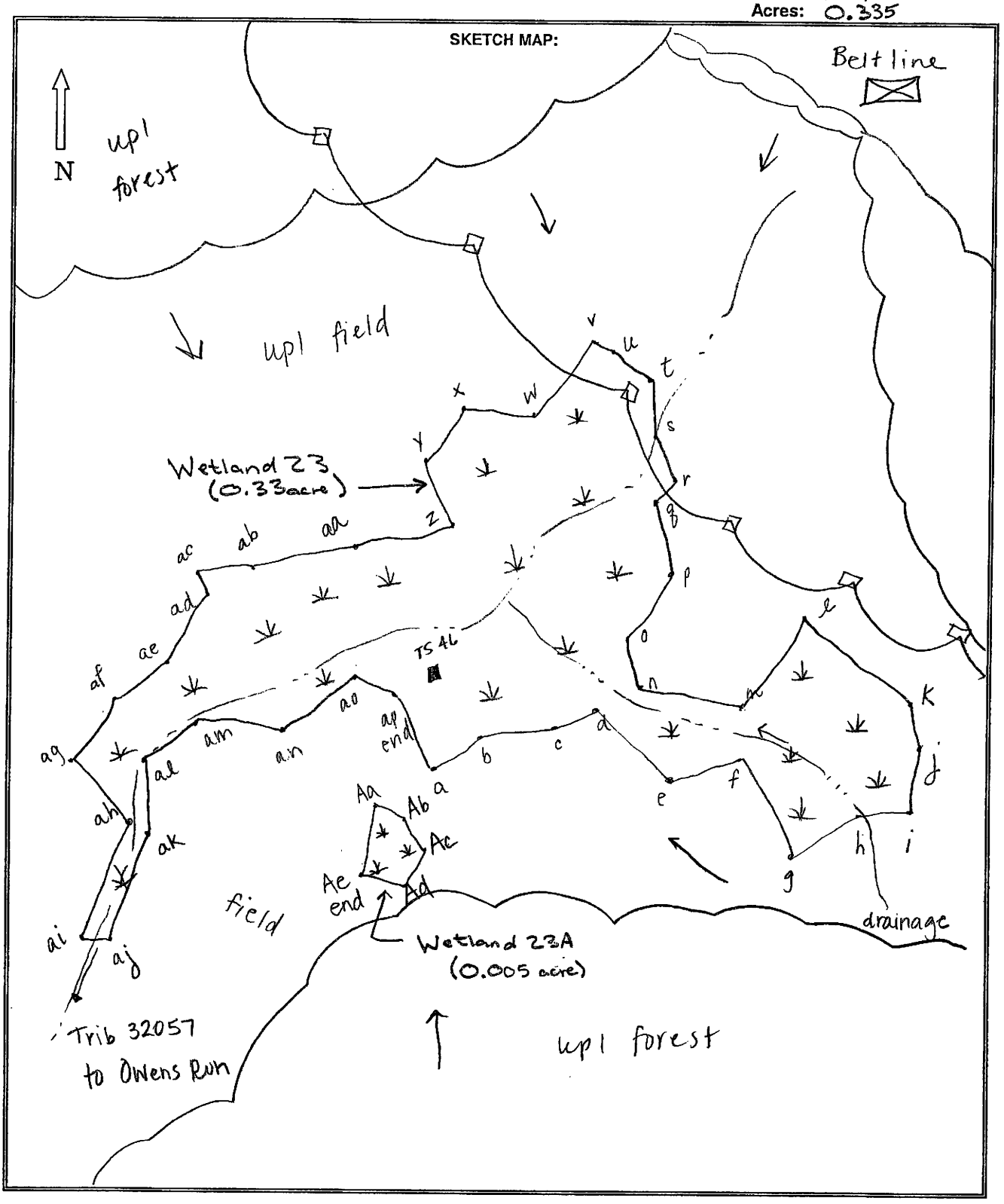
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 23 TS-46

Date: 9/17/07

Acres: 0.335

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/17/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	PAK, KLM	GPS Unit: GeoXH 9 Camera: C	State: PA
GPS Coordinates:		Point Name: TS-47	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Non-Wetland TS 47
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	Photograph No: 3
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Erigeron annus	H	FACU	11.			
2.	Coronilla varia	H	UPL	12.			
3.	Daucus carota	H	UPL	13.			
4.	Solidago sp.	H	N.I.	14.			
5.	Vernonia gigantea	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/4 = 25%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: N/A (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No hydrology indicators present.

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS 47

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-8		10 YR 4/3	n/a	n/a	clayey silt loam
8-16		10 YR 5/4	n/a	n/a	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS 47

Date: 9/17/07

Acres: —

SKETCH MAP:

N

See Wetland 23 Sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).

2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/17/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK, KLM	**GPS Unit:** GeoXH 9. **Camera:** C	**State:** PA
GPS Coordinates:	39°57'28.02"N 80°24'2.35"W	**Point Name:** TS 48	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 24 TS 48
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	**Photograph No:** 5
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Leersia oryzoides	H	OBL	11.			
2.	Typha latifolia	H	OBL	12.			
3.	Epilobium coloratum	H	OBL	13.			
4.	Aster puniceus	H	OBL	14.			
5.	Solidago altissima	H	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 20%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: 7/6 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5
Wetland ID: Wetland 24 TS 48

SOILS

Map Unit Name:
(Series and Phase): Dorrant-Colledge Silt loams 25-50% (DtF)
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well Drained / Moderately Well Drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		2.5Y 4/2	7.5YR 3/4	common/fine	silt loam
3-16		10Y 4/1	N 2.5/0	common/coarse	silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

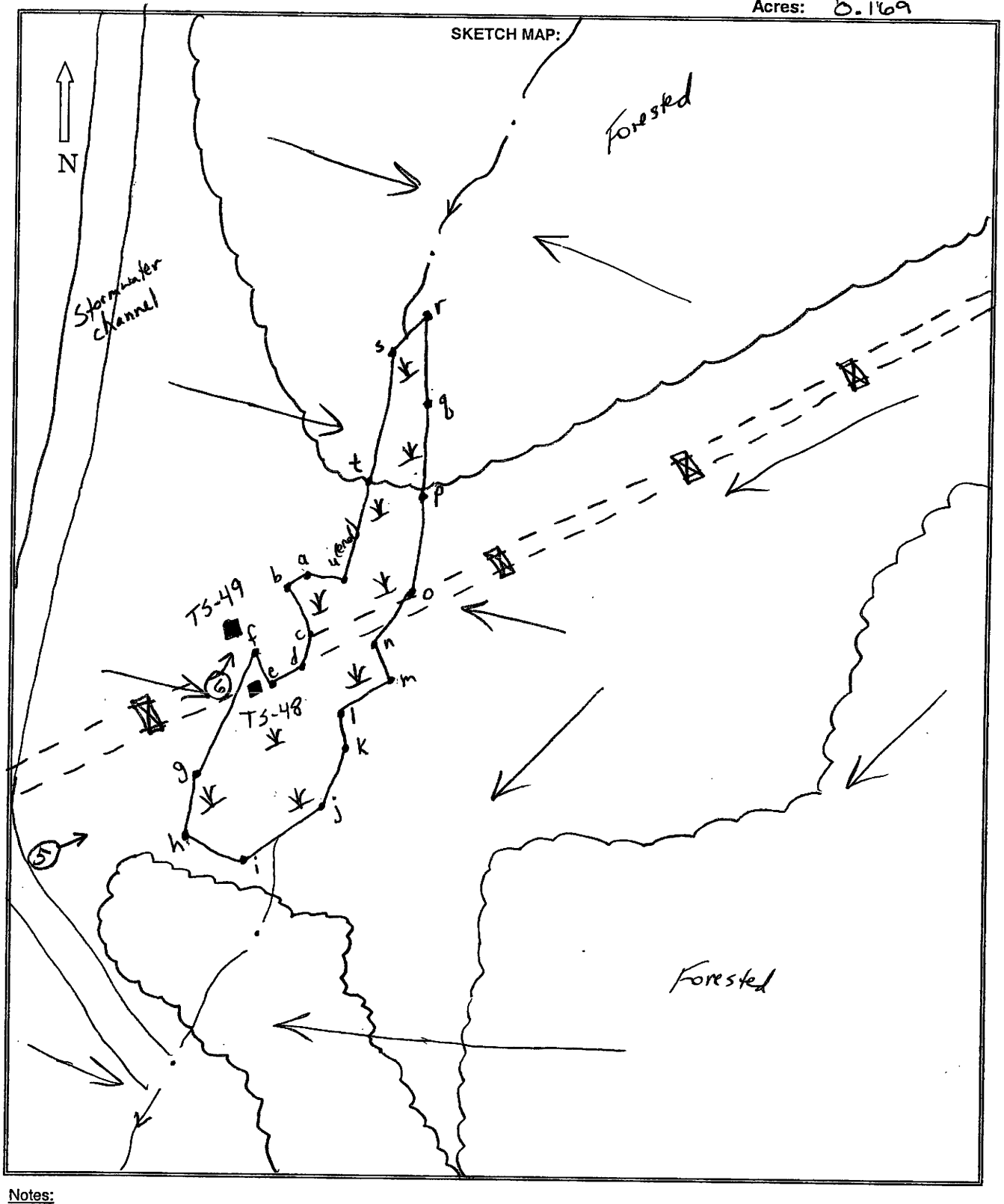
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 24 TS 48

Date: 9/17/07

Acres: 0.169

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).

2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/17/09
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	PAK, KLM	**GPS Unit:** Geo XH 9 **Camera:** C	**State:** PA
GPS Coordinates:	39°57'28.22"N 80°24'2.49"W	**Point Name:** TS-49	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Non-Wetland TS-49
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	**Photograph No:** 6
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Lotus corniculatus	H	FACU-	11.			
2.	Solidago altissima	H	FACU-	12.			
3.	Dactylis glomerata	H	FACU	13.			
4.	Aster sp.	H	N.I.	14.			
5.	Agrostis alba	H	FACW	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/4 = 25%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: — (inches)	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS-49

SOILS

Map Unit Name:
(Series and Phase): Dormont-Colleoka Silt loams 25-50% (DtF)
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well Drained/ Moderately Well Drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 4/3	n/a	n/a	silt loam
3-16		10YR 5/4	2.5Y 3/1	common/ fine-medium	clayey silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	_____	X
Wetland Hydrology Present?	_____	X
Hydric Soils Present?	_____	X

Is this Sampling Point Within a Wetland?
Yes _____
No X

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS 49

Date: 9/17/07

Acres: —

SKETCH MAP:

N

See Wetland 24
sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071522-0001 CRDA No. 5		Date: 9/18/07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	PAK, JWC	GPS Unit: GeoXH 9 Camera: C	State: PA
GPS Coordinates:	39°57'24.92"N 80°24'7.21"W	Point Name:	
Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Wetland 25, TS-50
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	Photograph No: 7

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Carex frankii	H	OBL	11.			
2.	Eupatorium perfoliatum	H	FACW+	12.			
3.	Aster puniceus	H	OBL	13.			
4.	Leersia oryzoides	H	OBL	14.			
5.	Agrostis alba	H	FACW	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: 6 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071522.0001 CRDA No. 5
Wetland ID: Wetland 25, TS-50

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka Silt loams 25-50% (DtF)
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well Drained/ Moderately Well Drained

Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-1		2.5Y 4/3	NA	None	Loamy silt
1-16		10Y 4/1	NA	None	Loamy silt

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: Black organic material observed 1-16".

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?
Yes ✓
No ____

USFWS Classification: PEM

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland ts-51

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF)

Drainage Class: Well Drained / Moderately Well Drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-1		10 YR 4/3	NA	None	Silt loam
1-16		10 YR 6/6	NA	None	Silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ____ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks: Observed soil does not meet criteria to be considered hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ____	No ✓
Wetland Hydrology Present?	Yes ____	No ✓
Hydric Soils Present?	Yes ____	No ✓

Is this Sampling Point Within a Wetland?

Yes ____

No ✓

USFWS Classification: ____

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland ts-51

Date: 9/18/07

Acres: ——

SKETCH MAP:

N

See sketch map for Wetland 25, ts-50,

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001/CROA No. 5		Date: 9-20-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	PAK, JWC GPS Unit: XH9	Camera: C	State: PA
GPS Coordinates:	39°56'57.40"N 80°25'21.26"W	Point Name: Wetland 26-TS52	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Wetland 26 - TS-52
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	Photograph No: 13

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Leersia oryzoides	H	OBL	11.			
2.	Impatiens capensis	H	FACW	12.			
3.	Carex crinita	H	OBL	13.			
4.	Glyceria striata	H	OBL	14.			
5.	Eupatorium perfoliatum	H	FACW+	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	X Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: 0-10 (inches)	____ Drift Lines
Depth to Free Water in Pit: 0 (inches)	____ Sediment Deposits
Depth to Saturated Soil: 0 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	X FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001/CRDA No. 5
Wetland ID: Wetland 26 - TS 52

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka Silt loams (DtF) 25-50%
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well Drained / Moderately Well Drained

Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10YR 3/2	None	NA	Silt
2-8		5Y 4/1	None	NA	Silt Loam
8+	Refusal - Rock				

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- X Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	X	
Wetland Hydrology Present?	X	
Hydric Soils Present?	X	

Is this Sampling Point Within a Wetland?
Yes X
No ____

USFWS Classification: PEM

Remarks:

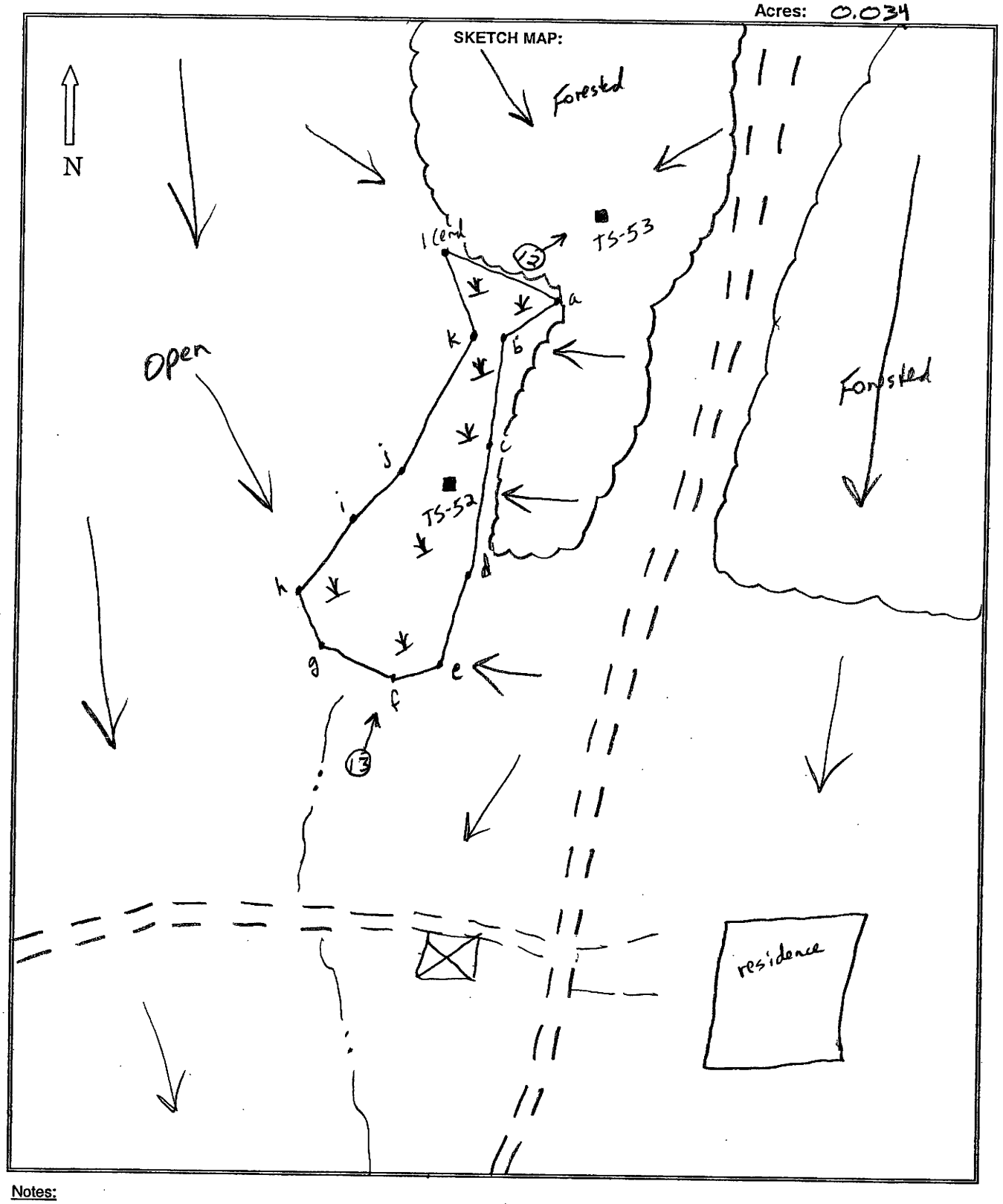
Project/Site: 071-522.0001 / CRDA No. 5

Wetland ID: Wetland 26 - TS 52

Date: 9-20-07

Acres: 0.034

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).

2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-5220001 / CRDA No. 5		Date: 9-20-07
Applicant:	Consol	Parcel/Owner:	County: Greene
Investigator(s):	PAR, JNC	GPS Unit: XH 9 Camera: C	State: PA
GPS Coordinates:	39° 56' 57.91"N 80°25'20.75"W	Point Name: Nonwetland-TS 53	
Do normal circumstances exist on the site?	Yes X	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No X	Nonwetland-TS53
Is the area a potential problem area?	Yes	No X	Photograph No:
(if needed, explain on reverse.)			12

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Juglans nigra	T	FACU	11.			
2.	Ulmus rubra	T	FAC	12.			
3.	Prunus serotina	T	FAC	13.			
4.	Rubus occidentalis	S	UPL	14.			
5.	Rosa multiflora	S	FACU	15.			
6.	Lindera benzoin	S	FACW-	16.			
7.	Dactylis glomerata	H	FACU	17.			
8.	Phleum pratense	H	FACU	18.			
9.	Galium concinnum	H	UPL	19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 3/9 = 33%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001/CRDA No. 5
Wetland ID: Nonwetland - TS 53

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams 15-25% (DtD)
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Moderately Well Drained/ Well Drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 4/2	None	NA	Silt Loam
3-16		10YR 5/3	None	NA	Silt Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?		X
Wetland Hydrology Present?		X
Hydric Soils Present?		X

Is this Sampling Point Within a Wetland?
Yes _____
No X

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001/CRDA No. 5

Wetland ID: Nonwetland - TS 53

Date: 9-20-07

Acres: —

SKETCH MAP:

N

See sketch map for Wetland 26 - TS 52.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	CRTDA No 5 071-522		**Date:** 2-26-08
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT5 **Camera:** D	**State:** PA
GPS Coordinates:	39° 57'39.17"N 80°24'56.64"W	**Point Name:** TS-54	

Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:** Wetland 27, TS-54
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	**Photograph No:** 1
Is the area a potential problem area? (If needed, explain on reverse.)	Yes ____	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Glyceria sp	H	OBL	11.			
2.	Impatiens sp.	H	FACW	12.			
3.	Poa sp	H	N.I.	13.			
4.	Agrimonia parviflora	H	FAC	14.			
5.	Typha sp	H	OBL	15.			
3.	Salix sp	T	N.I.	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/4 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: 13 (inches)

Depth to Saturated Soil: To Surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
✓ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRPA No. 5

Wetland ID: Wetland 27, TS-54

SOILS

Map Unit Name: 15-25% (DtD)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		10YR3/3	None	N/A	Silt Loam
6-16		5Y5/1	None	N/A	Clayey Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 27, TS-54

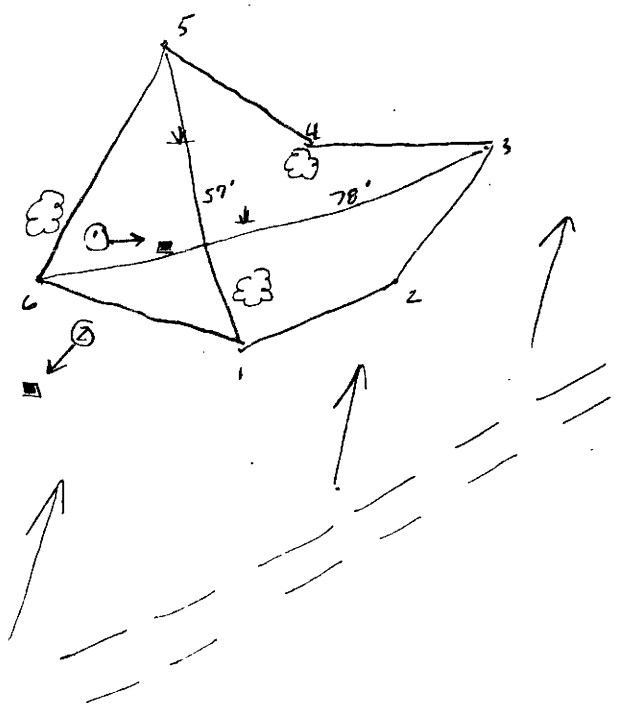
Date: 2-26-08

Acres:

within boundary = 0.050
outside of boundary = 0.003
total = 0.053 acre

SKETCH MAP:

N



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001	CRDA No. 5	**Date:** 2-26-08
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCTS	**GPS Unit:** Geo XT 5 **Camera:** D	**State:** PA
GPS Coordinates:	39°57'38.92" N 80°24'56.89" W	**Point Name:** TS-55	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-55
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 2
Is the area a potential problem area?	Yes	No ✓	
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Poa sp	H	N.I.	11.			
2.	Rubus allegheniensis	S	FACU-	12.			
3.	Solidago sp.	H	N.I.	13.			
4.	Glechoma hederacea	H	FACU	14.			
5.	Arctium minus	H	FACU	15.			
6.	Cuscuta gronovii	H	FACU	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 0/4 = 0%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 15 (inches)	____ Sediment Deposits
Depth to Saturated Soil: Top 5 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland - TS 55

SOILS

Map Unit Name: 15-25% (DtD)

(Series and Phase): Dormont-Cullowka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes ✓ No ____

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		7.5YR 3/3	none	N/A	clayey silt loam
5-16		10YR 4/3	none	N/A	clay loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ____ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	____	✓
Wetland Hydrology Present?	✓	____
Hydric Soils Present?	____	✓

Is this Sampling Point Within a Wetland?

Yes ____

No ✓

USFWS Classification: ——

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland - TS 55

Date: 2-26-08

Acres: —

SKETCH MAP:

N

Please see sketch for Wetland -27, TS-54 for Non-wetland - TS 55 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001	CRDA No. 5	Date: 3-3-08
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	MLS, LCPS	GPS Unit: GeoXT 5 Camera: D	State: PA
GPS Coordinates:	39° 57' 27.00" N 80° 25' 30.28" W	Point Name: TS-56	

	Yes	No
Do normal circumstances exist on the site?	✓	
Is the site significantly disturbed (Atypical?)		✓
Is the area a potential problem area? (if needed, explain on reverse.)		✓

Wetland ID: Wetland 28, TS-56

Photograph No: 1

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Agrimonia parviflora	H	FAC	11.			
2.	Aster lateriflorus	H	FACW-	12.			
3.	Poa sp.	H	N.I.	13.			
4.	Boehmeria cylindrica	H	FACW+	14.			
5.	Lindera benzoin	S	FACW-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/4 = 100%

Remarks:

HYDROLOGY

- ____ Recorded Data (Describe in Remarks)
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: To Surface (inches)

Depth to Saturated Soil: To Surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ✓ Saturated in upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators:

- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 28, TS-56

SOILS

Map Unit Name: 15-25% (DtD)
(Series and Phase): Dormont-Culleoka silt loams,
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR3/2	None	N/A	Silt Loam
3-16		5Y4/1	5YR3/4	Common/Medium	Clayey Silt Loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland? Yes ✓ No _____

USFWS Classification: PEM

Remarks:

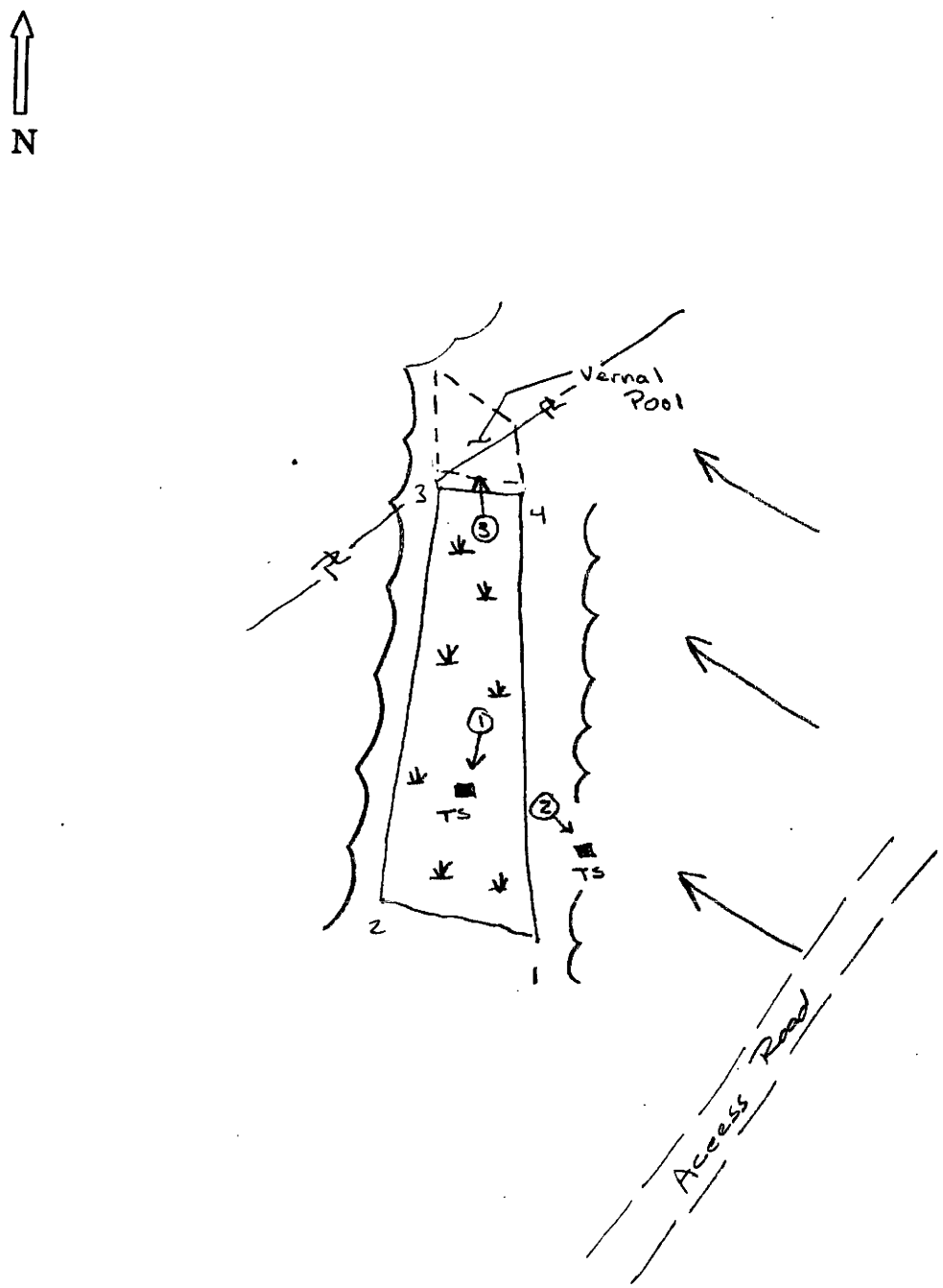
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 28, TS-56

Date: 3-3-08

Acres: 0.025

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 3-3-08
Applicant: CONSOL	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GeoXT 5	**Camera:** D	**State:** PA
GPS Coordinates: 39°57'26.85"N 80°25'29.96"W	**Point Name:** TS-57		
Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:** Non-Wetland TS-57
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	**Photograph No:** 2
Is the area a potential problem area? (if needed, explain on reverse.)	Yes ____	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Rosa multiflora	S	FACU	11.			
2.	Symphoricarpos albus	S	FACU-	12.			
3.	Allaria petiolata	H	FACU-	13.			
4.	Poa sp.	H	N.I.	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 0/3 = 0%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: 4 (inches)

Depth to Saturated Soil: To Surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
✓ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-57

SOILS

Map Unit Name: 15-25% (DtD)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes ✓ No _____

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10YR3/2	None	N/A	Silt Loam
5-16		2.5Y 4/2	10YR4/6	Common/Medium	Clayey Silt Loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?		✓
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland? Yes _____ No ✓

USFWS Classification: N/A

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-57

Date: 3-3-08

Acres: N/A

SKETCH MAP:

N

See Sketch Map for Wetland 28

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 3-3-08
Applicant: CONSOL	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GeoXT 5	**Camera:** D	**State:** PA
GPS Coordinates: 39°57'30.41"N 80°25'28.81"W		**Point Name:** TS-58	
Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:** Wetland 29, TS-58
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	**Photograph No:** 4
Is the area a potential problem area? (if needed, explain on reverse.)	Yes ____	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Phalaris arundinacea	H	FACW+	11.			
2.	Juncus effusus	H	FACW+	12.			
3.	Asclepias incarnata	H	OBL	13.			
4.	Dipsacus sylvestris	H	UPL	14.			
5.	Eupatorium perfoliatum	H	FACW+	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 80%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: 14 (inches)

Depth to Saturated Soil: To Surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
✓ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 29, TS-58

SOILS

Map Unit Name: 15-25% (DtD)
(Series and Phase): Dormont-Cullcoka silt loams
(Taxonomy Subgroup): Ultic Hapludalfs
Drainage Class: moderately well/well drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR4/2	None	N/A	Silt Loam
3-12		2.5Y4/2	10YR4/6	Common/Medium	Clayey Silt Loam
12-16		5Y5/2	2.5Y5/6	Many/Medium	Clay

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ✓ Concretions Mn
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?
Yes ✓
No _____

USFWS Classification: PEM

Remarks:
Wetland located in powerline R.O.W.

Project/Site: 071-522.0001 CRDA No. 5

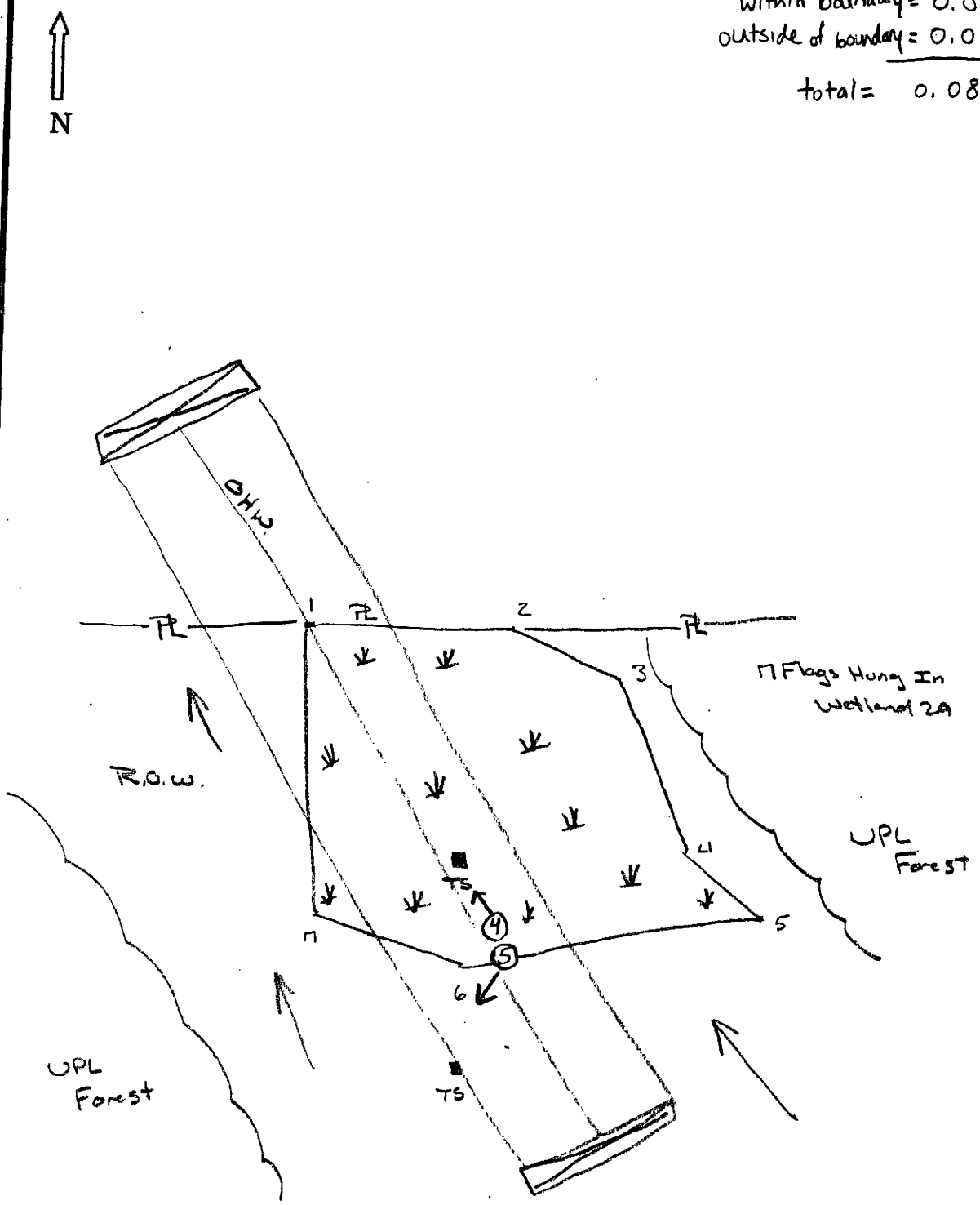
Wetland ID: Wetland 29, TS-58

Date: 3-3-08

Acres:

within boundary = 0.077
outside of boundary = 0.011
total = 0.088 acre

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 3-3-08
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** Geo XT5 **Camera:** D	**State:** PA
GPS Coordinates:	39°57' 30.38" N 80° 25' 28.30" W	**Point Name:** TS-59	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland, TS-59
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 5
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Dactylus glomerata	H	FACU	11.			
2.	Phalaris arundinacea	H	FACW+	12.			
3.	Rosa multiflora	S	FACU	13.			
4.	Glechoma hederacea	H	FACU	14.			
5.	Aster lateriflorus	H	FACW-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland, TS-59

SOILS

Map Unit Name: 15-25% (DtD)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes ✓ No _____

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10YR 3/3	None	N/A	Silt Loam
2-11		2.5Y 4/2	None	N/A	Clayey Silt Loam
11-16		10YR 5/4	None	N/A	Stoney Clay

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors

_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	_____	✓
Wetland Hydrology Present?	_____	✓
Hydric Soils Present?	_____	✓

Is this Sampling Point Within a Wetland?

Yes _____

No ✓

USFWS Classification: N/A

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS 59

Date: 3-3-08

Acres: N/A

SKETCH MAP:

N

See Sketch For Wetland 29

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 07L522.0001 CRDA No. 5			**Date:** 3-3-08
Applicant: Consol	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GeoXT5	**Camera:** D	**State:** PA
GPS Coordinates: 39° 57' 33.92" N 80° 25' 26.58" W		**Point Name:** TS-60	
Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 30, TS-60
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	**Photograph No:** 6

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Lindera benzoin	S	FACW-	11.			
2.	Salix nigra	S	FACW+	12.			
3.	Juncus effusus	H	FACW+	13.			
4.	Leersia oryzoides	H	OBL	14.			
5.	Eupatorium perfoliatum	H	FACW+	15.			
6.	Epilobium coloratum	H	OBL	16.			
7.	Onoclea sensibilis	H	FACW	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 7/7 = 100%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (inches)

Depth to Free Water in Pit: 13 (inches)

Depth to Saturated Soil: to surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:

_____ Inundated
✓ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
✓ Drainage Patterns in Wetlands

Secondary Indicators:

_____ Oxidized Root Channels in Upper 12 Inches
_____ Water Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 30 - TS 60

SOILS

Map Unit Name: 15-25% (DtD)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10YR 3/2	none	N/A	mucky peat
2-11		5Y 4/1	10YR 5/8	few/medium	clayey silt loam
11-16		5Y 5/1	10YR 5/8	common/fine	clay loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes ✓	No _____
Hydric Soils Present?	Yes ✓	No _____

Is this Sampling Point Within a Wetland?

Yes ✓

No _____

USFWS Classification: PEM/PSS

Remarks:

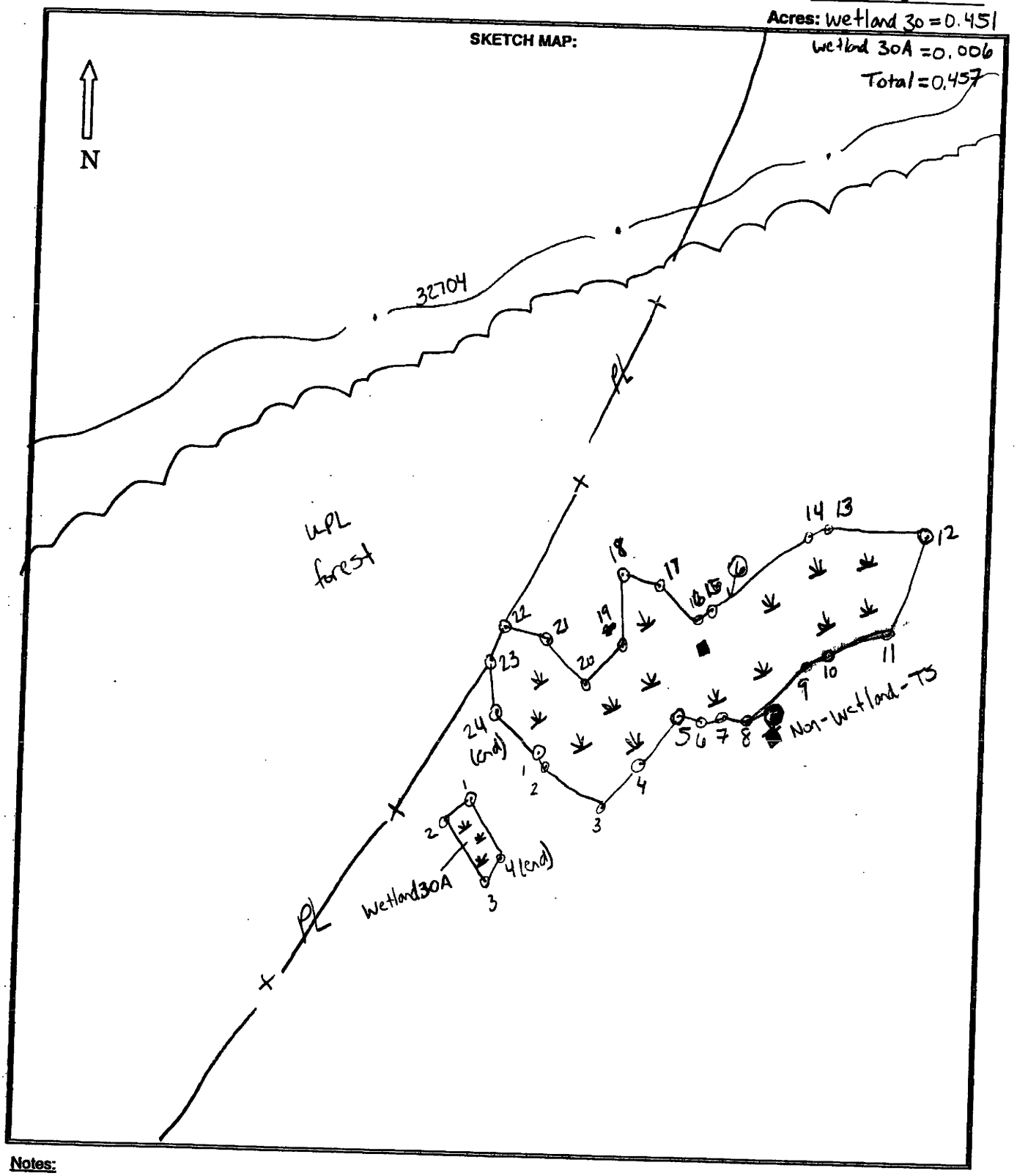
Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Wetland 30 - TS 60

Date: 3-3-08

Acres: wetland 30 = 0.451
wetland 30A = 0.006
Total = 0.457

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 3-3-08
Applicant: Consol	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLJ, LCPS	**GPS Unit:** GeoXT5	**Camera:** D	**State:** PA
GPS Coordinates: 39°57'33.47"N 80°25'25.84"W	**Point Name:** TS-61		
Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland, TS 61
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 7
Is the area a potential problem area? (If needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Ulmus americana	T	FACW-	11.			
2.	Fraxinus sp.	T	N.I.	12.			
3.	Lindera benzoin	S	FACW-	13.			
4.	Symphoricarpos albus	S	FACU-	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 2/3 = 67%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16" (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland, TS 61

SOILS

Map Unit Name: 15-25% (DtD)
(Series and Phase): Dormont-Cullcoka silt loams
(Taxonomy Subgroup): Ultic Hapludalfs
Drainage Class: moderately well/well drained
Field Observations Confirm Mapped Type? Yes ✓ No ____

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-10		10YR 4/3	none	N/A	silt loam
10-16		10YR 5/6	none	N/A	silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ____ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?		✓
Hydric Soils Present?		✓

Is this Sampling Point Within a Wetland? Yes ____ No ✓

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS 61

Date: 3-3-08

Acres: ——

SKETCH MAP:

N

please see sketch for
Wetland 30 - TS 60 for
Non-Wetland - TS 61 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071522.0001 CRDA No. 5			**Date:** 3-3-08
Applicant: Consol	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GeoXT5	**Camera:** D	**State:** PA
GPS Coordinates: 39° 57' 37.45" N 80° 25' 26.97" W	**Point Name:** TS-62		

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 31-TS 62
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 8
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Salix nigra	T/S	FACW+	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Leersia oryzoides	H	OBL	13.			
4.	Aster lateriflorus	H	FACW-	14.			
5.	Scirpus polyphyllus	H	OBL	15.			
6.	Carex sp.	H	N.I.	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: — (inches)	____ Drift Lines
Depth to Free Water in Pit: 3 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	✓ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5
Wetland ID: Wetland 31-TS 62

SOILS

Map Unit Name: 25-50% (DtF)
(Series and Phase): Dormont-Cullcoka silt loams
(Taxonomy Subgroup): Ultic Hapludalfs
Drainage Class: moderately well/well drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		5Y 4/1	ORCs 10YR 4/6	common/ medium to coarse	Sandy silt loam
5-16		2.5Y 4/1	5YR 5/8	few/medium	loamy silt

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?
Yes ✓
No _____

USFWS Classification: PEM/PSS

Remarks:

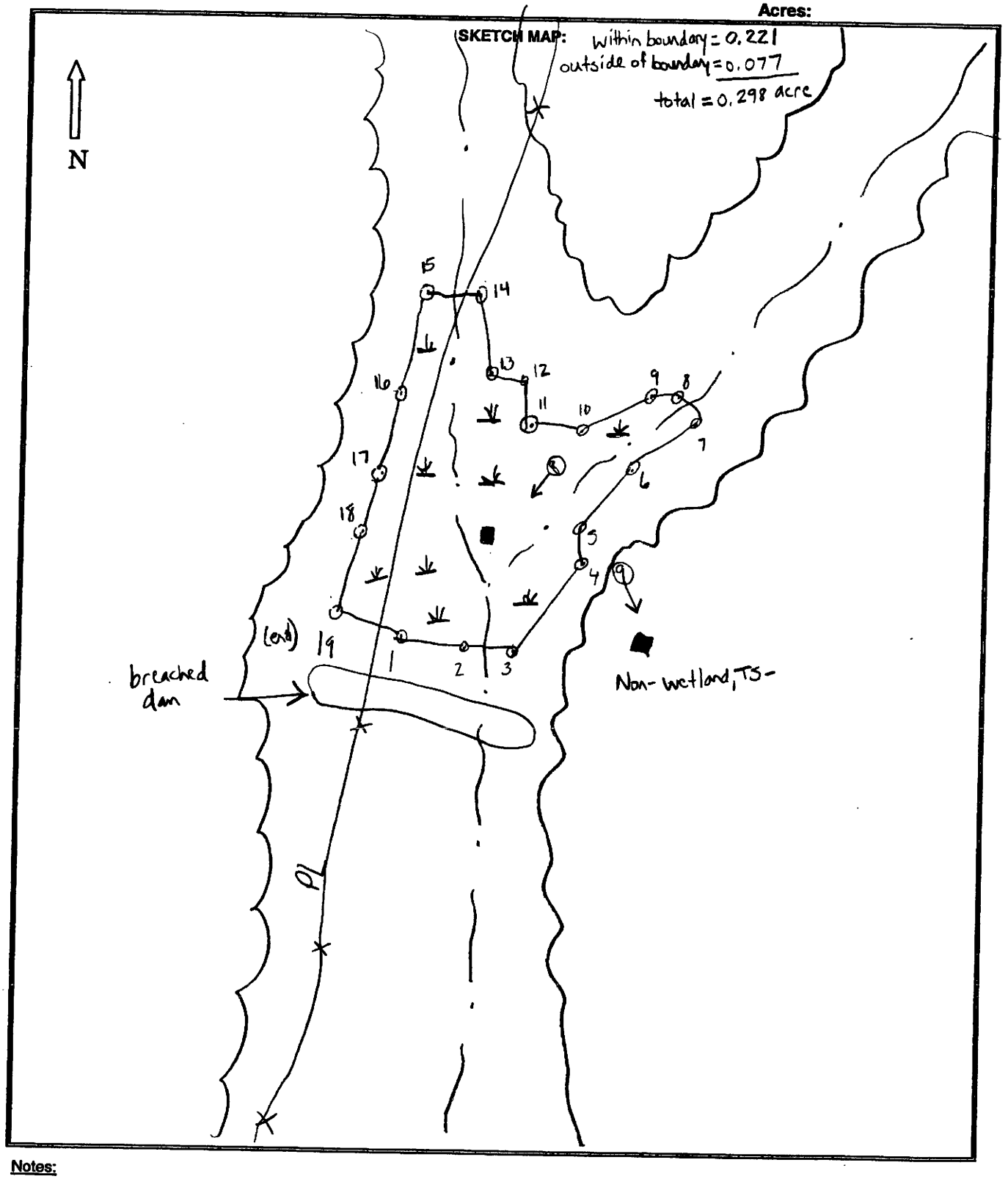
Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Wetland 31- TS 62

Date: 3-3-08

Acres:

SKETCH MAP: Within boundary = 0.221
outside of boundary = 0.077
total = 0.298 acre



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 3-3-08
Applicant: Consol	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GaxT5	**Camera:** D	**State:** PA
GPS Coordinates: 39°57'37.21" N 80°25'26.25" W	**Point Name:** T5-63		
Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland, T5 63
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (If needed, explain on reverse.)	Yes	No ✓	**Photograph No:** 9

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Quercus alba	T	FACU-	11.			
2.	Acer saccharum	T	FACU-	12.			
3.	Crataegus sp.	T	N.I.	13.			
4.	Liriodendron tulipifera	T	FACU	14.			
5.	Rosa multiflora	S	FACU	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 0/4 = 0%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS 63

SOILS

Map Unit Name: 25-50% (DtF)

(Series and Phase): Dormont-Cullcoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes ✓ No _____

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		2.5Y 4/3	none	N/A	silt loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- _____ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	_____	✓
Wetland Hydrology Present?	_____	✓
Hydric Soils Present?	_____	✓

Is this Sampling Point Within a Wetland?

Yes _____

No ✓

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland-TS 63

Date: 3-3-08

Acres: ——

SKETCH MAP:

N

please see Wetland 31-TS 62
sketch for
Non-Wetland-TS 63
location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 3-5-08
Applicant: CONSOL	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GeoXT S	**Camera:** D	**State:** PA
GPS Coordinates: 39°57'36.06"N 80°25'24.46"W	**Point Name:** TS-64		

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 32, TS-64
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	**Photograph No:** 10

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Onoclea sensibilis	H	FACW	11.			
2.	Boehmeria cylindrica	H	FACW+	12.			
3.	Poa sp.	H	N.I.	13.			
4.	Agrimonia parviflora	H	FAC	14.			
5.	Lindera benzoin	S	FACW-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/4 = 100%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: To Surface (inches)

Depth to Saturated Soil: To Surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
✓ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators:
_____ Oxidized Root Channels in Upper 12 Inches
✓ Water Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Approximately 2" of rain in past 24 hrs.

Project/Site: 071-522.0001 CRPA No. 5

Wetland ID: Wetland 32, TS-64

SOILS

Map Unit Name: 15-25% (DtD)

(Series and Phase): Dermont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10YR4/2	None	N/A	Silt Loam
5-16		2.5Y5/2	7.5YR 5/8	Common/Fine-Med.	Clayey Silt Loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?

Yes ✓

No _____

USFWS Classification: PSS

Remarks:

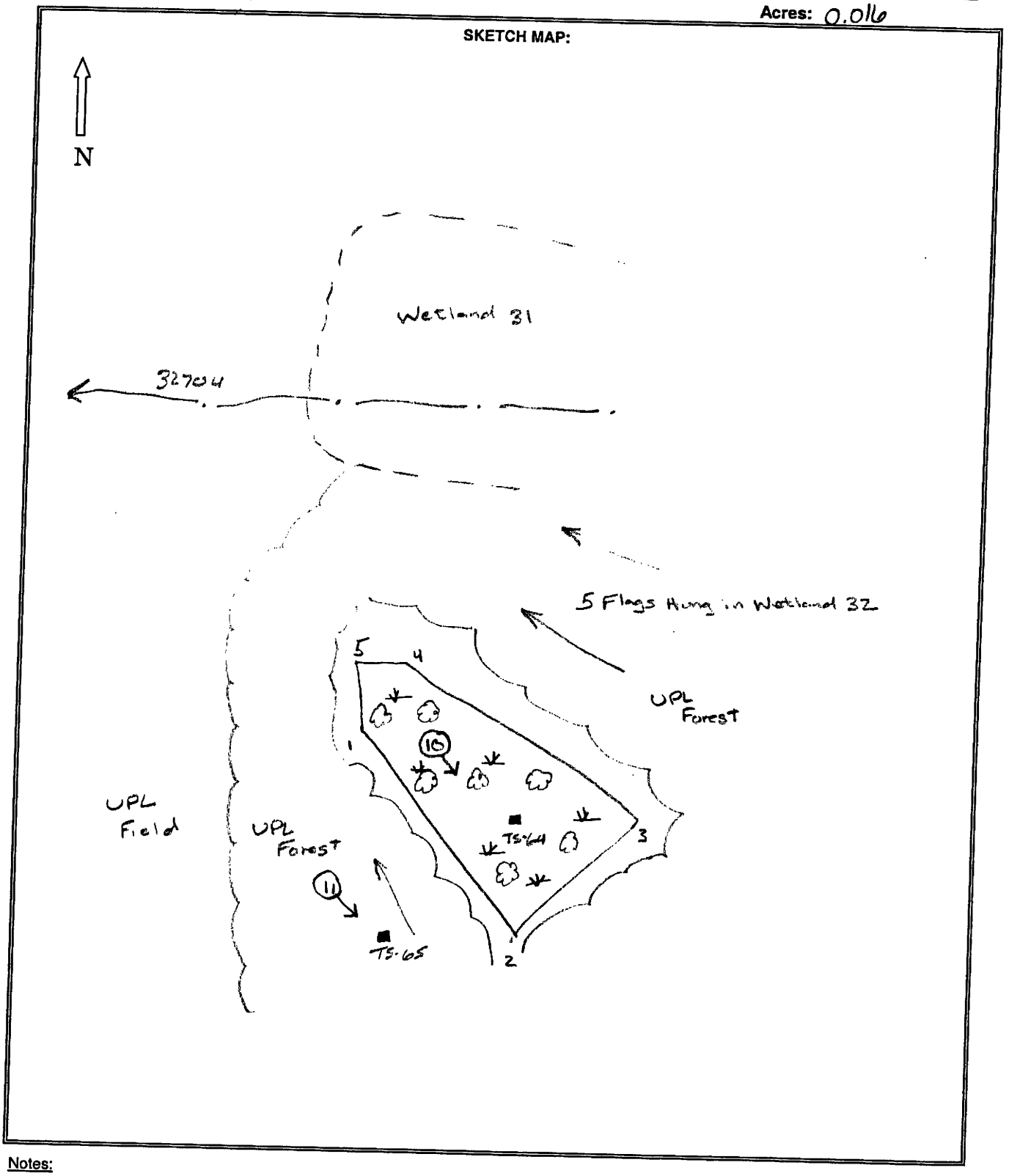
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 32, TS-64

Date: 3-5-08

Acres: 0.016

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 3-5-08
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT5 **Camera:** D	**State:** PA
GPS Coordinates:	39°57'35.85"N 80° 25'24.76"W	**Point Name:** TS-65	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-65
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 11
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Pyrus sp.	T/S	N.I.	11.			
2.	Fraxinus sp.	T	N.I.	12.			
3.	Ulmus americana	T	FACW-	13.			
4.	Rosa multiflora	S	FACU	14.			
5.	Symphoricarpos albus	S	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/3 = 33%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 14 (inches)	____ Sediment Deposits
Depth to Saturated Soil: 6 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Approximately 2" of rain in prior 24hrs

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-65

SOILS

Map Unit Name: 15-25% (DtD)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes ✓ No _____

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		2.5Y4/3	None	N/A	Silt Loam
5-16		10YR 5/6	None	N/A	Clay Loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	*Yes ✓	No _____	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: N/A

Remarks:

* Hydrology likely a result of recent precipitation

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-65

Date: 3-5-08

Acres: ——

SKETCH MAP:

N

See Sketch Map for Wetland 32, TS-64

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 3-5-08
Applicant: Consol	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GeoXT5	**Camera:** D	**State:** PA
GPS Coordinates: 39°57'41.95"N 80°25'21.02"W	**Point Name:** TS-66		
Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 33-TS 66
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 15
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Ulmus americana	T	FACW-	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Senecio aureus	H	FACW	13.			
4.	Boehmeria cylindrica	H	FACW+	14.			
5.	Agrimonia parviflora	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 4 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 33-TS 66

SOILS

Map Unit Name: 25-50% (DtF)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		2.5Y 4/2	10YR 5/8	common/fine	clayey silt loam
5-16		2.5Y 6/2	10YR 5/6	common/coarse	clay loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

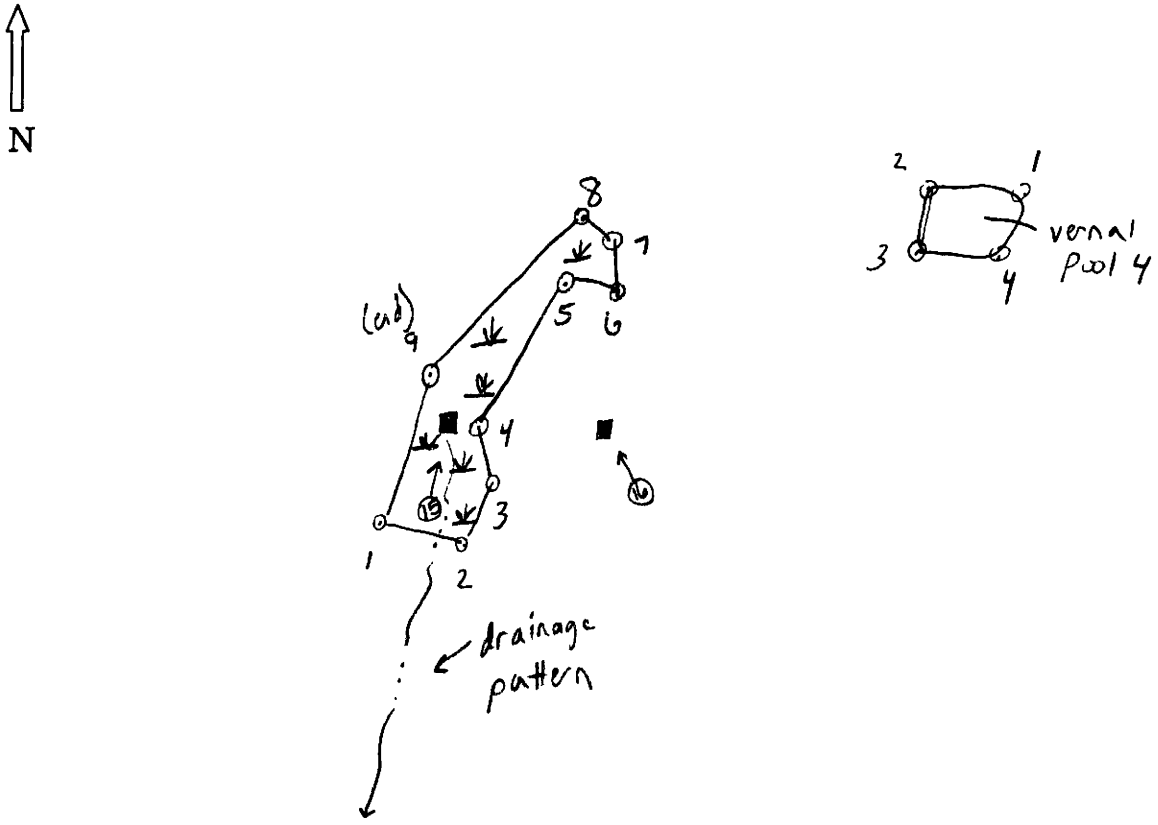
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 33 - TS 66

Date: 3-5-08

Acres: 0.025

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 3-5-08
Applicant: Consol	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GeoXT5	**Camera:** D	**State:** PA
GPS Coordinates: 39°57'41.79"N 80°25'20.67"W	**Point Name:** TS-67		

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-wetland-TS 67
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 16
Is the area a potential problem area?	Yes	No ✓	
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Fraxinus sp.	T	N.I.	11.			
2.	Acer saccharum	T	FACU-	12.			
3.	Prunus serotina	T	FACU	13.			
4.	Lindera benzoin	S	FACW-	14.			
5.	Rosa multiflora	S	FACU	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1/) 1/4 = 25%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 12 (inches)	____ Sediment Deposits
Depth to Saturated Soil: Top 10 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-322.0001 CRDA No. 3

Wetland ID: Non-wetland- TS 167

SOILS

Map Unit Name: 25-50% (DtF)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes ✓ No _____

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-10		10YR4/3	None	N/A	Silt Loam
10-16		10YR5/6	None	N/A	Clay Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: N/A

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-67

Date: 3-5-08

Acres: —

SKETCH MAP:

N

please refer to the sketch for
Wetland 33- TS 66 for
Non-Wetland, TS 67 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 3-5-08
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT5 **Camera:** D	**State:** PA
GPS Coordinates:	39°57'40.44"N 80°25'24.90"W	**Point Name:** TS-68	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 34-TS68
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 17
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Ulmus americana	T	FACW-	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Rosa multiflora	S	FACU	13.			
4.	Boehmeria cylindrica	H	FACW+	14.			
5.	Polygonum sagittatum	H	OBL	15.			
6.	Aster lateriflorus	H	FACW-	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/6 = 83%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: 0 (inches)

Depth to Saturated Soil: to surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
✓ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
✓ Drainage Patterns in Wetlands

Secondary Indicators:
_____ Oxidized Root Channels in Upper 12 Inches
✓ Water Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 34-T568

SOILS

Map Unit Name: 25-50% (DtF)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-7		10YR 4/3	10YR 5/8	few/fine	silt loam
7-16		10YR 6/2	10YR 5/8	common/fine	clayey silt loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes ✓	No _____
Hydric Soils Present?	Yes ✓	No _____

Is this Sampling Point Within a Wetland?

Yes ✓

No _____

USFWS Classification: PSS

Remarks:

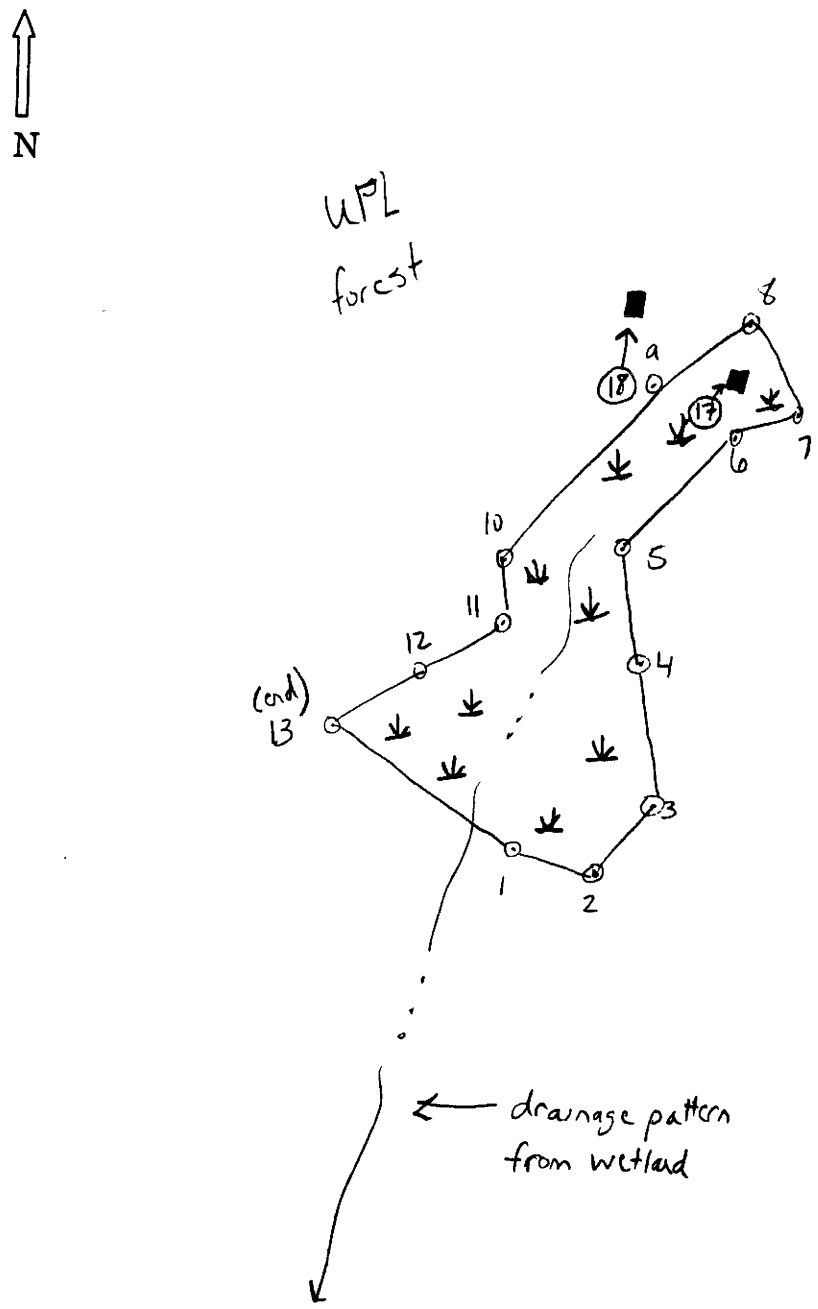
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 34-TS 68

Date: 3-5-08

Acres: 0.070

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	07F 522.0001 CRDA No. 5		**Date:** 3-5-08
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT5 **Camera:** D	**State:** PA
GPS Coordinates:	39° 57' 40.65" N 80° 25' 25.15" W	**Point Name:** TS-69	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-wetland-TS 69
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 18
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Ulmus americana	T	FACW-	11.			
2.	Crataegus sp.	T	N.I.	12.			
3.	Lindera benzoin	S	FACW-	13.			
4.	Symphoricarpos albus	H	FACU-	14.			
5.	Glechoma hederacea	H	FACU	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/4 = 50%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
_____ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators:
_____ Oxidized Root Channels in Upper 12 Inches
_____ Water Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland TS-69

SOILS

Map Unit Name: 25-50% (DtF)

(Series and Phase): Dormont-Culleoka silt loams

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well/well drained

Field Observations Confirm Mapped Type?

Yes ✓ No ____

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR 4/2	none	N/A	silt loam
4-16		10YR 5/4	none	N/A	clayey silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ____ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ____	No ✓
Wetland Hydrology Present?	Yes ____	No ✓
Hydric Soils Present?	Yes ____	No ✓

Is this Sampling Point Within a Wetland?

Yes ____

No ✓

USFWS Classification: —

Remarks:

Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Non-wetland - TS-69

Date: 3-5-08

Acres: —

SKETCH MAP:

N

Please see sketch for Wetland-34, TS-68
for Non-Wetland, TS-69 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-28-07
Applicant:	Consol	**Parcel/Owner:** Consol	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** Rental ★ **Camera:** D	**State:** PA
GPS Coordinates:	39° 57' 1.42" N 80° 24' 56.52" W	**Point Name:** TS-100	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 100
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 1
(if needed, explain on reverse.)			

★ GPS pts. taken on 8-29-07

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Sambucus canadensis	S	FACW-	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Phalaris arundinacea	H	FACW+	13.			
4.	Impatiens sp.	H	FACW	14.			
5.	Typha latifolia	H	OBL	15.			
6.	Polygonum sagittatum	H	OBL	16.			
7.	Rudbeckia laciniata	H	FACW	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 7/7 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 15.5 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	✓ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 100

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		10YR 4/3	None	N/A	Sandy silt loam
6-9		2.5Y 4/2	1) 10R 3/6 2) 2.5YR 5/8	1) few/medium to coarse 2) common/fine to medium	loamy silt
9-16		2.5Y 4/1	none	N/A	loamy silt

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

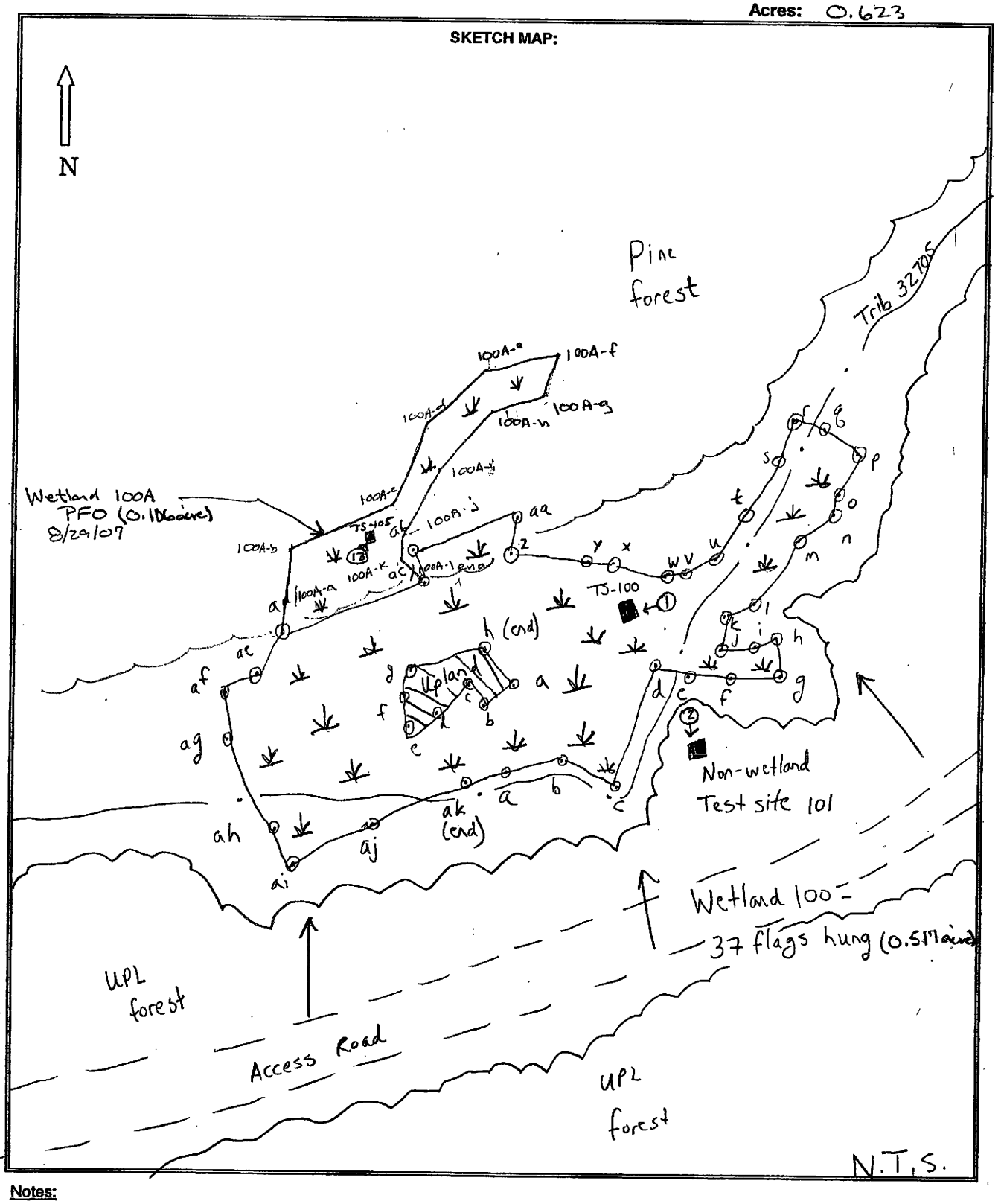
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 100

Date: 8-28-07

Acres: 0.623

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-28-07
Applicant:	Consol	**Parcel/Owner:** Consol	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** Rental* **Camera:** D	**State:** PA
GPS Coordinates:	39° 57' 0.81" N 80° 24' 56.09" W	**Point Name:** T.S-101	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-wetland-TS 101
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 2
(if needed, explain on reverse.) .			

* GPS pt. taken 8-29-07

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.				12.			
3.	Lindera benzoin	S	FACW-	13.			
4.	Aster sp.	H	N.I.	14.			
5.	Toxicodendron radicans	H	FAC	15.			
6.	Satureja vulgaris	H	UPL	16.			
7.	Glechoma hederacea	H	FACU	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: N/A (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: N/A (inches)	Secondary Indicators:
Depth to Saturated Soil: N/A (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-wetland TS-101

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 5/4	None	N/A	silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: N/A

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland - TS 101

Date: 8-28-07

Acres: —

SKETCH MAP:

N

see sketch for Wetland 100

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	07/522.0001 CRDA No. 5		**Date:** 8/28/07
Applicant:	CONSOL	**Parcel/Owner:** CONSOL	**County:** Greene
Investigator(s):	LCPS, JWC	**GPS Unit:** N/A **Camera:** D	**State:** PA
GPS Coordinates:	39° 59' 6.36" N 80° 24' 54.12" W	**Point Name:** TS-102	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 101
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 3
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Lindera benzoin	S	FACW-	11.			
2.	Acer negundo	S	FAC+	12.			
3.	Impatiens capensis	H	FACW	13.			
4.	Amphicarpa bracteata	H	FAC	14.			
5.	Aster prenanthoides	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: 12 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Wetland 101, TS-102

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-8		10YR 4/3	N/A	None	Gravelly silt loam
8-16		2.5Y 3/1	7.5YR 5/6	Few/Coarse	Gravelly sand loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	✓	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM/SS

Remarks:

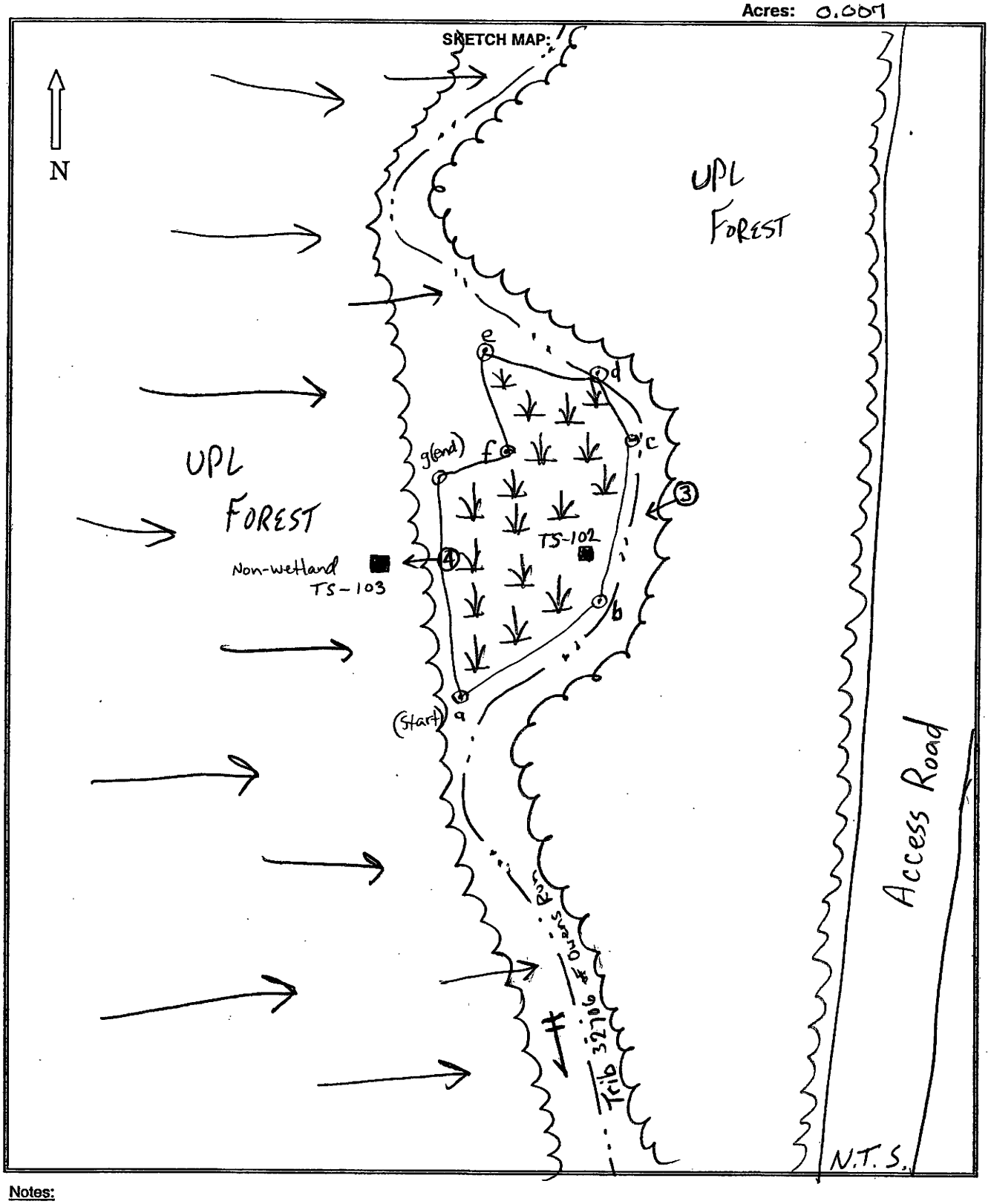
Project/Site: 071 522.0001 CRDA No. 5

Wetland ID: Wetland 101, TS-102

Date: 8/28/07

Acres: 0.007

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071522.0001 CRDA No.5		**Date:** 8/28/07
Applicant:	CONSOL	**Parcel/Owner:** CONSOL	**County:** Greene
Investigator(s):	LCPS, JWC **GPS Unit:** NA	**Camera:** D	**State:** PA
GPS Coordinates:	39°57'6.53"N 80°24'54.30"W	**Point Name:** TS-103	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Non-Wetland TS-103
Is the area a potential problem area?	Yes	No ✓	**Photograph No:**
(if needed, explain on reverse.)			4

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Polystichum acrostichoides	H	FACU-	12.			
3.	Viola sp.	H	N.I.	13.			
4.	Lindera benzoin	S	FACW-	14.			
5.	Sedum ternatum	H	UPL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 1/4 = 25%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: NA (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071522, 0001 CRDA No. 5

Wetland ID: Non-Wetland TS-103

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10YR 3/3	NA	None	Silt loam
5-16		10YR 4/4	NA	None	Silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓		Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓		Yes _____
Hydric Soils Present?	Yes _____	No ✓		No ✓
				USFWS Classification: —

Remarks:

Project/Site: 071522.0001 CRDA No.5

Wetland ID: Non-Wetland TS-103

Date: 8/28/07

Acres: —

SKETCH MAP:

N

See Sketch for wetland 102.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071522.0001 CRDA No. 5			**Date:** 8/28/07
Applicant: CONSOL	**Parcel/Owner:** CONSOL		**County:** Greene
Investigator(s): LCPS, JWC	**GPS Unit:** NA	**Camera:** D	**State:** PA
GPS Coordinates:		**Point Name:** TS-104	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 102-TS104
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 5
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Lindera benzoin	S	FACW-	11.			
2.	Rosa multiflora	S	FACU	12.			
3.	Impatiens capensis	H	FACW	13.			
4.	Pilea pumila	H	FACW	14.			
5.	Aster prenanthoides	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 80%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071 522.0001 CRDA No. 5

Wetland ID: Wetland 102 - TS104

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullenka silt loams (DtF) 25-50% Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10 YR 3/2	NA	None	Silt loam
4-16		10 YR 4/2	7.5 YR 4/6	Common/Medium	Clayey silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

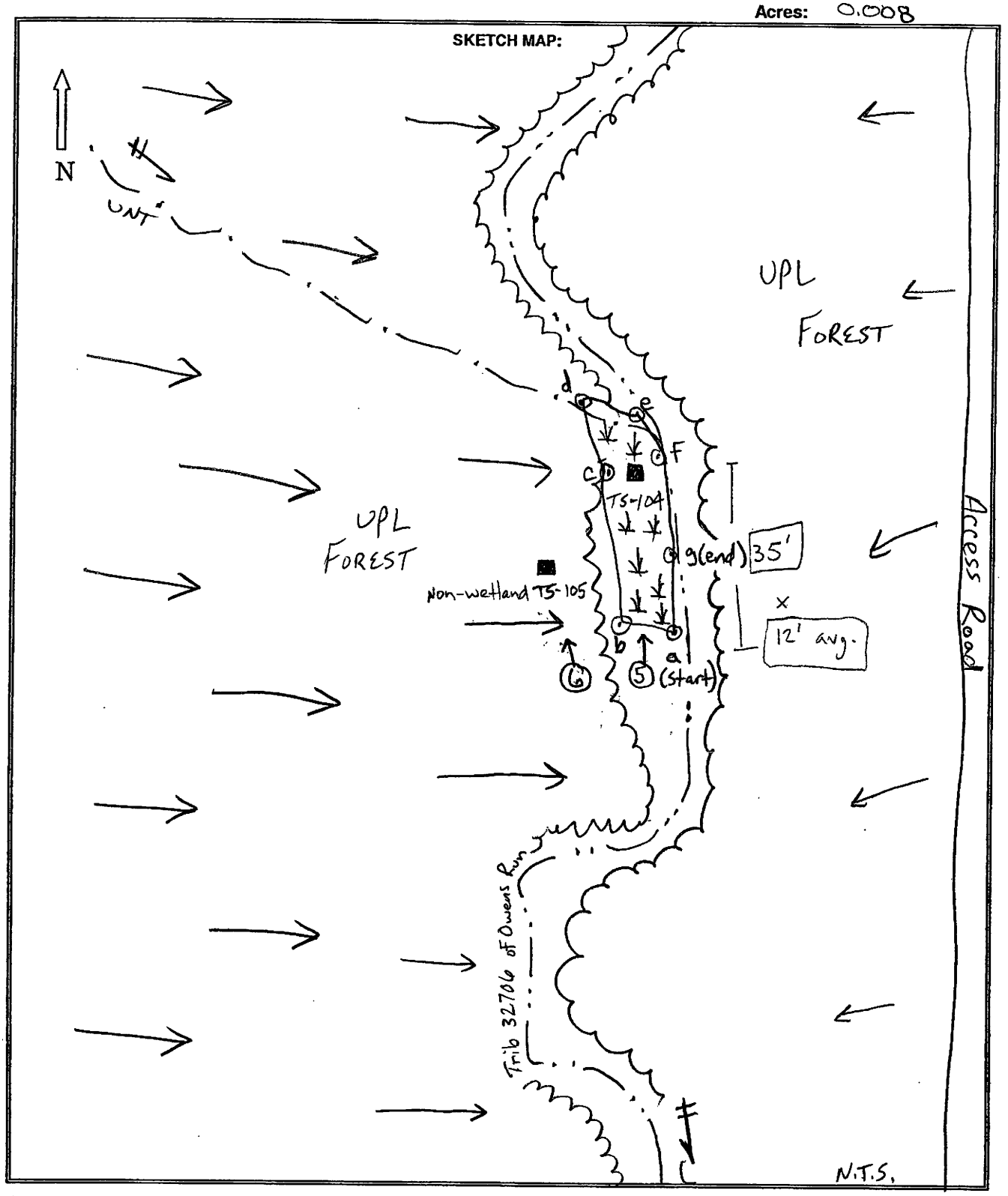
Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Wetland 102 - TS104

Date: 8/28/07

Acres: 0.008

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071522.0001 CRDA No. 5			**Date:** 8/28/07
Applicant: CONSOL	**Parcel/Owner:** CONSOL		**County:** Greene
Investigator(s): LCPS, JWC	**GPS Unit:** NA	**Camera:** D	**State:** PA
GPS Coordinates:		**Point Name:** TS 105	

Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:** Non-wetland 105
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	
Is the area a potential problem area?	Yes ____	No ✓	**Photograph No:** 6
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Fagus grandifolia	T	FACU	12.			
3.	Carpinus caroliniana	T	FAC	13.			
4.	Lindera benzoin	S	FACW-	14.			
5.	Sedum ternatum	H	UPL	15.			
6.	Polygonum virginianum	H	FAC	16.			
7.	Pilea pumila	H	FACW	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/7 = 57%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NA (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071522.0001 CRDA No. 5

Wetland ID: Non-Wetland 105

SOILS

Map Unit Name:

(Series and Phase): Dormont Culleoka silt loams 25-50% (DtF)

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well drained / Moderately well drained

Field Observations Confirm Mapped Type?

Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10 YR 3/2	NA	None	Clayey silt loam
4-16		10 YR 4/3	NA	None	Silt loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soil
____	Aquic Moisture Regimes	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
____	Gleyed or Low Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ____	No ✓	Yes ____
Hydric Soils Present?	Yes ____	No ✓	No ✓
			USFWS Classification: —

Remarks:

* **Project/Site:** 071522.0001 CRDA No.5

Wetland ID: Non-Wetland 105

Date: 8/28/07

Acres: —

SKETCH MAP:

N

See sketch for Wetland 104.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-29-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** rental **Camera:** A	**State:** PA
GPS Coordinates:	39°57'1.42"N 80°24'57.87"W	**Point Name:** TS-106	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 100A, TS-106
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 13
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Picea abies	T	UPL	11.			
2.	Pilea pumila	H	FACW	12.			
3.	Impatiens sp.	H	FACW	13.			
4.	Bidens frondosa	H	FACW	14.			
5.	Lobelia siphilitica	H	FACW+	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 80%

Remarks:
*Wetland located within planted stand of P. abies & is contiguous w/ wetland 100

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)*	____ Drift Lines
Depth to Free Water in Pit: 11 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	✓ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:
* Isolated pooling ≈ 1" in depressions

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 100A TS-106

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		2.5Y4/3	None	N/A	Sandy Silt Loam
4-8		2.5Y4/2	10YR4/6	Few / Fine	Silt Loam
8-16		5Y4/2	7.5YR4/6	Common / Medium	Silt Loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?
Yes ✓
No _____

USFWS Classification: PFO

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 100A TS-106

Date: 8-29-07

Acres: 0.106

SKETCH MAP:

N

See sketch map for wetland 100

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5	**Date:**	8-29-07
Applicant:	CONSOL **Parcel/Owner:** Consol	**County:**	Greene
Investigator(s):	MLS, LCPS **GPS Unit:** Rental **Camera:** A	**State:**	PA
GPS Coordinates:	39° 57' 24.54"N 80° 25' 1.15"W **Point Name:** TS-107		

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland -103, TS-107
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 14
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Salix nigra	T/S	FACW+	11.			
2.	Glyceria striata	H	OBL	12.			
3.	Scirpus atrovirens	H	OBL	13.			
4.	Impatiens sp.	H	FACW	14.			
5.	Agrimonia parviflora	H	FAC	15.			
6.	Carex vulpinoidea	H	OBL	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 6/6 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 14 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 103 - TS107

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams 25-30% (DtF) Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		2.5Y 5/2	7.5YR 4/4	few/fine	gravelly loamy silt
6-16		2.5Y 5/2	10YR 4/4	few/fine	gravelly clay loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

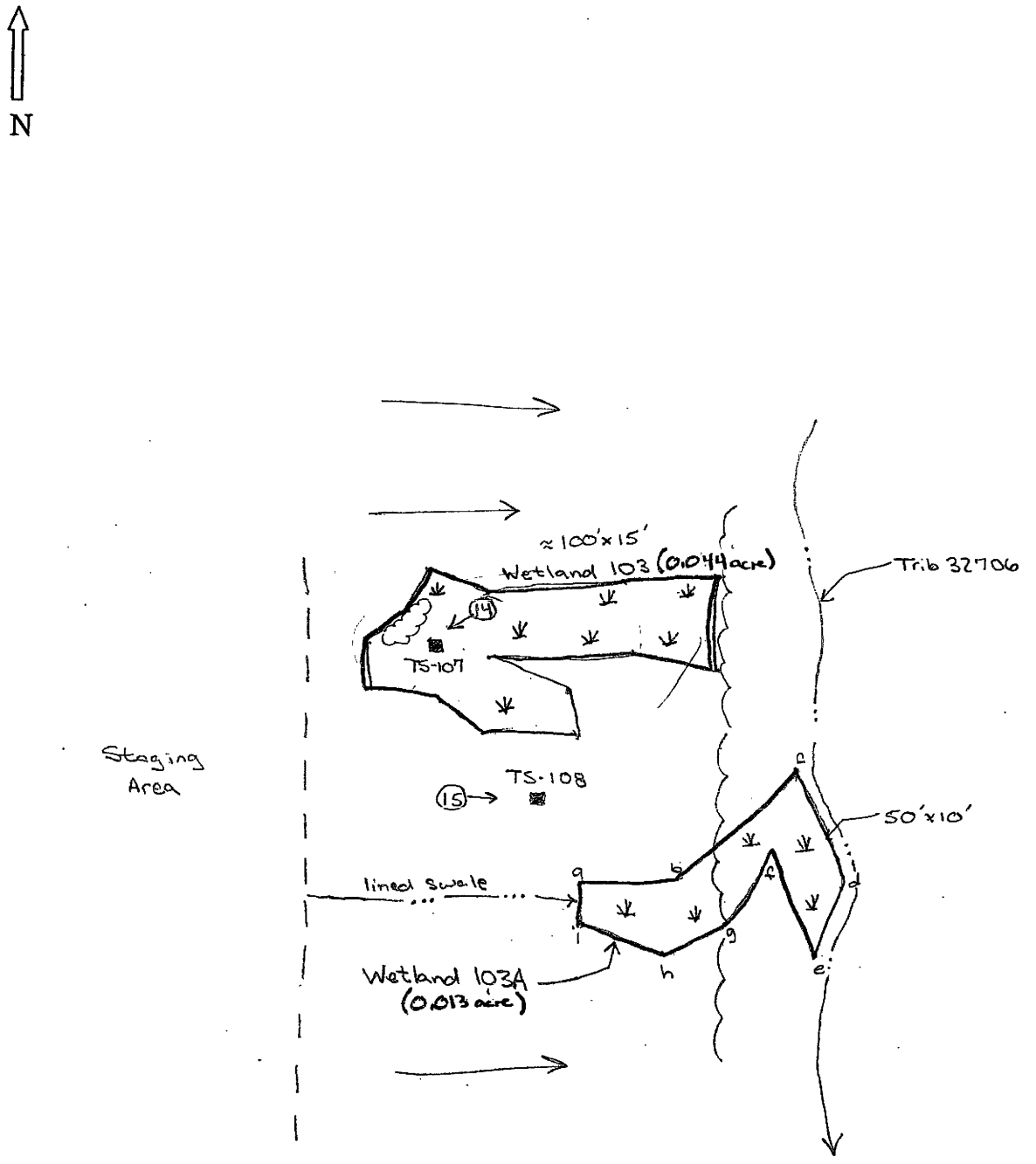
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 103, TS-107

Date: 8-29-07

Acres: 0.057

SKETCH MAP:



N.T.S.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-30-07
Applicant:	Consol	**Parcel/Owner:** Consol	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39° 57' 24.27" N 80° 25' 0.71" W	**Point Name:** TS-108	
Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:** Non-wetland - TS108
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	**Photograph No:** 15
Is the area a potential problem area? (if needed, explain on reverse.)	Yes ____	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer negundo	S	FAC+	11.			
2.	Coronilla varia	H	UPL	12.			
3.	Agrimonia parviflora	H	FAC	13.			
4.	Cirsium arvense	H	FACU	14.			
5.	Achillea millefolium	H	FACU	15.			
6.	Solidago sp.	H	N.I.	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: N/A (inches)

Depth to Saturated Soil: N/A (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland - TS 108

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullerton Silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 4/3	10YR 6/8	few/ fine to medium	clayey silt loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: →

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland - TS 108

Date: 8-30-07

Acres: —

SKETCH MAP:

N

See sketch for

Wetland 103 for

Non-Wetland-TS 108 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-30-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'29.07" N 80°25'1.41" W	**Point Name:** TS-109	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 104, 104A, 104B, 104C, TS-109
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 16
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Glyceria striata	H	OBL	12.			
3.	Epilobium coloratum	H	OBL	13.			
4.	Polygonum sagittatum	H	OBL	14.			
5.	Bidens frondosa	H	FACW	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 15 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 104, 104A, 104B, & 104C, TS-109

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams (DtF) 25-50% Drainage Class: Well drained/ Moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-7		2.5Y4/2	None	N/A	Silt Loam
7-16		5Y4/1	10YR 4/6	Common/Med-Coarse	Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

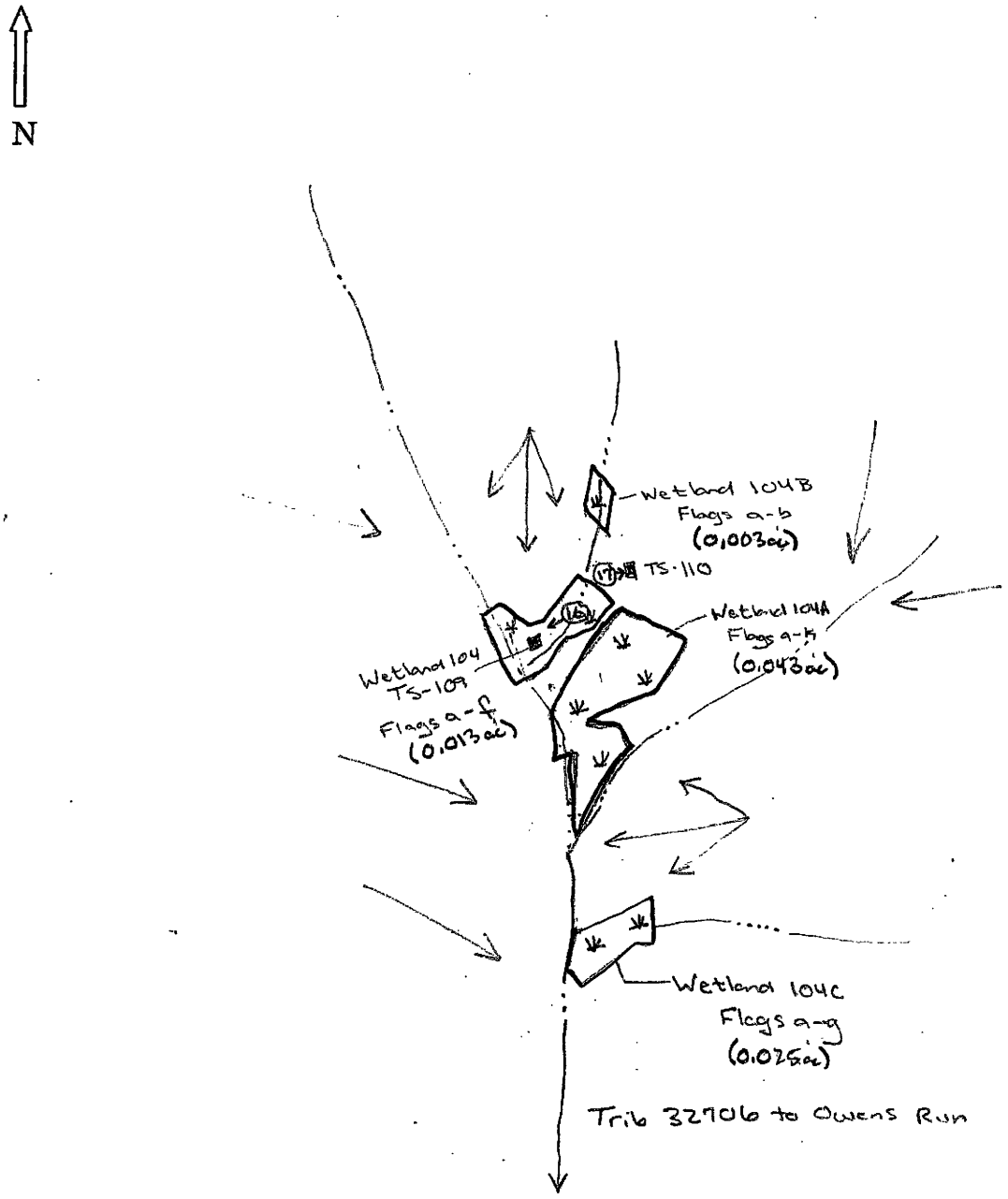
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 104, 104A, 104B, & 104C, TS-109

Date: 8-30-07

Acres: 0.084

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-30-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'29.04"N 80°25'1.11"W	**Point Name:** TS-110	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-110
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 17
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Quercus rubra	T	FACU-	12.			
3.	Cary ovata	T	FACU-	13.			
4.	Rosa multiflora	S	FACU	14.			
5.	Eupatorium rugosum	H	FACU-	15.			
6.	Poa sp.	H	N.I.	16.			
7.	Alliaria petiolata	H	FACU-	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 0/6 = 0%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-110

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF) Drainage Class: Well drained / moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR3/2	None	N/A	Silt Loam
3-16		10YR4/2	None	N/A	Silt Loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓
Wetland Hydrology Present?	Yes _____	No ✓
Hydric Soils Present?	Yes _____	No ✓

Is this Sampling Point Within a Wetland?

Yes _____

No ✓

USFWS Classification: ——

Remarks:

Project/Site: 071-522.0001 CRPA No. 5

Wetland ID: Non-Wetland, TS-110

Date: 8-30-07

Acres: —

SKETCH MAP:

N

See sketch for wetland 104, TS-109

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-30-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'25.10"N 80°24'59.74"W	**Point Name:** TS-111	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 105 & 105A TS-111
Is the area a potential problem area?	Yes	No ✓	**Photograph No:**
(if needed, explain on reverse.)			18

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Glyceria striata	H	OBL	12.			
3.	Leersia oryzoides	H	OBL	13.			
4.	Carex frankii	H	OBL	14.			
5.	Aster puniceus	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5=100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	✓ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 105 + 105A, TS-111

SOILS

Map Unit Name:
(Series and Phase): Dormont Colloeka silt loams 25-50% (DtF)
(Taxonomy Subgroup): Udic Hapludalfs

Drainage Class: well drained / moderately well drained

Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR3/2	None	N/A	Silt Loam
3-16		5Y4/1	5YR3/4	Common/medium	Clayey Silt Loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soil
____	Aquic Moisture Regimes	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No ____	Yes ✓
Hydric Soils Present?	Yes ✓	No ____	No ____
			USFWS Classification: PEM

Remarks:

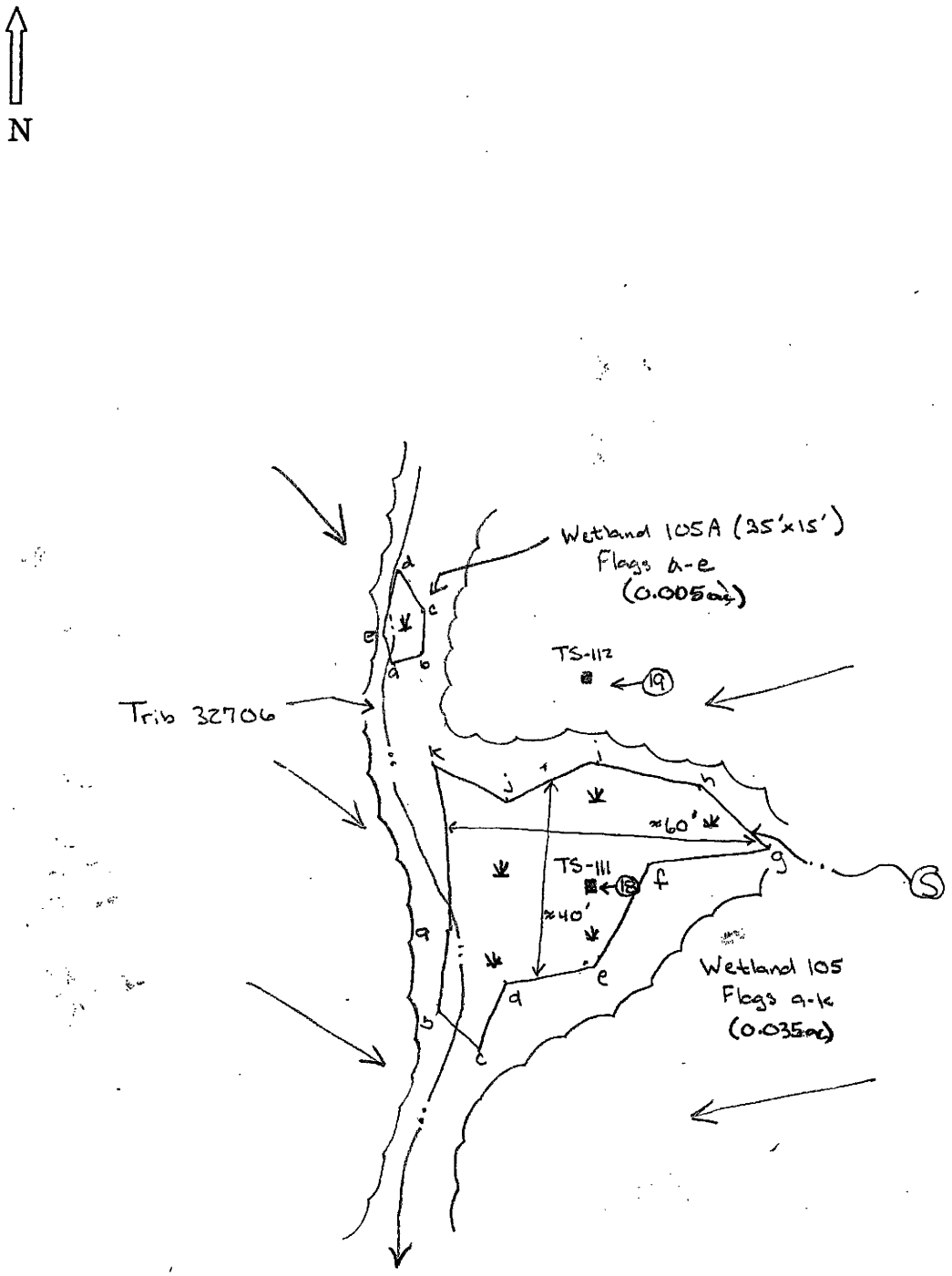
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 105 & 105A, TS-111

Date: 8-30-07

Acres: 0.040

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-30-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'25.47" N 80°24'59.84" W	**Point Name:** TS-112	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-112
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 19
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Rosa multiflora	S	FACU	13.			
4.	Eupatorium rugosum	H	FACU-	14.			
5.	Urtica dioica	H	FACU	15.			
6.	Sedum ternatum	H	UPL	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 1/6 = 17%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-112

SOILS

Map Unit Name:
(Series and Phase): Dormont Culleoka Silt loams 25-50% (DtF) Drainage Class: Well drained / Moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10YR 4/2	None	N/A	Silt Loam
2-16		10YR 5/4	None	N/A	Silt Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-112

Date: 8-30-07

Acres: —

SKETCH MAP:

N

See sketch map for Wetland 105

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-30-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'31.46"N 80°25'1.73"W	**Point Name:** TS-113	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 106, TS-113
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 20
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Pilea pumila	H	FACW	12.			
3.	Leersia virginica	H	FACW	13.			
4.	Glyceria striata	H	OBL	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 4/4 = 100 %

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 13 (inches)	✓ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 106 TS-113

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka Silt loams (DtF) 25-50%
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: well drained/ moderately well drained

Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-7		2.5Y 3/2	10YR 3/6	Few/ Medium	Silt Loam
7-11		5Y 4/1	None	N/A	Sandy Silt Loam
11-16		5Y 4/2	None	N/A	Silty Alluvium

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?
Yes ✓
No ____

USFWS Classification: PEM

Remarks:

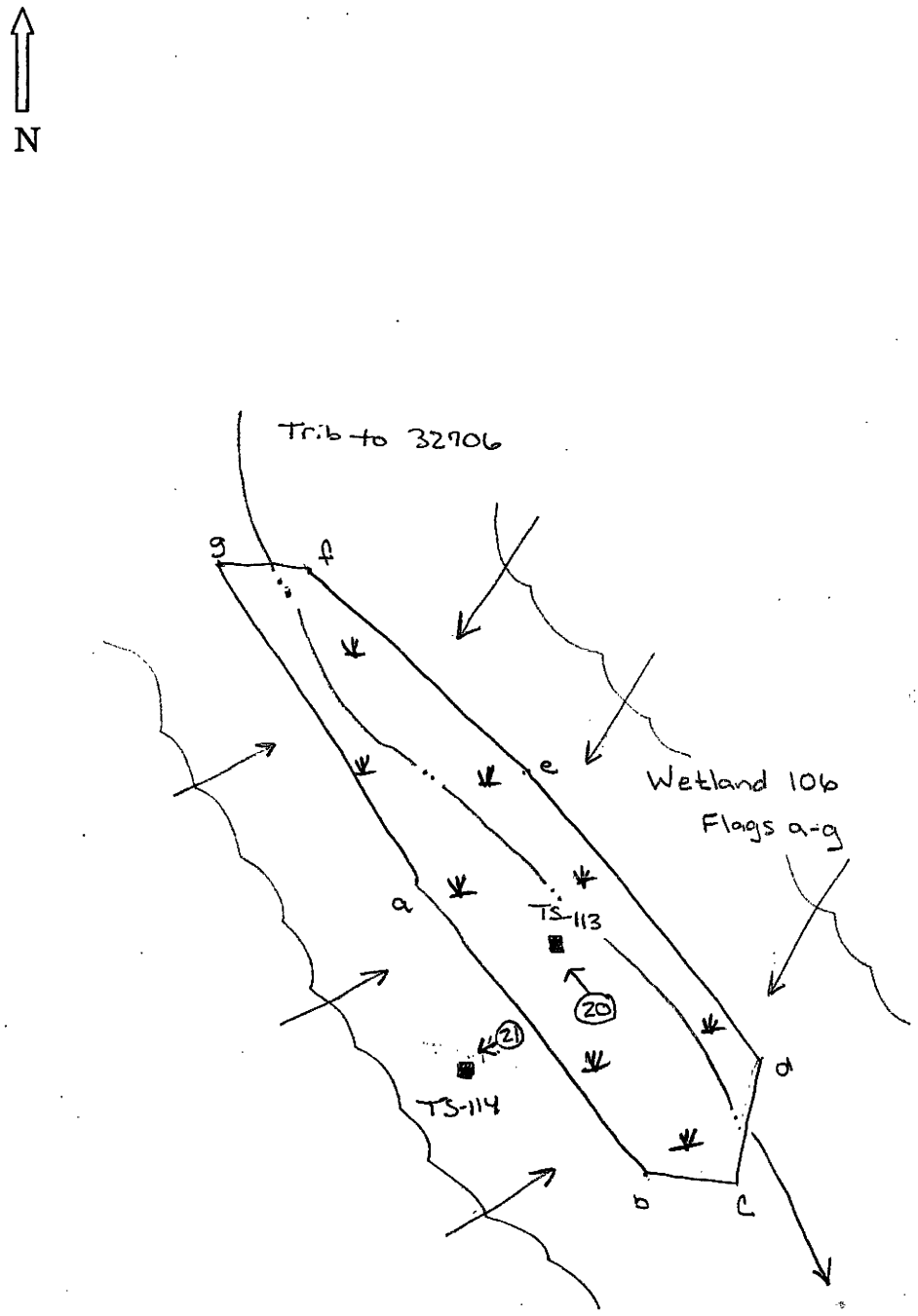
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 106, TS-113

Date: 8-30-07

Acres: 0.043

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-30-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'31.34"N 80°25'1.79"W	**Point Name:** TS-114	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-114
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 21
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer Saccharum	T	FACU-	11.			
2.	Fagus grandifolia	T	FACU	12.			
3.	Lindera benzoin	S	FACW-	13.			
4.	Eupatorium rugosum	H	FACU-	14.			
5.	Polystichum acrostichoides	H	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/5 = 20%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-114

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullenka silt loams 25-50% (DtF)
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: Well drained/ Moderately well drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		10YR 4/3	None	N/A	Silt Loam
6-12		10YR 5/6	None	N/A	Clay Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-114

Date: 8-30-07

Acres: —

SKETCH MAP:

N

See Sketch map for Wetland 106

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 8-31-07
Applicant:	Consol	**Parcel/Owner:** Consol	**County:** Greene
Investigator(s):	MLS, LCB	**GPS Unit:** GeoXT7 **Camera:** A	**State:** PA
GPS Coordinates:	39°59'29.85" N 80°24'54.76W	**Point Name:** Wetland 107 - TS 115	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 107
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	**Photograph No:** 22

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer negundo	T/S	FAC+	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Rosa multiflora	S	FACU	13.			
4.	Impatiens capensis	H	FACW	14.			
5.	Poa sp.	H	N.I.	15.			
6.	Pilea pumila	H	FACW	16.			
7.	Agrimonia parviflora	H	FAC	17.			
8.	Polygonum virginianum	H	FAC	18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 6/7 = 86%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: N/A (inches)	✓ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: to surface (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 107 - TS115

SOILS

Map Unit Name:

(Series and Phase): Dacmont-Cullenka silt loams (DtF) 25-50% Drainage Class: Well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR 4/1	7.5YR 5/8	common/medium	peaty silt
4-16		2.5Y 4/1	5YR 4/6	few/coarse	clayey silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

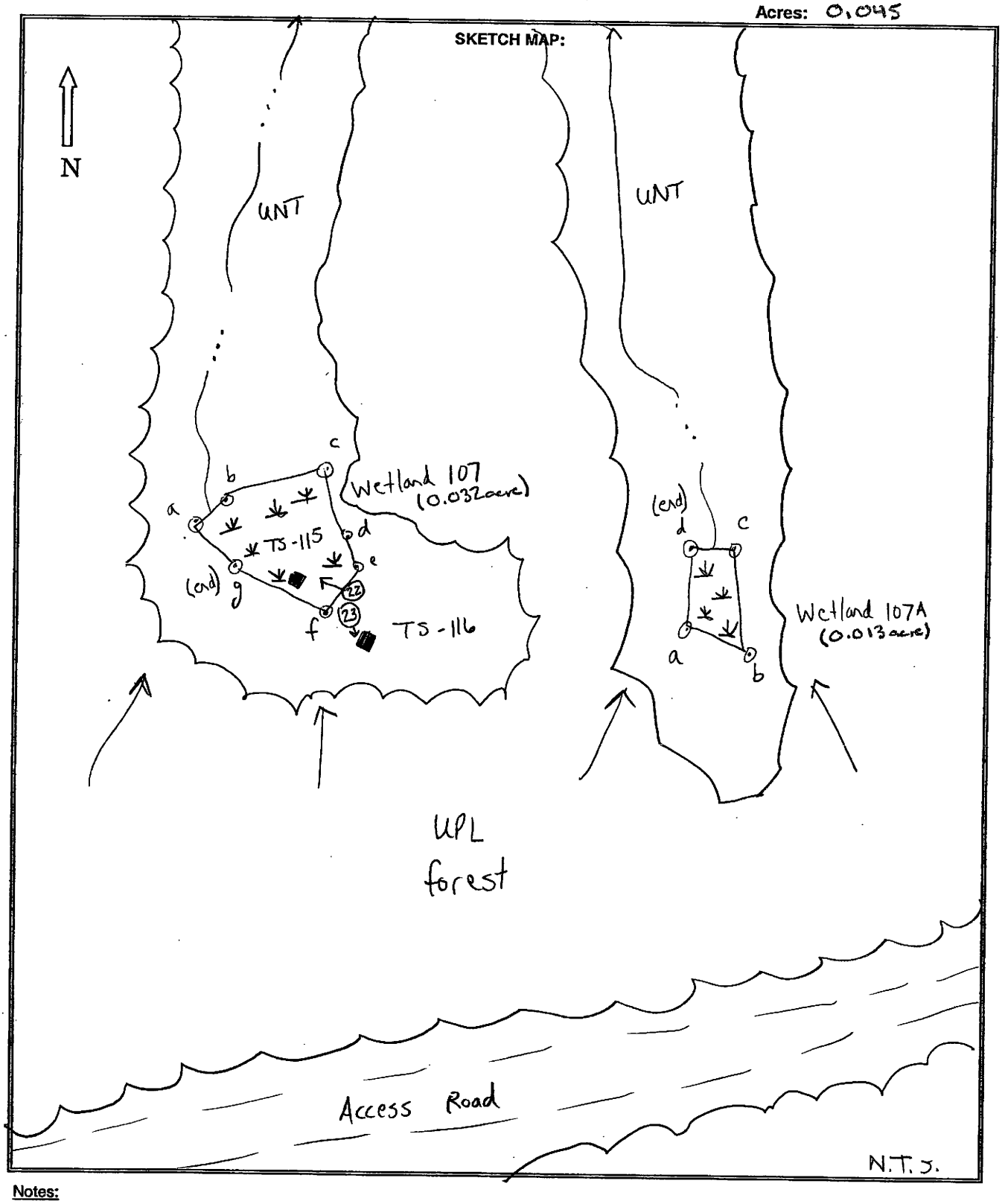
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 107 - TS115

Date: 8-31-07

Acres: 0.045

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No.5	**Date:**	8-31-07
Applicant:	Consol **Parcel/Owner:** Consol	**County:**	Greene
Investigator(s):	NLS, LCPS **GPS Unit:** GeoXT 7 **Camera:** A	**State:**	PA
GPS Coordinates:	39° 57' 29.88" N 80° 24' 54.52" W **Point Name:** TS-116		
Do normal circumstances exist on the site?	Yes ✓ No ____	**Wetland ID:**	Non-Wetland TS-116
Is the site significantly disturbed (Atypical?)	Yes ____ No ✓		
Is the area a potential problem area? (if needed, explain on reverse.)	Yes ____ No ✓	**Photograph No:**	23

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer negundo	T/S	FAC+	11.			
2.	Fraxinus americana	T	FACU	12.			
3.	Rosa multiflora	S	FACU	13.			
4.	Poa sp.	H	N.I.	14.			
5.	Glechoma hederacea	H	FACU	15.			
6.	Impatiens capensis	H	FACW	16.			
7.	[illegible]			17.			
8.	[illegible]			18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%.

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-116

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF) Drainage Class: Well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-9		10YR4/3	None	N/A	Clayey Silt Loam
9-16		10YR5/4	10YR6/2	Common/fine	Clay Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	_____	✓
Wetland Hydrology Present?	_____	✓
Hydric Soils Present?	_____	✓

Is this Sampling Point Within a Wetland?
Yes _____
No ✓

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-116

Date: 8-31-07

Acres: —

SKETCH MAP:

N

See sketch map for wetland 107, TS-115

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/6/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39° 57' 8.00" N 80° 24' 41.74" W	**Point Name:** TS 117	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 108 & 108A
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	**Photograph No:** 2

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Pilea pumila	H	FACW	12.			
3.	Carex frankii	H	OBL	13.			
4.	Carex stricta	H	OBL	14.			
5.	Aster prenanthoides	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	X Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 108 & 108A TS-117

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10YR 3/2	7.5YR 5/8	common/fine	sandy gravely silt
5-16		10Y 4/1	N 2.5/0	few/fine-medium	silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

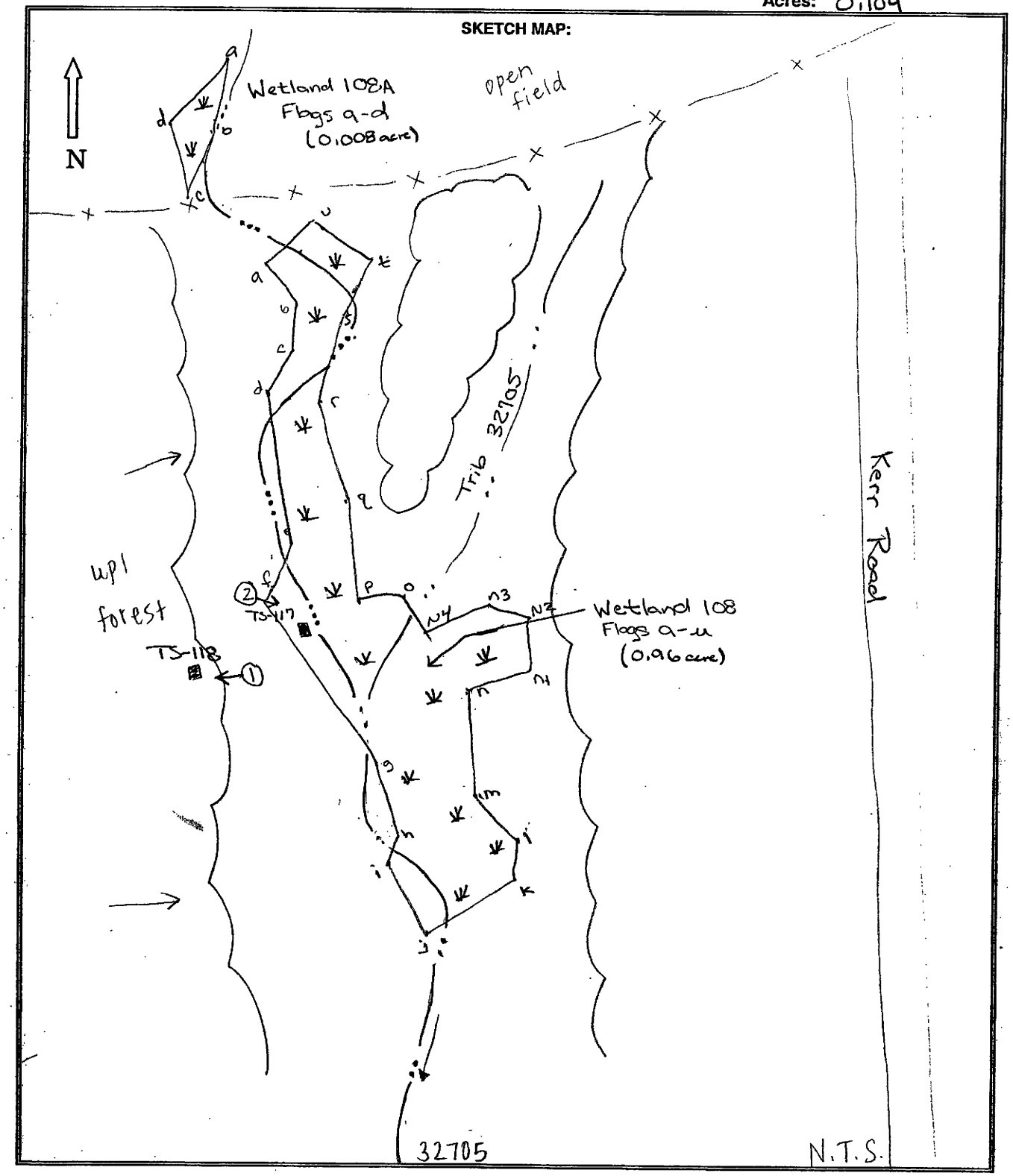
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 108 & 108A, TS-117

Date: 9/6/07

Acres: 0.104

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/6/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39°57'8.21"N 80°24'41.71"W	**Point Name:** TS 118	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Non-wetland TS 118
Is the site significantly disturbed (Atypical?)	Yes	No X	**Photograph No:** 1
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Verbesina alternifolia	H	FAC	11.			
2.	Viola sp.	H	N.I.	12.			
3.	Glechoma hederacea	H	FACU	13.			
4.	Polygonum virginianum	H	FAC	14.			
5.	Rudbeckia laciniata	H	FACW	15.			
6.	Acer saccharum	T	FACU-	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 3/5 = 60%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No hydrology indicators present.

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS 118

SOILS

Map Unit Name:
(Series and Phase): Newark silt loam 0-3% (Nw)
(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10 YR 4/2	n/a	n/a	silt loam
2-16		2.5Y 4/3	n/a	n/a	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: No hydric soil indicators present.

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	X	
Wetland Hydrology Present?		X
Hydric Soils Present?		X

Is this Sampling Point Within a Wetland?
Yes _____
No X

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS 118

Date: 9/6/07

Acres: ——

SKETCH MAP:

N

See Wetland 108
sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/6/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39° 57'12.72"N 80° 24'41.04"W	**Point Name:** TS-119	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 109
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	**Photograph No:** 3

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Carex frankii	H	OBL	12.			
3.	Polygonum sagittatum	H	OBL	13.			
4.	Pilea pumila	H	FACW	14.			
5.	Aster prenanthoides	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5
Wetland ID: Wetland 109, TS-119

SOILS

Map Unit Name:
(Series and Phase): Dormont-Cullenka silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-8		2.5Y 4/2	7.5YR 4/6	abundant/ fine	silt loam
8-16		10Y 3/1	10YR 4/4 2.5YR 3/4	common/med-coarse few/fine	clayey silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

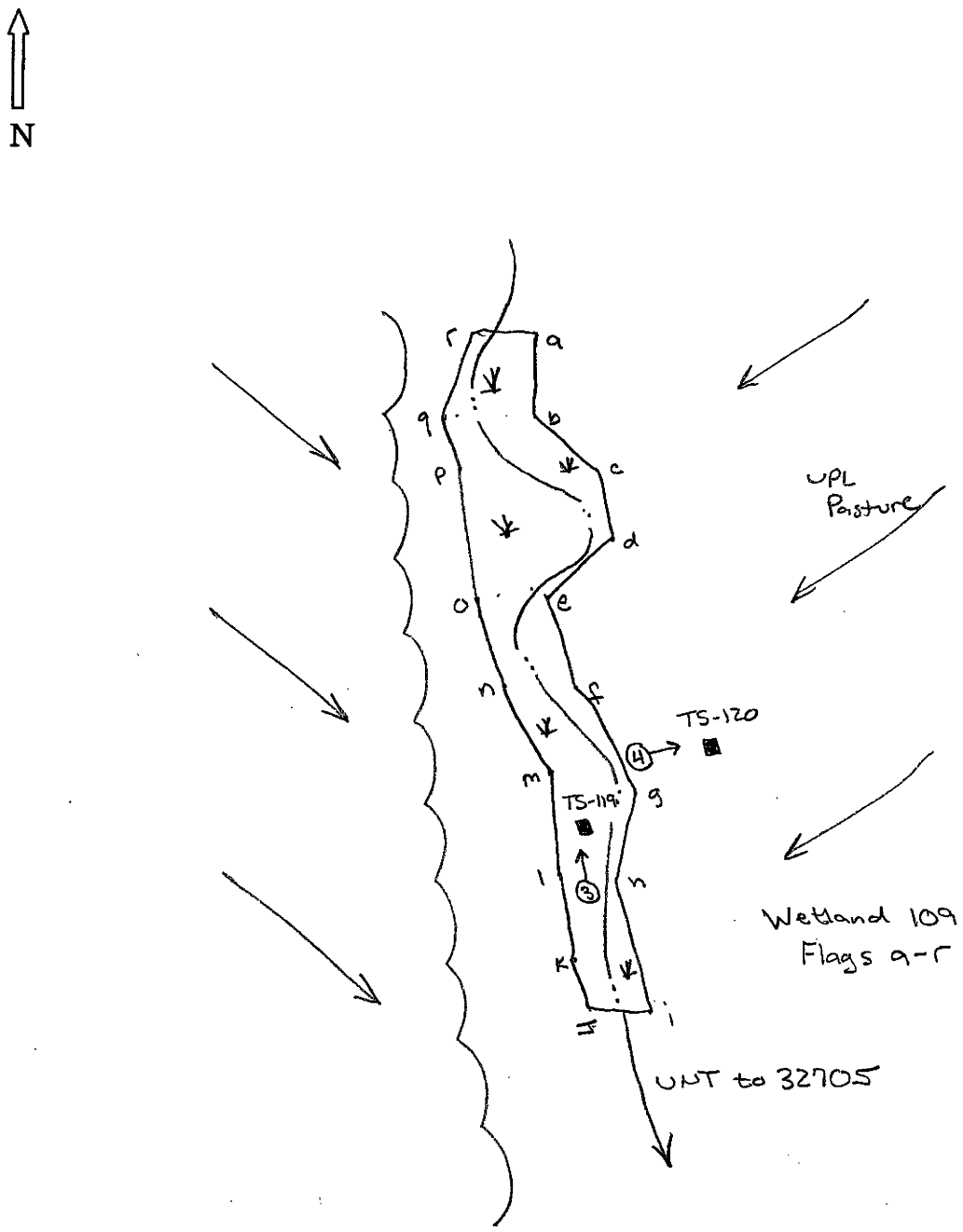
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 109, TS-119

Date: 9/6/07

Acres: 0.066

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/6/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39°57'12.92"N 80°24'40.75"W	**Point Name:** TS-120	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Non-Wetland TS120
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	**Photograph No:** 4
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Poa sp.	H	N.I.	11.			
2.	Ambrosia artemisiifolia	H	FACU	12.			
3.	Vernonia gigantea	H	FAC	13.			
4.	Digitaria sanguinalis	H	FACU-	14.			
5.	Polygonum persicaria	H	FACW	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/4 = 50%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No hydrology indicators present.

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS 120

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams (DtF) 25-50% Drainage Class: Well drained / moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		2.5 Y 5/4	10 YR 5/8	few / fine	silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks: No hydric soil indicators present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No	X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No	X	Yes _____
Hydric Soils Present?	Yes _____	No	X	No X
				USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland TS-120

Date: 9/6/07

Acres: —

SKETCH MAP:

N

See Wetland 109
sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/6/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39°57'15.86"N 80°24'41.40"W	**Point Name:** TS-121	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 110 & 110A
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	**Photograph No:** 5
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Polygonum sagittatum	H	OBL	12.			
3.	Carex frankii	H	OBL	13.			
4.	Polygonum persicaria	H	FACW	14.			
5.	Scirpus atrovirens	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: n/a (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: to surface (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 110 & 110A TS-121

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF) Drainage Class: Well drained/ Moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10 YR 3/2	7.5 YR 5/8	common/medium	silt loam
2-16		5 Y 4/1	10 YR 4/6	abundant/medium-coarse	silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

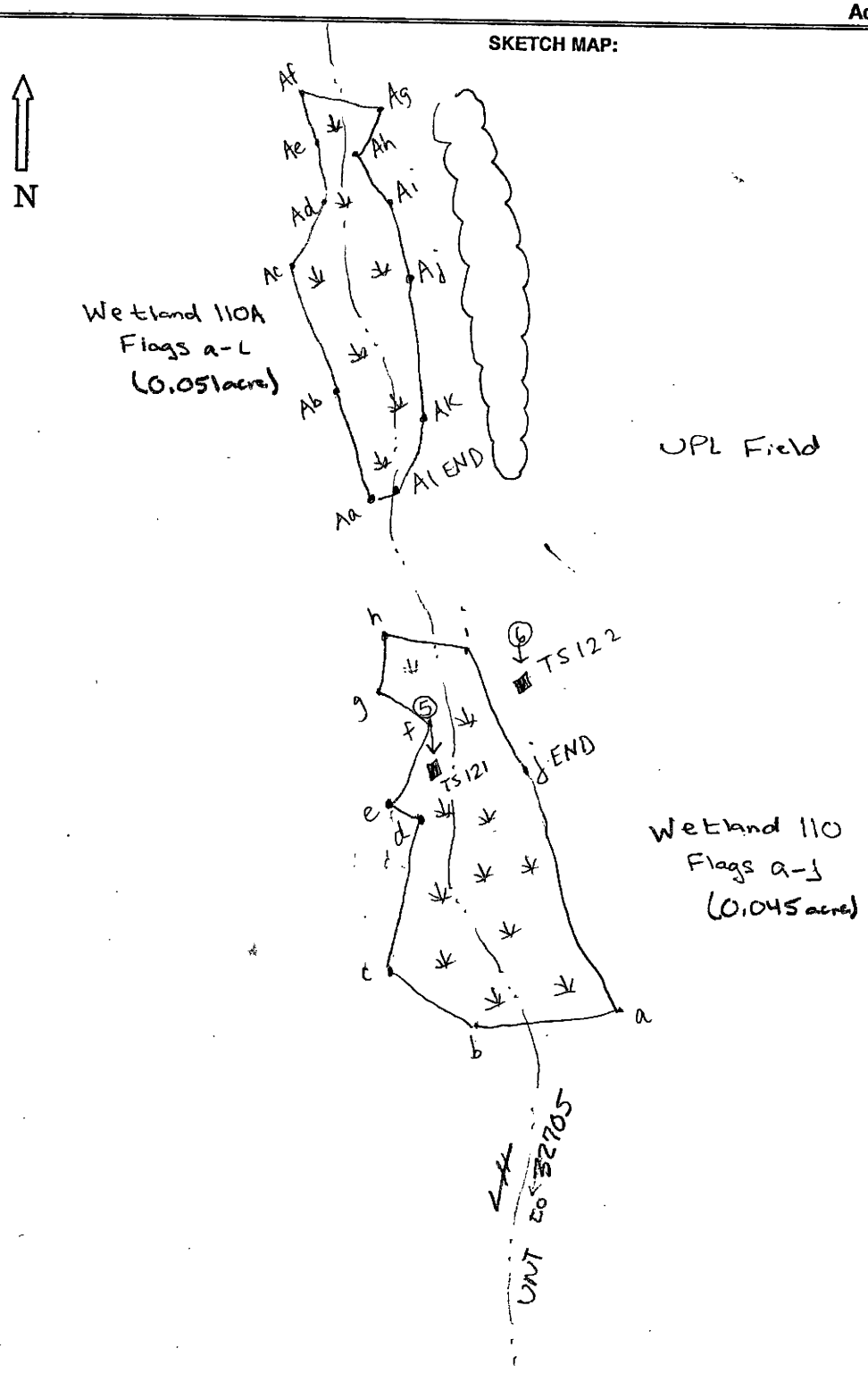
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 110, 110A TS-121

Date: 9/6/07

Acres: 0.096

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/6/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39° 57' 15.85"N 80°24'41.12"W	**Point Name:** TS-122	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Non Wetland TS-122
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	**Photograph No:** 6

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Rosa multiflora	S	FACU	11.			
2.	Poa sp.	H	N.I.	12.			
3.	Ambrosia artemisiifolia	H	FACU	13.			
4.	Aster sp.	H	N.I.	14.			
5.	Vernonia gigantea	H	FAC	15.			
6.	Dichantheltum	H	FAC+	16.			
7.	Clandestinum			17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/4 = 50%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: n/a (inches)	____ Sediment Deposits
Depth to Free Water in Pit: 7/6 (inches)	____ Drainage Patterns in Wetlands
Depth to Saturated Soil: 7/6 (inches)	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No hydrology inicators present.

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS 122

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams (DtF) 25-50% Drainage Class: Well Drained/ Moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 5/4	n/a	n/a	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: No hydric soil indicators present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TB-122

Date: 9/6/07

Acres: —

SKETCH MAP:

N

See Wetland 110
sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/6/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39°57'20.32"N 80°24'42.05"W	**Point Name:** TS-123	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 111
Is the site significantly disturbed (Atypical?)	Yes	No X	**Photograph No:** 7
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Impatiens capensis	H	FACW	11.			
2.	Pilea pumila	H	FACW	12.			
3.	Aster prenanthoides	H	FAC	13.			
4.	Polygonum persicaria	H	FACW	14.			
5.	Eupatorium perfoliatum	H	FACW+	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	X Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland III, TS-123

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF) Drainage Class: well drained/ Moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		2.5Y 4/1	5YR 4/6	abundant/fine-medium	silt loam
3-16		5Y 4/1	5YR 4/6	few/coarse	gravely silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

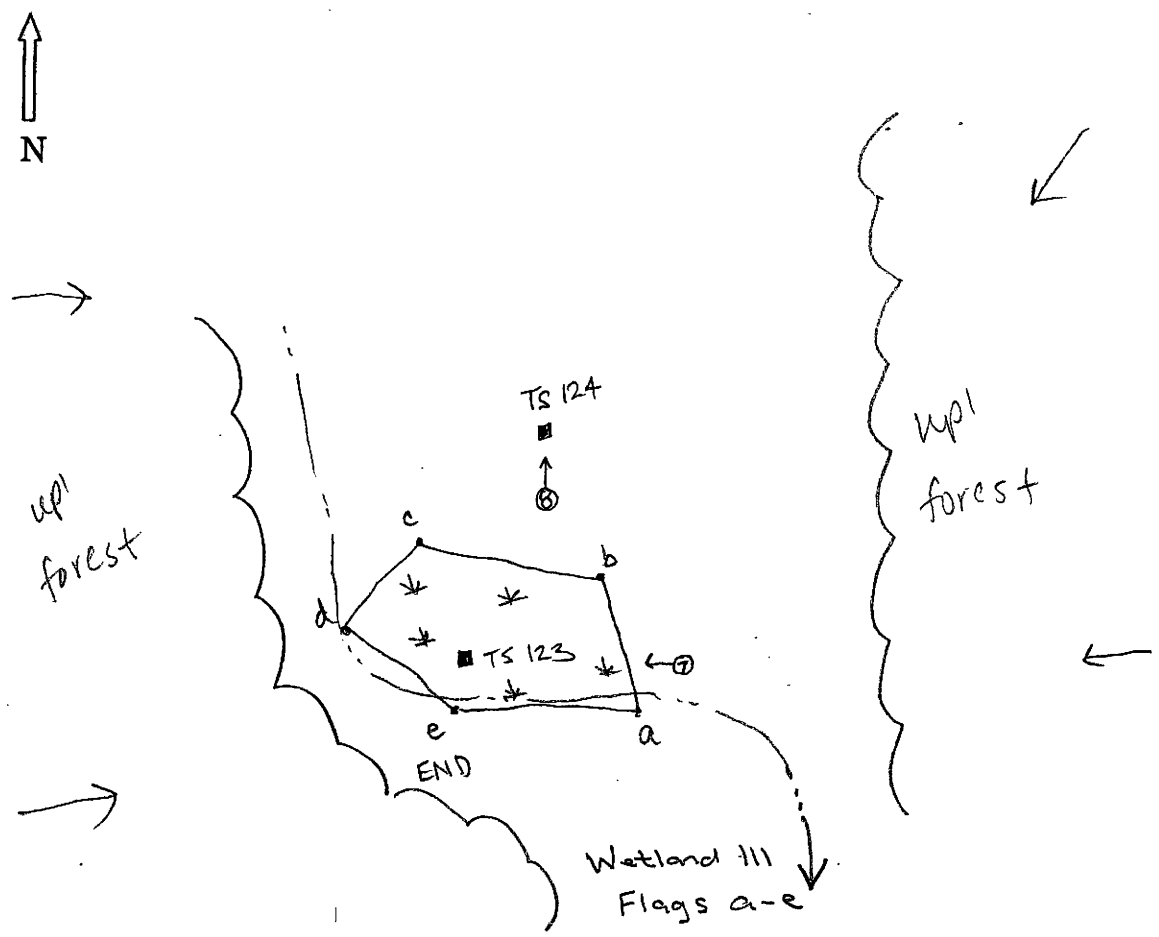
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 111, TS-123

Date: 9/6/07

Acres: 0.007

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-552.0001 CRDA No. 5		Date: 9/6/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	MLS, KLM	GPS Unit: Export Camera: D	State: PA
GPS Coordinates:	39°57'20.56"N 80°24'41.97"W	Point Name: TS-124	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No X	Non-Wetland
Is the area a potential problem area?	Yes	No X	Photograph No:
(If needed, explain on reverse.)			8

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Pilea pumila	H	FACW	11.			
2.	Impatiens capensis	H	FACW	12.			
3.	Polygonum persicaria	H	FACW	13.			
4.	Aster prenanthoides	H	FAC	14.			
5.	Polygonum virginianum	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No hydrology indicators present.

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS 124

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10YR 4/3	5YR 5/8	few / fine	silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ____ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:
No hydric soil indicators present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No ____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ____	No X	Yes ____
Hydric Soils Present?	Yes ____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS 124

Date: 9/6/07

Acres: ——

SKETCH MAP:

N

See Wetland 111 sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/7/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	MLS, KLM	GPS Unit: Export Camera: D	State: PA
GPS Coordinates:	39°57'22.88"N 80°24'42.13"W	Point Name: TS-125	

Do normal circumstances exist on the site?	Yes X	No	Wetland ID: Wetland 112 & 112A
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	Photograph No: 9

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Pilea pumila	H	FACW	11.			
2.	Polygonum persicaria	H	FACW	12.			
3.	Aster prenanthoides	H	FAC	13.			
4.	Carex frankii	H	OBL	14.			
5.	Viola sp	H	N.I.	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/4 = 100%

Remarks:

HYDROLOGY

- ____ Recorded Data (Describe in Remarks)
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- X No Recorded Data Available

Field Observations:

Depth of Surface Water: n/a (inches)

Depth to Free Water in Pit: > 16 (inches)

Depth to Saturated Soil: to surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- X Saturated in upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators:

- ____ Oxidized Root Channels in Upper 12 Inches
- ____ Water Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5
Wetland ID: Wetland 112 & 112A, TS-125

SOILS

Map Unit Name:
(Series and Phase): Dormont-Colledge silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR 3/2	n/a	n/a	silt loam
4-8		10Y 3/1	2.5YR 3/4	common/medium-coarse	silt loam
8-16		2.5Y 4/2	1)10YR 5/8 2)7.5YR 5/8	1)common/fine-med 2)few/med-coarse	clayey silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- X Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No ____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No ____	Yes X
Hydric Soils Present?	Yes X	No ____	No ____
			USFWS Classification: PEM

Remarks:

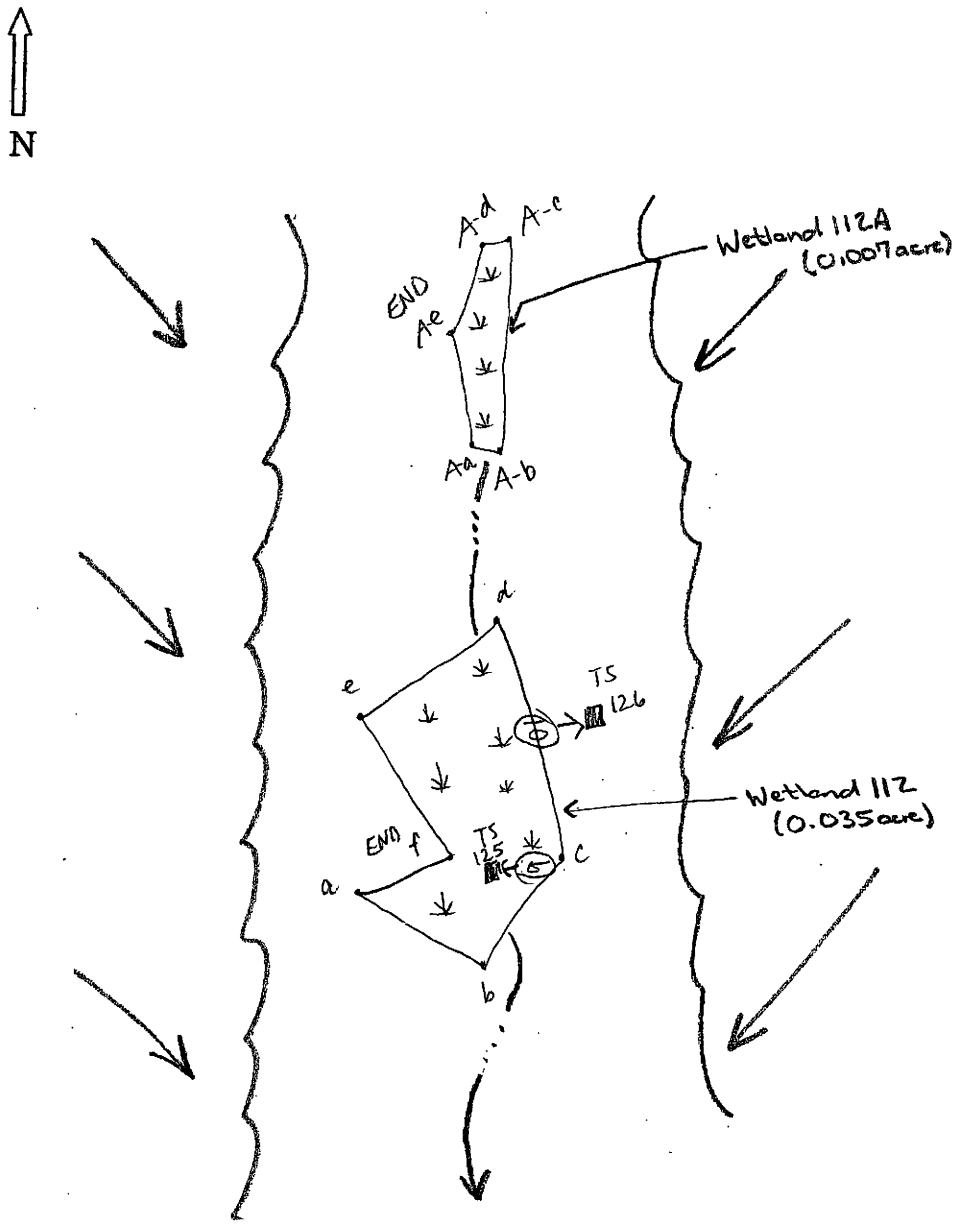
Project/Site: DTI-522.0001 CRDA No. 5

Wetland ID: Wetland 112 & 112A TS-125

Date: 9/7/07

Acres: 0.042

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/7/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39°57'23.09"N 80°24'41.77"W	**Point Name:** TS-126	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Non-Wetland TS126
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	**Photograph No:** 10

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Carya ovata	T	FACU-	11.			
2.	Carya glabra	T	FACU-	12.			
3.	Quercus alba	T	FACU-	13.			
4.	Rosa multiflora	S	FACU	14.			
5.	Euphorbium fugosum	H	FACU-	15.			
6.	Viola sp.	H	N.I.	16.			
7.	Pilea pumila	H	FACW	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1/6) 1/6 = 17%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
___ Stream, Lake, or Tide Gauge	**Primary Indicators:**
___ Aerial Photographs	___ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	___ Water Marks
Depth of Surface Water: n/a (inches)	___ Drift Lines
Depth to Free Water in Pit: >16 (inches)	___ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	___ Drainage Patterns in Wetlands
	Secondary Indicators:
	___ Oxidized Root Channels in Upper 12 Inches
	___ Water Stained Leaves
	___ Local Soil Survey Data
	___ FAC-Neutral Test
	___ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS-126

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullenka Silt loams (DtF) 25-50% Drainage Class: Well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		2.5Y 6/6	n/a	n/a	silt loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- _____ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-126

Date: 9/7/07

Acres: —

SKETCH MAP:

N

See Wetland 112 sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/7/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39°57'25.37"N 80°24'38.99"W	**Point Name:** TS-127	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 113
Is the site significantly disturbed (Atypical?)	Yes	No X	**Photograph No:** 11
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Lindera benzoin	S	FACW-	11.			
2.	Carex frankii	H	OBL	12.			
3.	Polygonum persicaria	H	FACW	13.			
4.	Eupatorium perfoliatum	H	FACW+	14.			
5.	Polygonum sagittatum	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%.

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
X No Recorded Data Available

Field Observations:

Depth of Surface Water: n/a (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: to surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
X Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.6001 CRDA No. 5
Wetland ID: Wetland 113, TS-127

SOILS

Map Unit Name:
(Series and Phase): Dormont Culleoka Silt loams (D+F) 25-50%, Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		10 YR 3/1	5 YR 4/4	abundant/medium	clayey silt loam
6-16		N 4/0	7.5 YR 4/8	abundant/fine-medium	clayey silt loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- X Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____
Hydric Soils Present?	Yes X	No ____

Is this Sampling Point Within a Wetland?
Yes X
No ____
USFWS Classification: PEM

Remarks:

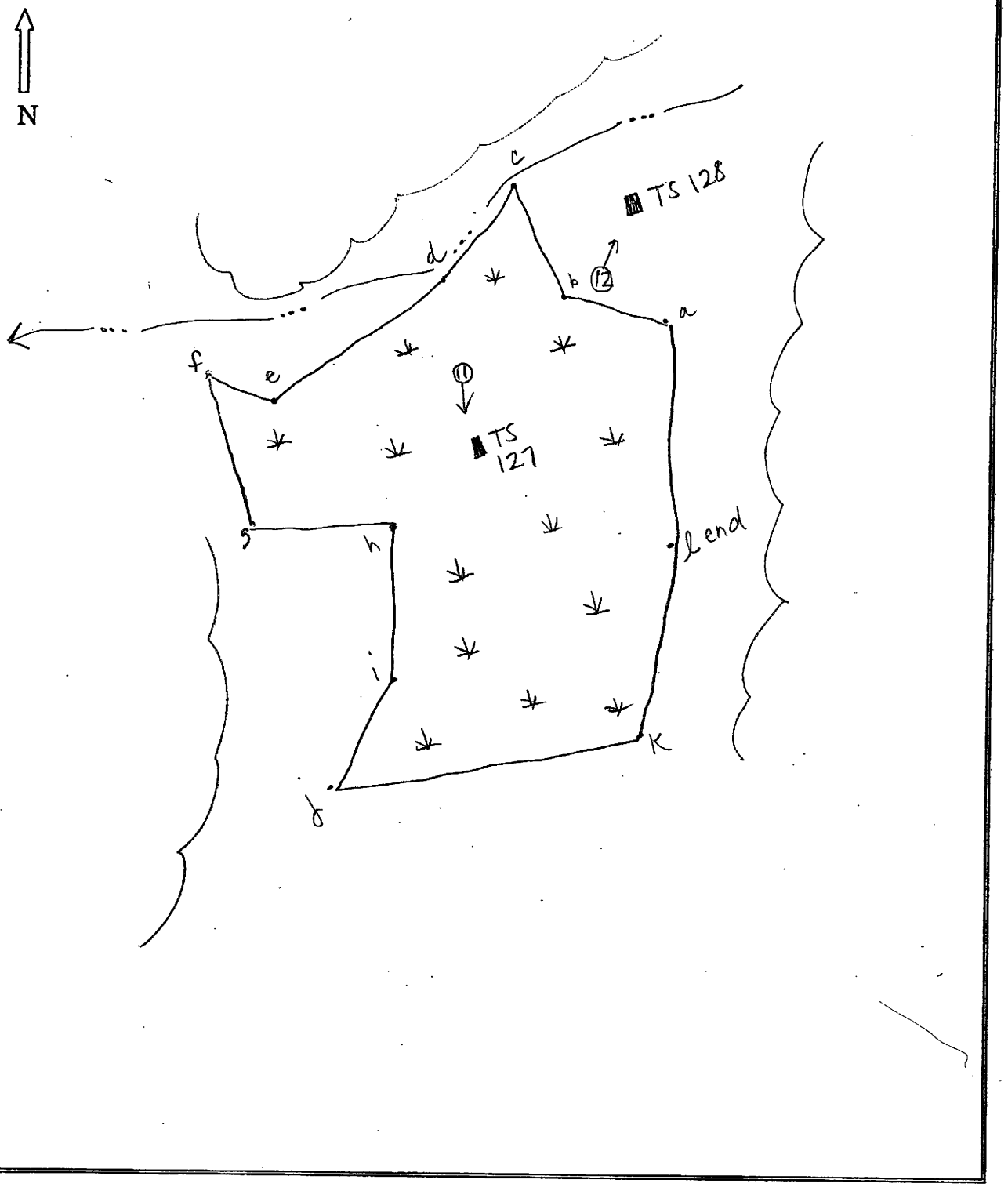
Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Wetland 113, TS-127

Date: 9/7/07

Acres: 0.050

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/7/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Expo 1t **Camera:** D	**State:** PA
GPS Coordinates:	39°57'25.65"N 80°24'38.77"W	**Point Name:** TS-128	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Non-Wetland TS-128
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	**Photograph No:** 12

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Fraxinus sp.	T	N.I.	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Gallium sp.	H	N.I.	13.			
4.	Ranunculus sp.	H	N.I.	14.			
5.	Polygonum virginicum	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/2 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: 7/6 (inches)	____ Sediment Deposits
Depth to Saturated Soil: 7/6 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Non-Wetland TS-128

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullooka silt loam (DtF) 25-50% Drainage Class: well drained/ Moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		2.5Y 4/1	7.5YR 3/4	abundant/fine	clayey silt loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soil
____	Aquic Moisture Regimes	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No ____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ____	No X	Yes ____
Hydric Soils Present?	Yes X	No ____	No X
			USFWS Classification: ____

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-128

Date: 9/7/07

Acres: —

SKETCH MAP:

N

See Wetland 113
sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/7/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39°57'18.25"N 80°24'24.65"W	**Point Name:** TS-129	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 114 TS-129
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	**Photograph No:** 13
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Leersia oryzoides	H	OBL	11.			
2.	Polygonum hydropiperoides	H	OBL	12.			
3.	Polygonum persicaria	H	FACW	13.			
4.	Eupatorium perfoliatum	H	FACW+	14.			
5.	Lycopus virginicus	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%.

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 114 TS-129

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullerton silt loams 25-50% (DtF) Drainage Class: well drained / moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		2.5Y 4/2	n/a	n/a	silt loam
5-16		2.5Y 4/2	1 2.5YR 3/6 2 N 2.5/0 3 7.5YR 4/6	few/medium common/coarse abundant/fine-med	clayey silt loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soil
____	Aquic Moisture Regimes	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

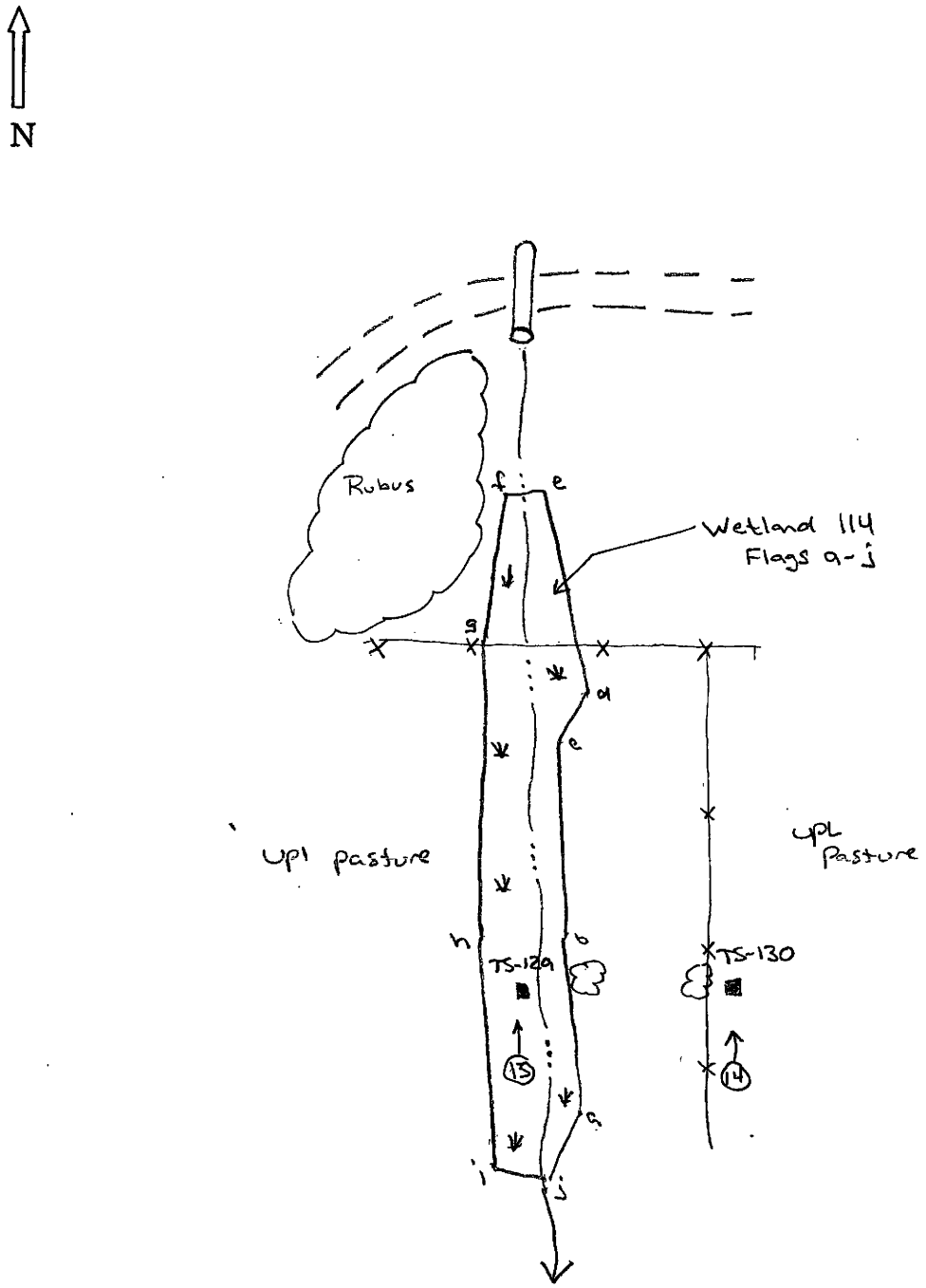
Hydrophytic Vegetation Present?	Yes X	No ____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No ____	Yes X
Hydric Soils Present?	Yes X	No ____	No ____
			USFWS Classification: PEM

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 114 TS-129

Date: 9/7/07
Acres: 0.023

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 9/7/07
Applicant: CONSOL	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, KLM	**GPS Unit:** EXPORT	**Camera:** D	**State:** PA
GPS Coordinates: 39°57'18.41"N 80°24'24.35"W	**Point Name:** TS-130		
Do normal circumstances exist on the site?	Yes X	No ____	**Wetland ID:** Non-Wetland TS-130
Is the site significantly disturbed (Atypical?)	Yes ____	No X	
Is the area a potential problem area?	Yes ____	No X	**Photograph No:** 14
(If needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Juglans nigra	T	FACU	11.			
2.	Phleum pratense	H	FACU	12.			
3.	Vernonia gigantea	H	FAC	13.			
4.	Ambrosia artemisiifolia	H	FACU	14.			
5.	Trifolium pratense	H	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/5 = 20%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
X No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks: No hydrology indicators present.

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland 114 TS-130

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullenka silt loams (DtF) 25-50% Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		2.5Y 6/4	n/a	n/a	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: No hydric soil indicators present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland 11A T3-130

Date: 9/7/07

Acres: —

SKETCH MAP:

N

See Wetland 114
Sketch Page.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/7/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39° 57' 22.98"N 80° 24' 25.83"W	**Point Name:** TS-131	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Wetland 115 TS 131
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No X	**Photograph No:** 15

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Polygonum hydropiperoides	H	OBL	11.			
2.	Impatiens capensis	H	FACW	12.			
3.	Pilea pumila	H	FACW	13.			
4.	Polygonum persicaria	H	FACW	14.			
5.	Polygonum sagittatum	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	X Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: n/a (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: to surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 115 TS 131

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullecka silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10 YR 3/2	5 YR 4/6	abundant/coarse	sandy silt loam
4-16		10 Y 4/1	7.5 YR 5/6	abundant/med-coarse	silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
X	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes X	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes X	No _____	Yes X
Hydric Soils Present?	Yes X	No _____	No _____
			USFWS Classification: PEM

Remarks:

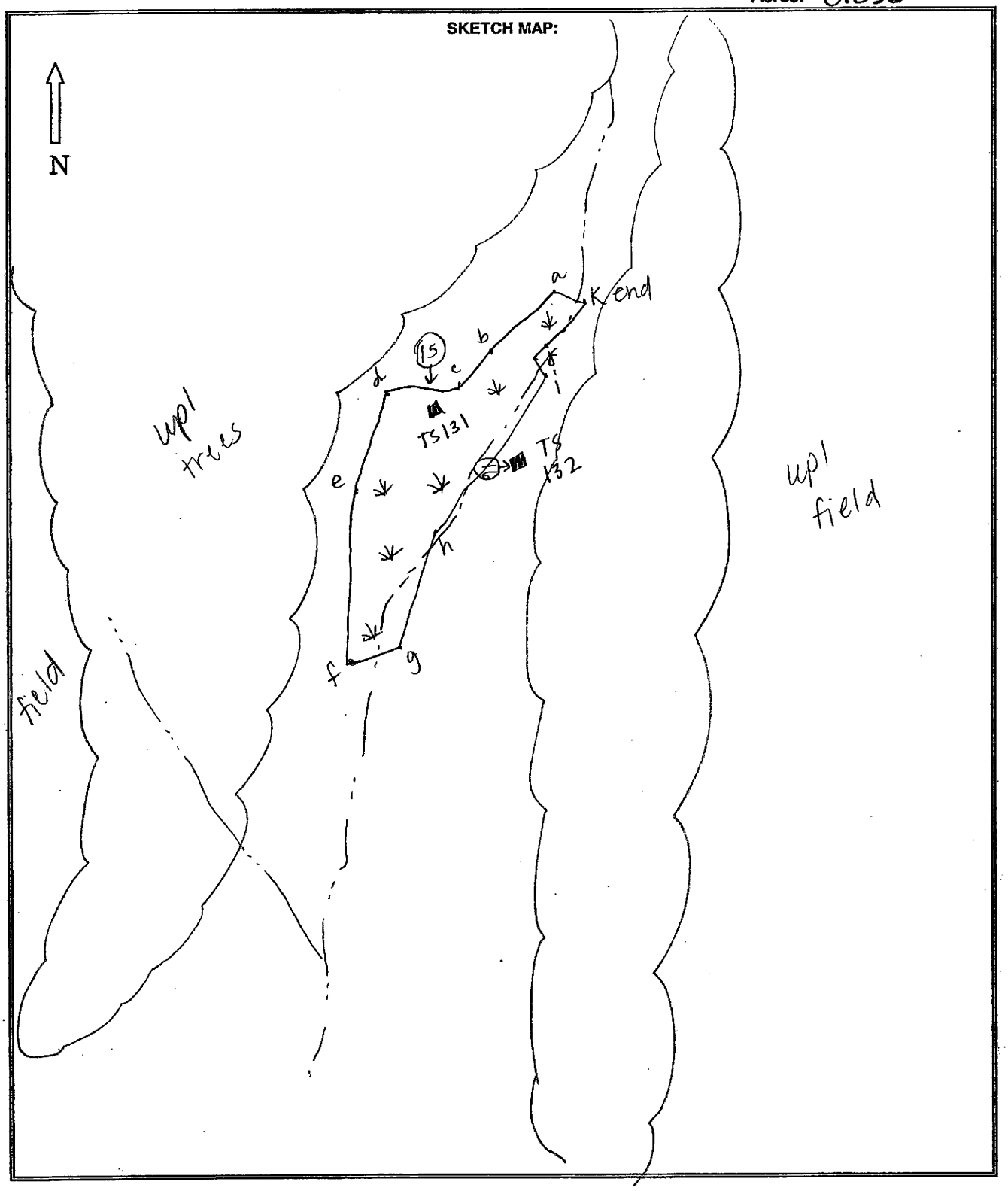
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 115 TS-131

Date: 9/7/07

Acres: 0.036

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-622.0001 CRDA No 5		**Date:** 9/7/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, KLM	**GPS Unit:** Export **Camera:** D	**State:** PA
GPS Coordinates:	39°57'22.85"N 80°24'25.72"W	**Point Name:** TS-132	

Do normal circumstances exist on the site?	Yes X	No	**Wetland ID:** Non-Wetland TS-132
Is the site significantly disturbed (Atypical?)	Yes	No X	
Is the area a potential problem area?	Yes	No X	**Photograph No:** 16
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Pyrus malus	T	UPL	11.			
2.	Acer saccharum	T	FACU-	12.			
3.	Ulmus americana	T	FACW-	13.			
4.	Aster sp	H	N.I.	14.			
5.	Eupatorium rugosum	H	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (1) 1/4 = 25%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
X No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No hydrology indicators present.

Project/Site: 071-522.0001 CRDA No.5
Wetland ID: Non-Wetland TS-132

SOILS

Map Unit Name:
(Series and Phase): Dormont Culleoka silt loams (DtF) 25-50% Drainage Class: well drained / moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs
Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-16		10 YR 5/6	n/a	n/a	silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks: No hydric soil indicators present.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No X	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No X	Yes _____
Hydric Soils Present?	Yes _____	No X	No X
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland 115 TS-132

Date: 9/7/07

Acres: —

SKETCH MAP:

N

See Wetland 115

sketch map.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/12/07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	MLS, JWC	GPS Unit: GeoXT Rent Camera: C	State: PA
GPS Coordinates:	39° 57' 24.11" N 80° 24' 24.15" W	Point Name: TS-133	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 116, TS-133
Is the area a potential problem area?	Yes	No ✓	Photograph No:
(if needed, explain on reverse.)			1

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Leersia virginica	H	FACW	11.			
2.	Polygonum persicaria	H	FACW	12.			
3.	Pilea pumila	H	FACW	13.			
4.	Carex Frankii	H	OBL	14.			
5.	Polygonum hydropiper	H	OBL	15.			
6.	Aster lateriflorus	H	FACW-	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 6/6 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: NA (inches)	✓ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No 5

Wetland ID: Wetland 116, TS-133

SOILS

Map Unit Name:

(Series and Phase): Dormont-Culleoka silt loams (DtD) 15-25% Drainage Class: moderately well drained/ well drained

(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-9		2.5Y 4/1	5YR 5/8	Common/Medium	Silt loam
9-16		2.5Y 5/2	5YR 5/8 2.5YR 3/6	Many/Medium to Coarse Common/Medium	Gravelly silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

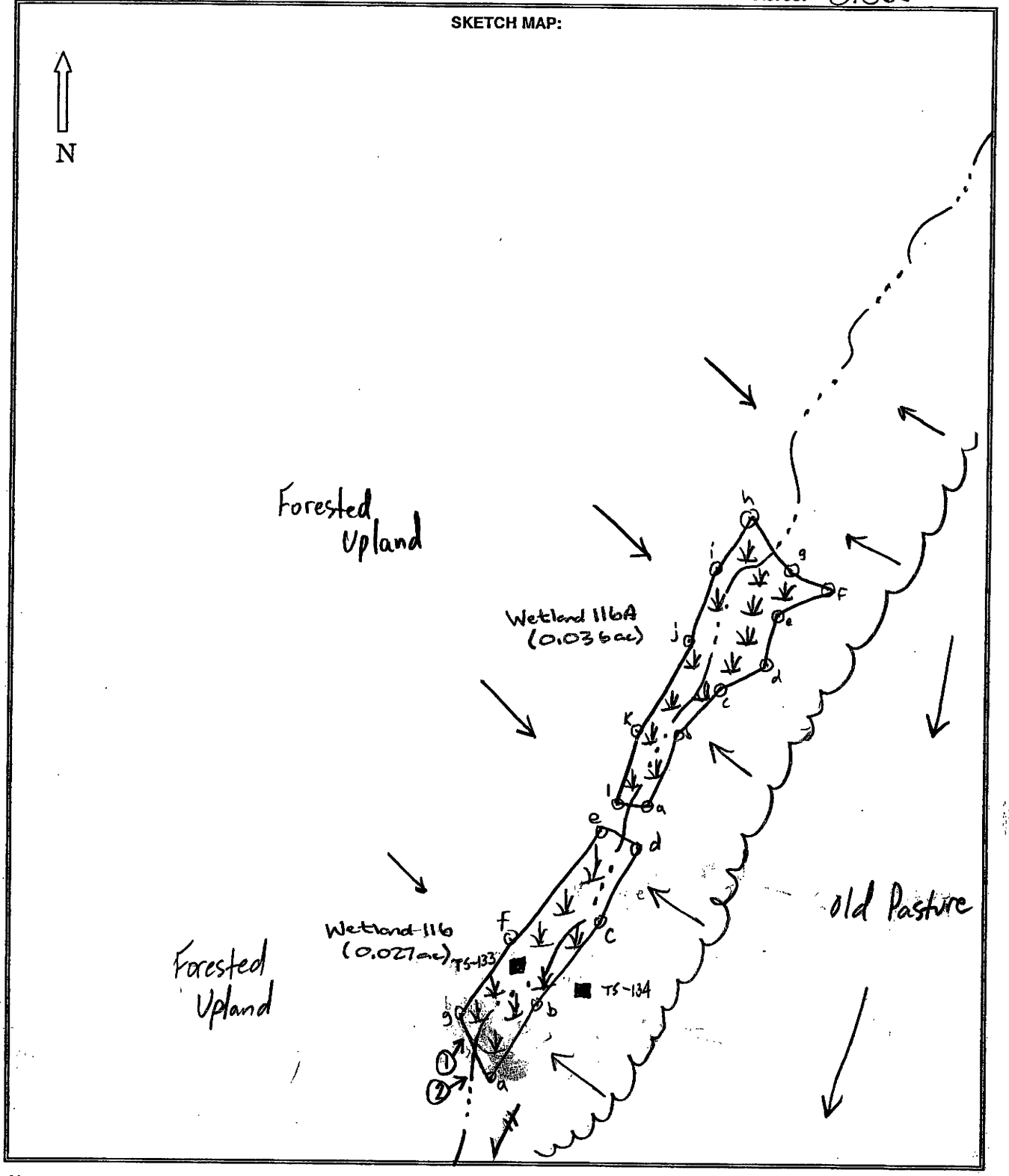
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 116, TS-133

Date: 9/12/07

Acres: 0.063

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/12/07
Applicant:	CONSOL	**Parcel/Owner:** CONSOL	**County:** Greene
Investigator(s):	MLS, JWC	**GPS Unit:** GeoXT Rent **Camera:** C	**State:** PA
GPS Coordinates:	39°57'23.98"N 80°24'24.00"W	**Point Name:** TS-134	

Do normal circumstances exist on the site?	Yes ✓	No ___	**Wetland ID:** Non-wetland, TS-134
Is the site significantly disturbed (Atypical?)	Yes ___	No ✓	**Photograph No:** 2
Is the area a potential problem area?	Yes ___	No ✓	
(if needed, explain on reverse.) .			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Ulmus americana	T	FACW-	11.			
2.	Juglans nigra	T	FACU	12.			
3.	Elaeagnus Angustifolia	S	FACU	13.			
4.	Aster lateriflorus	H	FACW-	14.			
5.	Dactylis glomerata	H	FACU	15.			
6.	Ambrosia artemisiifolia	H	FACU	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/6 =

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NA (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
___ Inundated
___ Saturated in upper 12 inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators:
___ Oxidized Root Channels in Upper 12 Inches
___ Water Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001

Wetland ID: Non-wetland, TS-134

SOILS

Map Unit Name:
(Series and Phase): Dormont Culleoka silt loams 15-25% (DtD)
(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: moderately well drained / well drained

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-1		10 YR 4/3	None	NA	Silt loam
1-8		10 YR 8/6	None	NA	Silt loam
8-16		10 YR 6/6	None	NA	Silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non Wetland, TS-134

Date: 9/12/07

Acres: —

SKETCH MAP:

N

See sketch map

for Wetland 116, TS-133.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/12/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	MLS, JWC	GPS Unit: Rental Camera: C	State: PA
GPS Coordinates:	39° 56' 58.12"N 80° 25' 27.63"W	Point Name: TS-135	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Wetland 117, TS-135
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	Photograph No: 3
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Pilea pumila	H	FACW	11.			
2.	Impatiens Capensis	H	FACW	12.			
3.	Polygonum hydropiper	H	OBL	13.			
4.	Viola sp.	H	N.I.	14.			
5.	Poa sp.	H	N.I.	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 3/3=100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	✓ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 117, TS-135

SOILS

Map Unit Name: (DtF)

(Series and Phase): Dormont Culleoka silt loams 25-50% Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR3/2	10YR4/6	Few/Medium	Silt Loam
3-12		5Y4/1	5YR4/6	Few/Coarse	Clayey Silt Loam
12-15		5Y4/1	7.5YR4/6	Common/Med-Coarse	Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

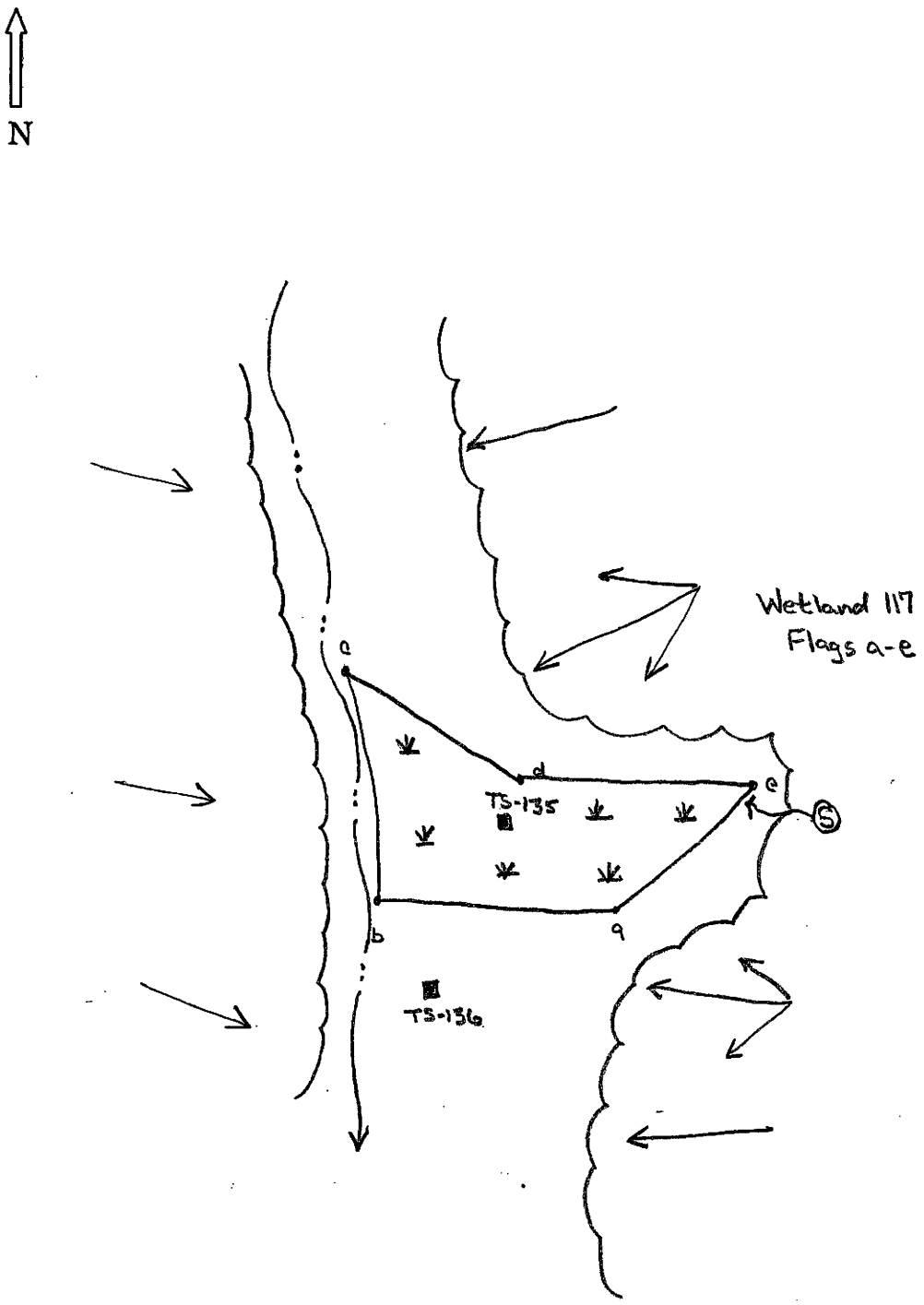
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 117, TS-135

Date: 9/12/07

Acres: 0.008

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/12/09
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, JWC	**GPS Unit:** Rental **Camera:** C	**State:** PA
GPS Coordinates:	39° 56' 57.91" N 80° 25' 27.61" W	**Point Name:** TS-136	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-136
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 4
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer Saccharum	T	FACU-	11.			
2.	Ulmus americana	T	FACW-	12.			
3.	Carpinus caroliniana	T/S	FAC	13.			
4.	Rosa multiflora	S	FACU	14.			
5.	Poa sp.	H	N.I.	15.			
6.	Viola sp.	H	N.I.	16.			
7.	Alliaria petiolata	H	FACU-	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-136

SOILS

Map Unit Name:

(Series and Phase): Dormont Culleoka silt loams (DtF) 25-50%, Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR3/2	None	N/A	Silt Loam
3-16		2.5Y4/3	7.5YR 5/8	Common/Fine	Silt Loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-136

Date: 9/12/07

Acres: —

SKETCH MAP:

N

See Sketch Map For Wetland 117

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width).

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/12/07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	MLS, JWC	GPS Unit: GeoXT Rent Camera: C	State: PA
GPS Coordinates:	39° 57' 3.22"N 80°25'26.84"W	Point Name: TS-137	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 118, TS-137
Is the area a potential problem area?	Yes	No ✓	Photograph No:
(If needed, explain on reverse.)			5

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Amphicarpa bracteata	H	FAC	11.			
2.	Aster puniceus	H	OBL	12.			
3.	Agrimonia parviflora	H	FAC	13.			
4.	Scirpus atrovirens	H	OBL	14.			
5.	Leersia oryzoides	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: 15 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5
Wetland ID: Wetland 118, TS-137

SOILS

Map Unit Name:
(Series and Phase): Dormont Culleoka silt loams (DtF) 25-50%
Drainage Class: well drained/moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs
Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10YR 3/3	None	NA	Loamy silt
2-12		2.5Y 3/2	5YR 4/6	Few/Coarse	Sandy silt loam
12-16		10Y 4/1	None	NA	Clayey silt loam

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soil
____	Aquic Moisture Regimes	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	____	Other (Explain in Remarks)

Remarks: Black organic material observed at 2-16".

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No ____	Yes ✓
Hydric Soils Present?	Yes ✓	No ____	No ____
			USFWS Classification: PEM

Remarks:

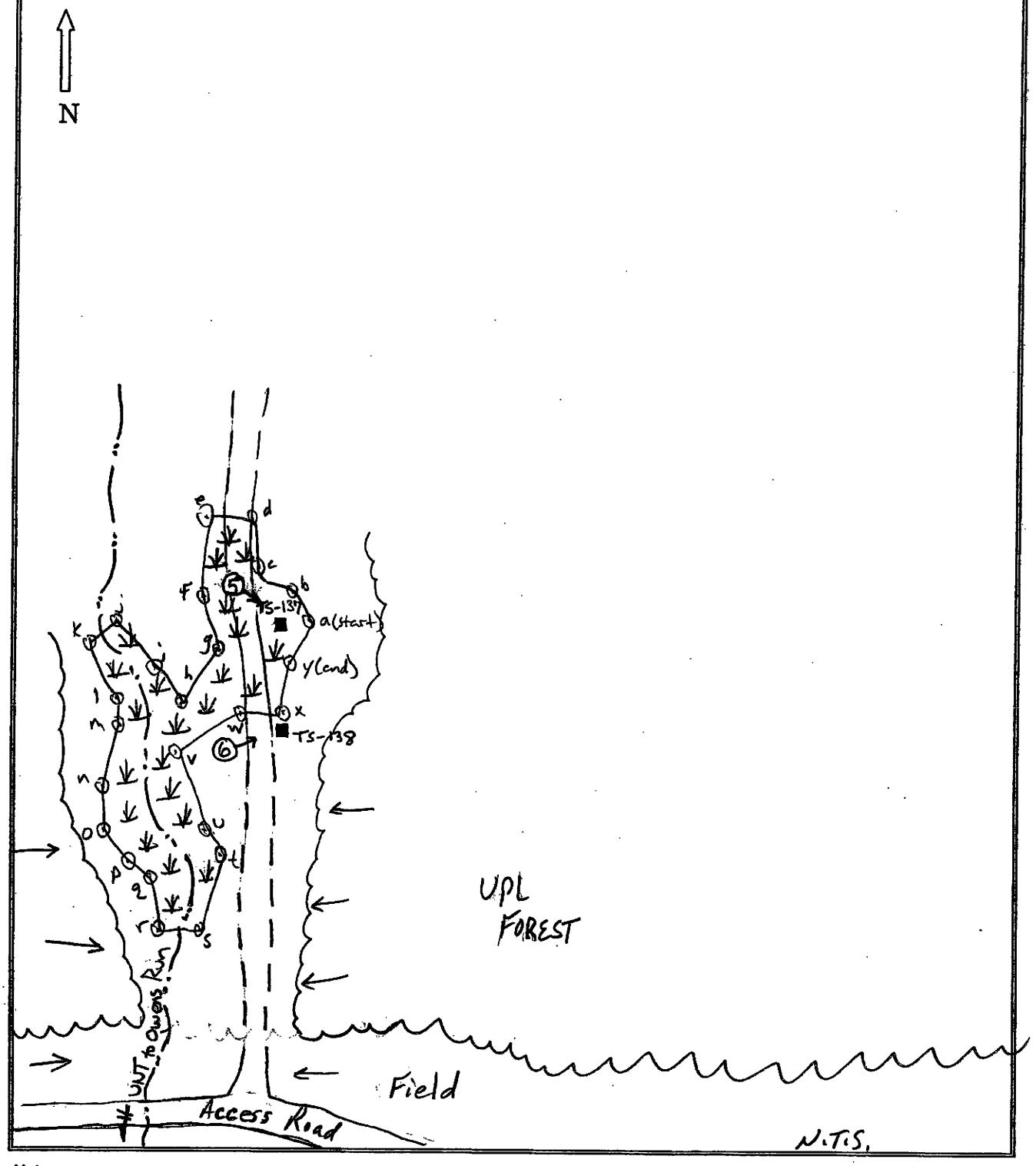
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 114, TS-137

Date: 9/12/07

Acres: 0.100

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-622.0001 CRDA No. 5		Date: 9/13/07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	MLS, JWC	GPS Unit: GeoXT Rent Camera: C	State: PA
GPS Coordinates:	39°57'2.79"N 80°25'26.89"W	Point Name: TS-138	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Non-Wetland, TS-138
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	Photograph No: 6
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Juglans nigra	T	FACU	11.			
2.	Verbesina alternifolia	H	FAC	12.			
3.	Poa sp	H	N.I.	13.			
4.	Panicum clandestinum	H	FAC+	14.			
5.	Agrimonia parviflora	H	FAC	15.			
6.	Aster lateriflorus	H	FACW-	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 100%.

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: NA (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No wetland hydrology observed.

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-138

SOILS

Map Unit Name:

(Series and Phase): Dormont Culleoka silt loams (DtF) 25-50%.

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: well drained / moderately well drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10 YR 4/3	None	NA	Silt loam
3-9		10 YR 5/3	None	NA	Silt loam
9-16		10YR 5/4	None	NA	Silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Observed soil does not meet criteria for hydric soil. Observed soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-138

Date: 9/13/07

Acres: —

SKETCH MAP:

N

See Sketch Map for Wetland 118, TS-137.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001	CRDA No. 5	**Date:** 9/13/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, JWC	**GPS Unit:** Rental **Camera:** C	**State:** PA
GPS Coordinates:	39° 57' 6.13" N 80° 25' 25.55" W	**Point Name:** TS-139	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 119, TS-139
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	**Photograph No:** 7

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Amphicarpa bracteata	H	FAC	11.			
2.	Boehmeria cylindrica	H	FACW+	12.			
3.	Agrimonia parviflora	H	FAC	13.			
4.	Onoclea sensibilis	H	FACW	14.			
5.	Aster puniceus	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%.

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 15 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	✓ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 119, TS-139

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullecka silt loams 25-50% (DtF) Drainage Class: well drained / moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10YR 3/2	5YR 3/4	Common/Medium	Peaty Silt Loam
2-6		5Y 4/1	ORC's 5YR 4/6	Common/Medium	Silt Loam
6-16		5Y 5/2	None	N/A	Gravelly Clay Loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?

Yes ✓

No ____

USFWS Classification: PEM

Remarks:

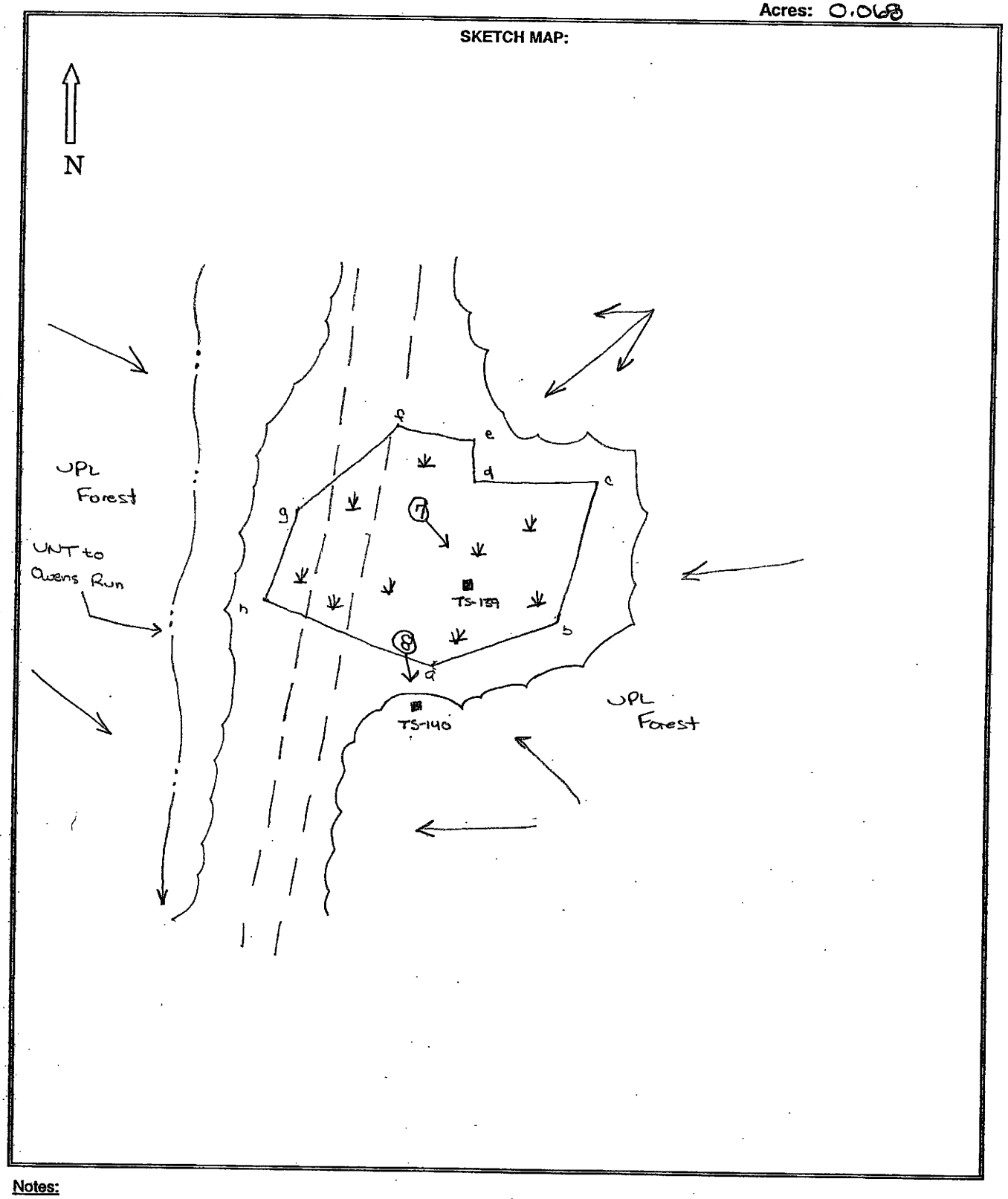
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 119, TS-139

Date: 9/13/07

Acres: 0.068

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width).

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/13/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, JWC	**GPS Unit:** Rental **Camera:** C	**State:** PA
GPS Coordinates:	39°57' 5.87"N 80°25'25.70"W	**Point Name:** TS-140	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-140
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 8
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Fraxinus pennsylvanica	T	FACW	12.			
3.	Ulmus americana	T	FACW-	13.			
4.	Pyrus coronaria	S	N.I.	14.			
5.	Quercus sp.	S	N.I.	15.			
6.	Carya ovata	S	FACU-	16.			
7.	Parthenocissus quinquefolia	H	FACU	17.			
8.	Lycopodium tristachyum	H	UPL	18.			
9.	Acer saccharum	H	FACU-	19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/7 = 29%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 RRDA No. 5

Wetland ID: Non-Wetland TS-140

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullector silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR4/2	None	N/A	Silt Loam
4-16		10YR5/6	None	N/A	Silt Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓
Wetland Hydrology Present?	Yes _____	No ✓
Hydric Soils Present?	Yes _____	No ✓

Is this Sampling Point Within a Wetland?
Yes _____
No ✓

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland TS-140

Date: 9/13/07

Acres:

SKETCH MAP:

N

See Sketch Map For Wetland 119, TS-139

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.8001 CRDA No. 5	Date:	9/13/07
Applicant:	CONSOL Parcel/Owner: CONSOL	County:	Greene
Investigator(s):	MLS, JWC GPS Unit: GeoXT Rent Camera: C	State:	PA
GPS Coordinates:	39°57'8.38"N 80°25'26.02"W Point Name: TS-141		
Do normal circumstances exist on the site?	Yes ✓ No ___	Wetland ID:	Wetland 120, TS-141
Is the site significantly disturbed (Atypical?)	Yes ___ No ✓	Photograph No:	9
Is the area a potential problem area? (if needed, explain on reverse.)	Yes ___ No ✓		

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Pilea pumila	H	FACW	11.			
2.	Poa sp	H	N.I.	12.			
3.	Viola sp	H	N.I.	13.			
4.	Polygonum virginiana	H	FAC	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/2 = 100 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: NA (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: To Surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
___ Inundated
✓ Saturated in upper 12 inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators:
___ Oxidized Root Channels in Upper 12 Inches
___ Water Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Others (Explain in Remarks)

Remarks: Wetland hydrology indicators observed.

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 120, TS-141

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullecka silt loams 25-50% (DtF) Drainage Class: well drained / moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-1		10 YR 3/2	None	NA	Loamy silt
1-15		10 YR 3/2	5YR 5/8	Common / Coarse	Silt loam
15-16		10 YR 4/1	2.5YR 4/8	Many / Medium to Coarse	Silt loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks: Observed soil meets the criteria of hydric soil. Observed soil is hydric.

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland? Yes ✓ No _____

USFWS Classification: PEM

Remarks:

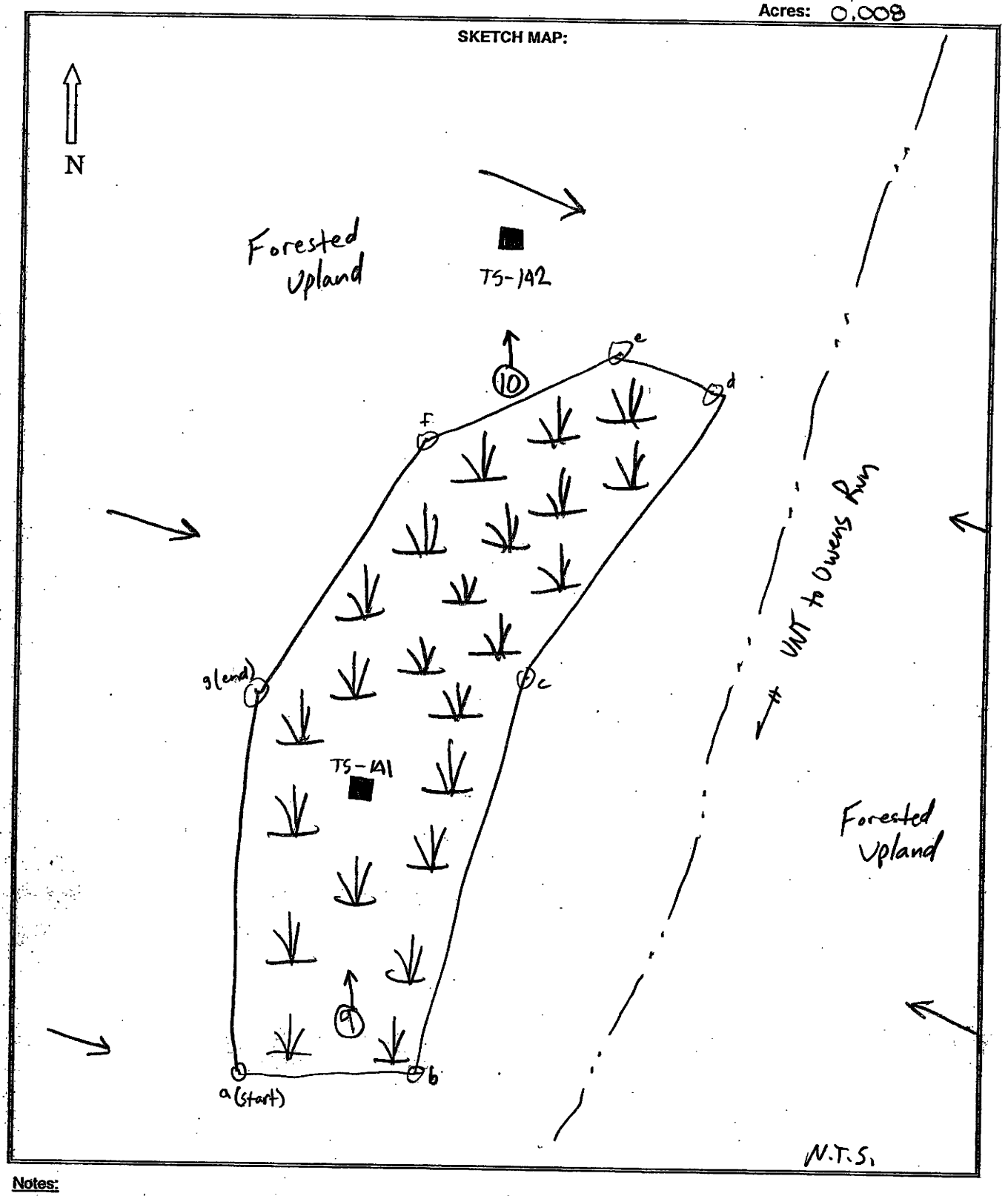
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 120, TS-141

Date: 9/13/07

Acres: 0.008

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/13/07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	MLS, JWK	GPS Unit: GeoXT Rent Camera: C	State: PA
GPS Coordinates:	39°57'8.79"N 80°25'25.88"W	Point Name: TS-142	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Non-wetland TS-142
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Photograph No: 10
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Prunus serotina	T	FACU	12.			
3.	Lindera benzoin	S	FACW-	13.			
4.	Poa sp	H	N.I.	14.			
5.	Glechoma hederacea	H	FACU	15.			
6.	Polygonum virginiana	H	FAC	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No wetland hydrology indicators observed.

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-wetland TS-142

SOILS

Map Unit Name:

(Series and Phase): Dormont Colleoka silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10 YR 4/2	None	NA	Silt loam
5-16		10 YR 4/3	None	NA	Silt loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Observed soil does not meet criteria for hydric soil. Observed soil is not hydric

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: _____

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-142

Date: 9/13/07

Acres: —

SKETCH MAP:

N

See Sketch Map for Wetland 120, TS-141.

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/13/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	MLS, JWC	GPS Unit: Rental Camera: C	State: PA
GPS Coordinates:	39° 57' 15.73"N 80° 25' 23.16"W	Point Name: TS-143	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID:
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 121, TS-143
Is the area a potential problem area?	Yes	No ✓	Photograph No:
(if needed, explain on reverse.)			11

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Carex stricta	H	OBL	11.			
2.	Aster prenanthoides	H	FAC	12.			
3.	Impatiens sp.	H	FACW	13.			
4.	Pilea pumila	H	FACW	14.			
5.	Eupatorium rugosum	H	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/5 = 80%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	✓ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 121, TS-143

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullecka silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-6		10YR3/2	None	N/A	Silt Loam
6-9		7.5YR4/6	None	N/A	Alluvium
9-16		5Y3/1	7.5YR4/6	Common/Coarse	Gravelly Silt Loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____
Hydric Soils Present?	Yes ✓	No ____

Is this Sampling Point Within a Wetland?

Yes ✓

No ____

USFWS Classification: PEM

Remarks:

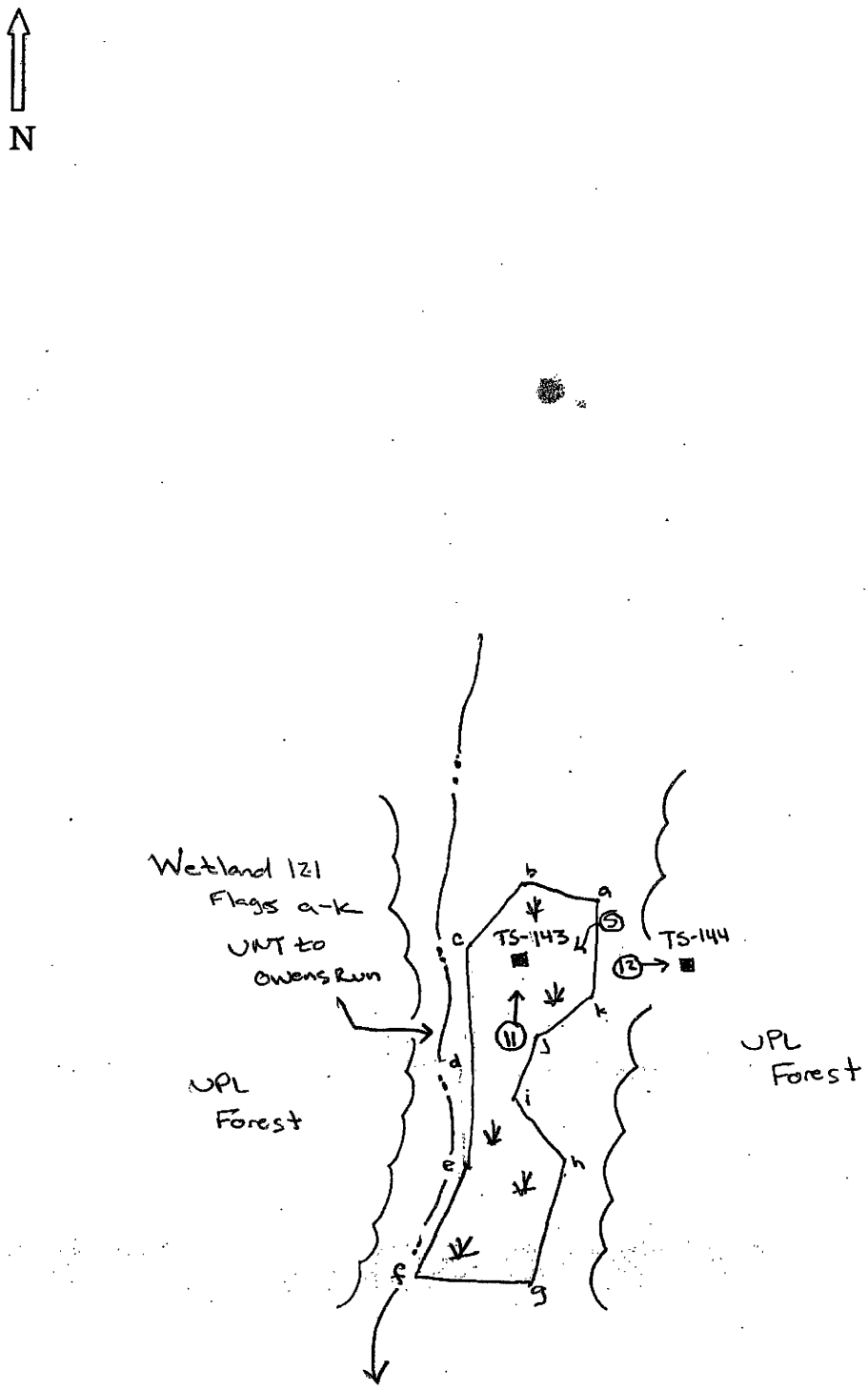
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 121, TS-143

Date: 9/13/07

Acres: 0.021

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/13/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, JWC	**GPS Unit:** Rental **Camera:** C	**State:** PA
GPS Coordinates:	39° 57' 15.61" N 80° 25' 22.75" W	**Point Name:** TS-144	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-144
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 12
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T/S	FACU-	11.			
2.	Eupatorium rugosum	H	FACU-	12.			
3.	Polygonum virginianum	H	FAC	13.			
4.	Alliaria petiolata	H	FACU-	14.			
5.	Sedum ternatum	H	UPL	15.			
6.	Viola sp.	H	N.I.	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/5 = 20%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: N/A (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland, TS-144

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullecka silt loams (DtF) 25-50%

Drainage Class: well drained / Moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR4/2	None	N/A	Silt Loam
3-16		10YR5/6	None	N/A	Silt Loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification:

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland, TS-144

Date: 9/13/07

Acres: —

SKETCH MAP:

N

See Sketch Map for Wetland 121, TS-143

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 9/13/07
Applicant: CONSOL	**Parcel/Owner:** CONSOL		**County:** Greene
Investigator(s): MLS, JWC	**GPS Unit:** GeoXT Rent	**Camera:** C	**State:** PA
GPS Coordinates: 39° 57' 20.25" N 80° 25' 18.77" W	**Point Name:** TS-145		
Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	Wetland 122, TS-145
Is the area a potential problem area?	Yes ____	No ✓	**Photograph No:**
(if needed, explain on reverse.)			13

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Pilea pumila	H	FACW	11.			
2.	Polygonum hydropiper	H	OBL	12.			
3.	Aster sp	H	N.I.	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/2 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: To Surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
✓ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks: Wetland hydrology observed.

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 122, TS-145

SOILS

Map Unit Name:
(Series and Phase): Dorrant Cullenka silt loams 25-50% (DtF) Drainage Class: well drained / moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10 YR 4/2	10 YR 5/6 2.5 YR 3/6	Few / Fine Few / Coarse	Loamy silt
4-16		10 Y 4/1	None	NA	Loamy silt

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks: Observed soil meets the criteria for hydric soil. Observed soil is hydric. Organic material observed 0-16".

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?	
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓	
Hydric Soils Present?	Yes ✓	No _____	No _____	
			USFWS Classification: PEM	

Remarks:

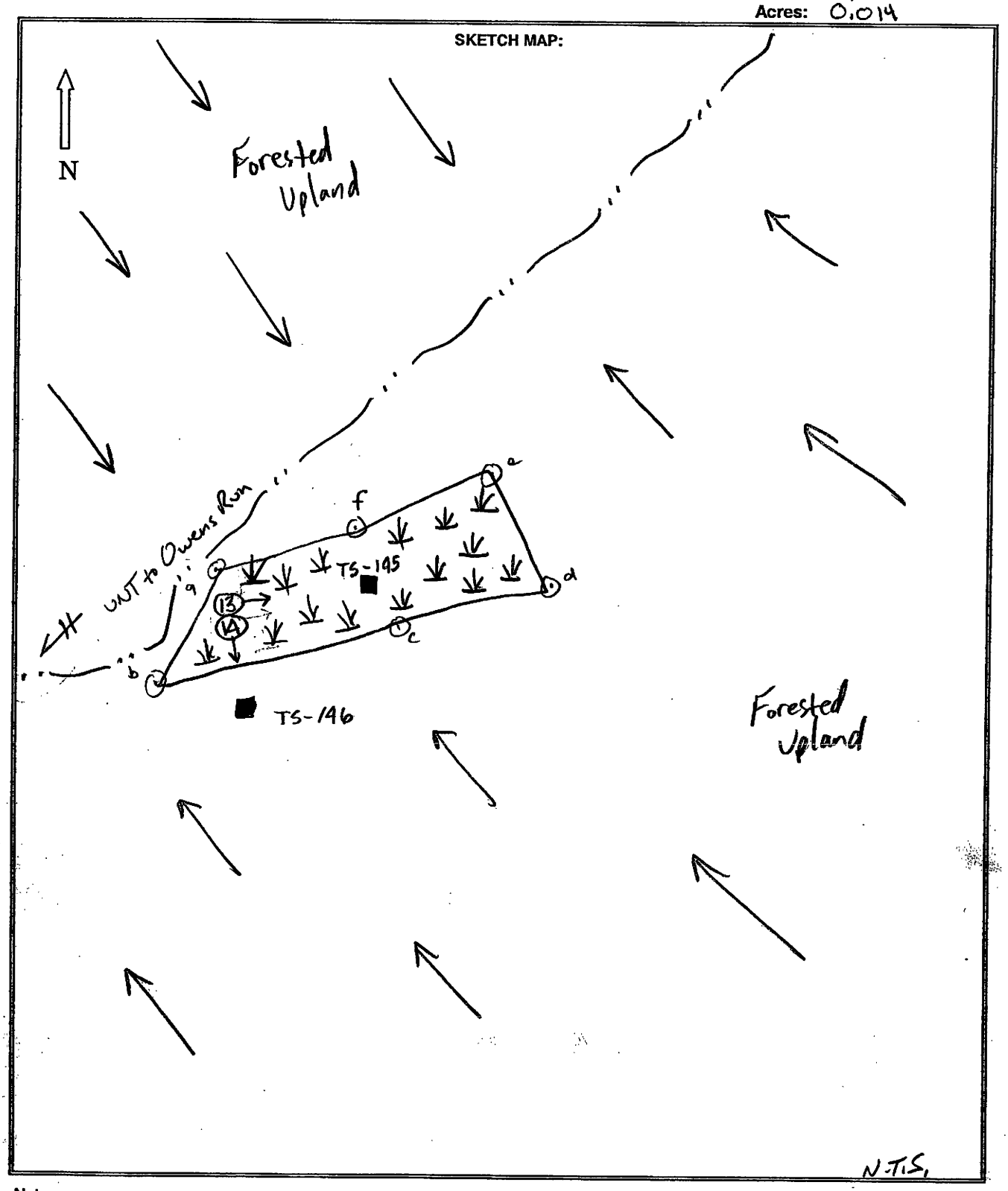
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 122, TS-145

Date: 9/13/07

Acres: 0.014

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/13/07
Applicant:	CONSOL	Parcel/Owner: CONSOL	County: Greene
Investigator(s):	NLS, JHC	GPS Unit: Geo XT Rent Camera: C	State: PA
GPS Coordinates:	39°57'20.06"N 80°25'18.79"W	Point Name: TS-146	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Non-Wetland, TS-146
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Photograph No: 14
Is the area a potential problem area?	Yes	No ✓	
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Acer saccharum	T	FACU-	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Urtica dioica	H	FACU	13.			
? 4.	Polystichum acrostichoides	H	FACU-	14.			
5.	Hystrix patula	H	UPL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/5 = 20%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: NA (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks: No wetland hydrology indicators observed.

Project/Site: 071-522, 0001 CRDA No. 5

Wetland ID: Non-Wetland TS-146

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullecka silt loams (DtF) 25-50% Drainage Class: Well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10 YR 4/2	None	NA	Silt loam
3-16		10 YR 5/4	7.5 YR 4/6	Few / Medium	Clay loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks: Observed soil does not meet criteria for hydric soil. Observed soil is not hydric.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: _____

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-146

Date: 9/13/07

Acres: —

SKETCH MAP:

N

See sketch map for
Wetland 122, TS-145

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/14/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, SRM	**GPS Unit:** GeoXT 5 **Camera:** C	**State:** PA
GPS Coordinates:	39°57'24.66"N 80°25'14.21"W	**Point Name:** TS-147	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 123, TS-147
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 15
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Aster puniceus	H	OBL	11.			
2.	Impatiens capensis	H	FACW	12.			
3.	Polygonum sagittatum	H	OBL	13.			
4.	Boehmeria cylindrica	H	FACW+	14.			
5.	Leersia oryzoides	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: 14 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Wetland 123, TS-147

SOILS

Map Unit Name:

(Series and Phase): Dorrmont-Culleoka Silt loams (DtF) 25-50%

(Taxonomy Subgroup): Ultic Hapludalfs

Drainage Class: well drained/ moderately well drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR 2/1	5YR 4/6	Many / Coarse	Peaty Muck
3-8		5Y2.5/1	None	N/A	Peaty Muck
8-16		5Y4/1	None	N/A	Silt Clay

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

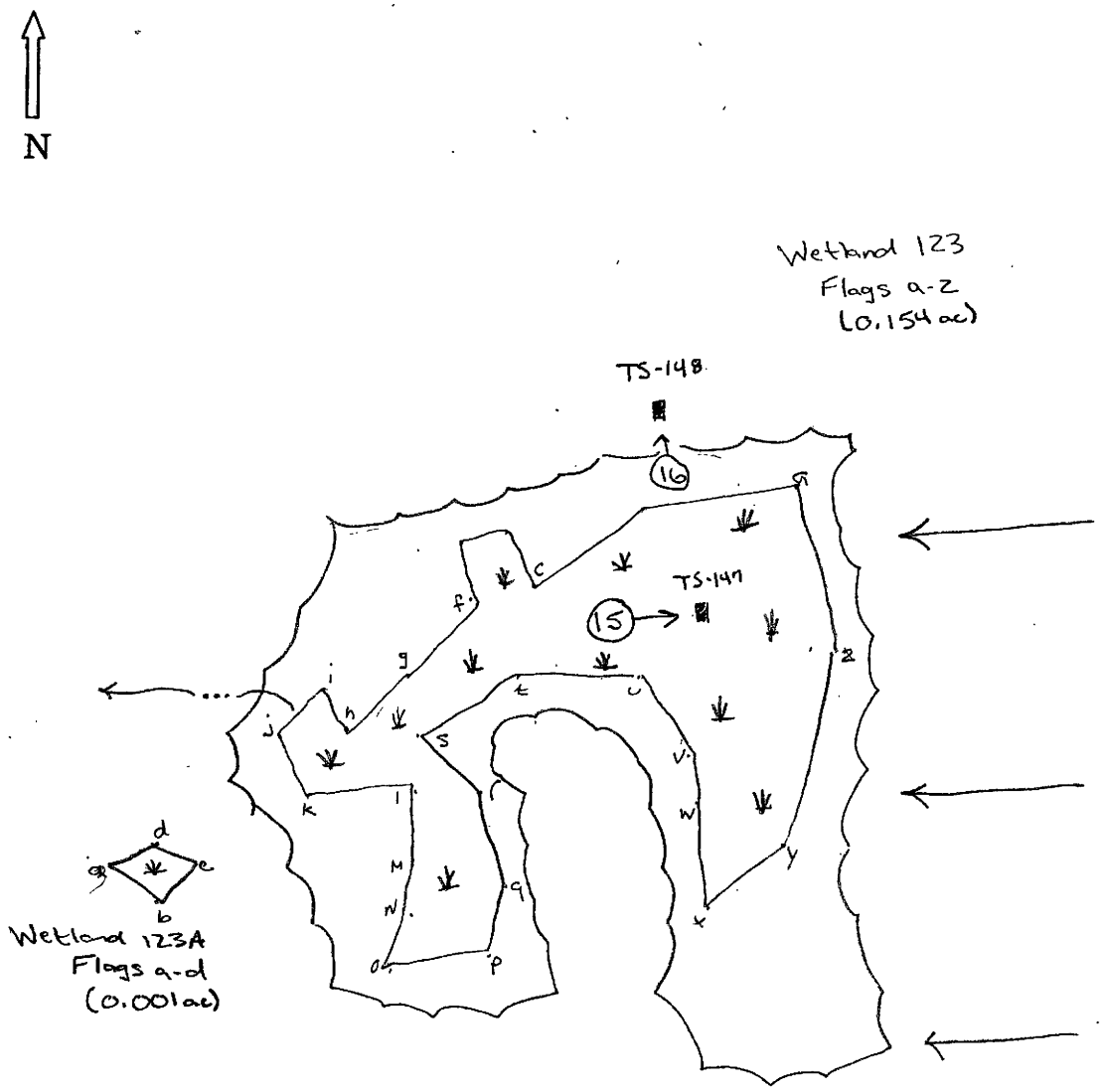
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 123, TS-147

Date: 9/14/07

Acres: 0.155

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/14/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, SRM	**GPS Unit:** GeoXT5 **Camera:** C	**State:** PA
GPS Coordinates:	39° 57' 25.15" N 80° 25' 14.25" W	**Point Name:** TS-148	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-148
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 16
(if needed, explain on reverse.) .			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Fraxinus pennsylvanica	T/S	FACW	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Symphoricarpus albus	S	FACU-	13.			
4.	Rubus idaeus	S	FAC-	14.			
5.	Poa sp.	H	N.I.	15.			
6.	Eupatorium rugosum	H	FACU-	16.			
7.	Viola sp.	H	N.I.	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 2/5 = 40%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-148

SOILS

Map Unit Name:
(Series and Phase): Dormont Culleoka silt loams (DtF) 25-50% Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR3/2	None	N/A	Silt Loam
4-16		10YR4/2	10YR4/4	Few/ Medium	Clay Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓		Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓		Yes _____
Hydric Soils Present?	Yes ✓	No _____		No ✓
				USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland TS-148

Date: 9/14/07

Acres: —

SKETCH MAP:

N

See Sketch Map For Wetland 123, TS-147

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/14/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS SRM	**GPS Unit:** GeoXT5 **Camera:** e	**State:** PA
GPS Coordinates:	39°57'22.67" N 80°25'16.27" W	**Point Name:** TS-149	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 124, TS-149
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 17
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Glyceria sp.	H	OBL	11.			
2.	Boehmeria cylindrica	H	FACW+	12.			
3.	Pilea pumila	H	FACW	13.			
4.	Polygonum persicaria	H	FACW	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 4/4 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 124, TS-149

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullecka Silt Loams 25-50% (DcF) Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10YR 4/2	None	N/A	Silt Loam
2-16		5Y 5/1	5YR 5/8	Many/Med-Coarse	Clay Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

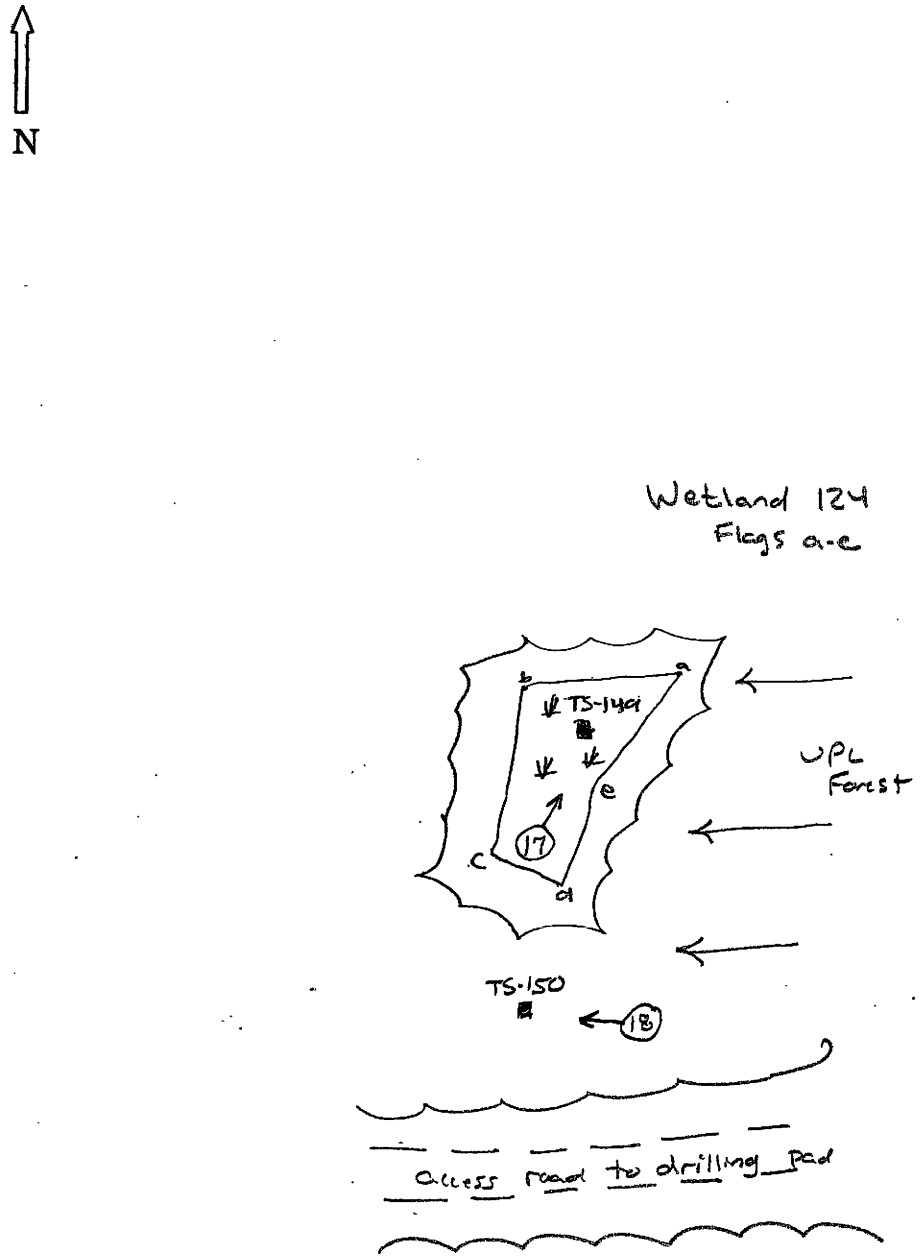
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 124, TS-149

Date: 9/14/07

Acres: 0.003

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRAA No. 5		**Date:** 9/14/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, SRM	**GPS Unit:** GeoXT 5 **Camera:** C	**State:** PA
GPS Coordinates:	39°57'22.44"N 80°25'16.36"W	**Point Name:** TS-150	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Non-Wetland TS-150
Is the area a potential problem area?	Yes	No ✓	**Photograph No:**
(if needed, explain on reverse.)			18

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Fraxinus pennsylvanica	T	FACW	11.			
2.	Lindera benzoin	S	FACW-	12.			
3.	Poa sp.	H	N.I.	13.			
4.	Agrimonia gryposepala	H	FAC	14.			
5.	Eupatorium rugosum	H	FACU-	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 3/4 = 75%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland TS-150

SOILS

Map Unit Name:
(Series and Phase): Dormont Cullbeaka Silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained
(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-3		10YR5/4	None	N/A	Silt Loam
3-16		10YR 6/6	None	N/A	Silt Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CROA No. 5

Wetland ID: Non-Wetland TS-150

Date: 9/14/07

Acres: —

SKETCH MAP:

N

See Sketch Map for Wetland 124

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/14/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, SRM	**GPS Unit:** GeoXT5 **Camera:** C	**State:** PA
GPS Coordinates:	39° 57' 20.58" N 80° 25' 16.39" W	**Point Name:** TS-151	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 125, TS-151
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	**Photograph No:** 19

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Boehmeria cylindrica	H	FACW+	11.			
2.	Poa sp.	H	N.I.	12.			
3.	Pilea pumila	H	FACW	13.			
4.	Equisetum arvense	H	FAC	14.			
5.	Viola sp.	H	N.I.	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 3/3 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 125, TS-151

SOILS

Map Unit Name:
(Series and Phase): Dermont Colloka silt loams 25-50% (DtF)
(Taxonomy Subgroup): Oltic Hapludalfs

Drainage Class: well drained / moderately well drained

Field Observations Confirm Mapped Type?
Yes ____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		2.5Y3/1	5YR4/6	Few/Fine	Silt Loam
2-9		5Y4/1	7.5YR5/8	Common/Medium	Silt Loam
9-16		5Y5/1	5YR5/8	Many/Medium	Clay Loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?
Yes ✓
No ____

USFWS Classification: PEM

Remarks:

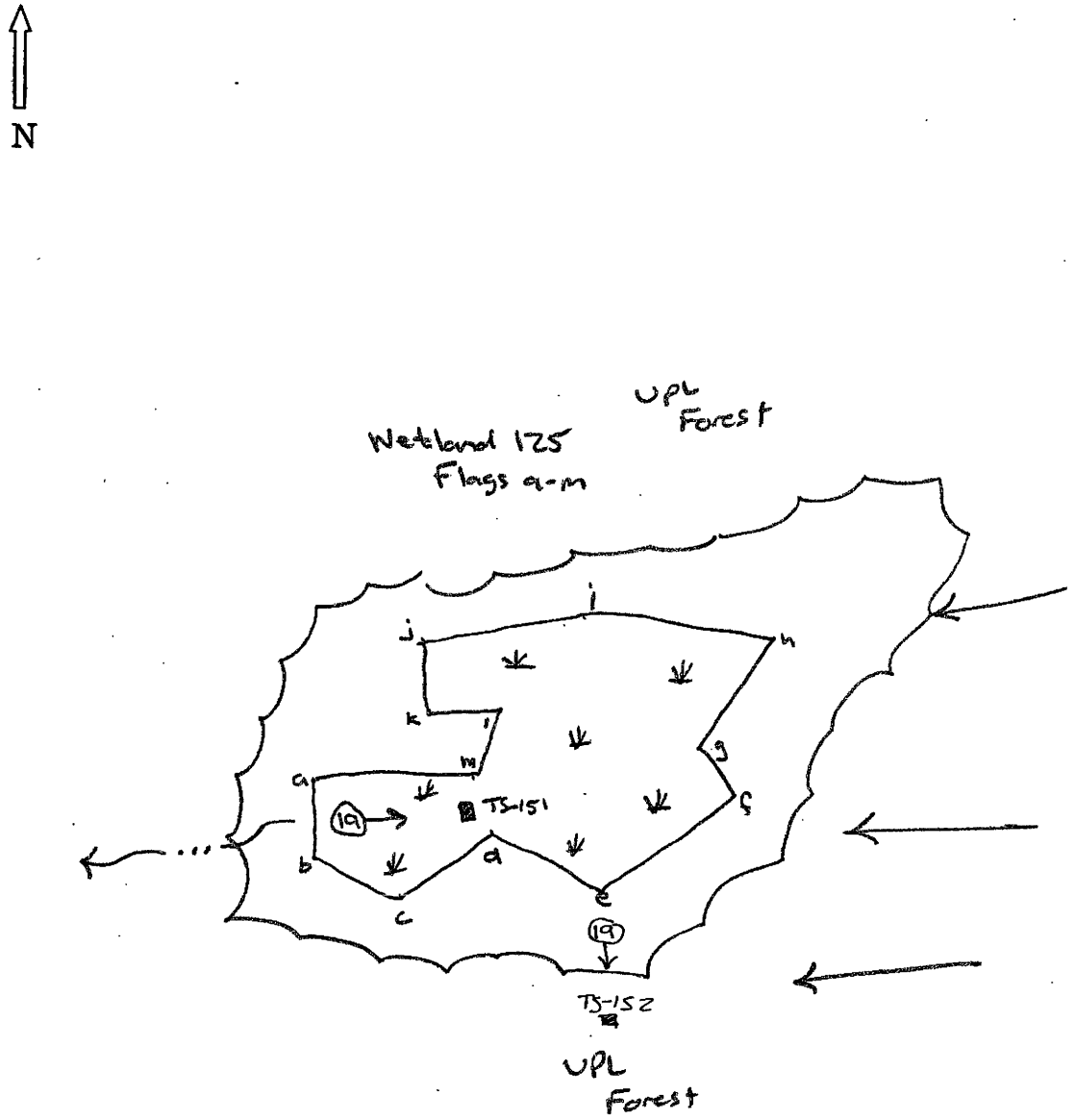
Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Wetland 125, TS-151

Date: 9/14/07

Acres: 0.042

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/14/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, SRM	**GPS Unit:** GeoXT 5 **Camera:** C	**State:** PA
GPS Coordinates:	39°57'20.28"N 80°25'16.21"W	**Point Name:** TS-15Z	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-15Z
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 20
Is the area a potential problem area?	Yes	No ✓	
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Fraxinus pennsylvanica	T	FACW-	11.			
2.	Acer saccharum	T	FACU-	12.			
3.	Lindera benzoin	S	FACW-	13.			
4.	Eupatorium rugosum	H	FACU-	14.			
5.	Polygonum virginianum	H	FAC	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 3/5 = 100%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
_____ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators:
_____ Oxidized Root Channels in Upper 12 Inches
_____ Water Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-152

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullenka silt loams 25-50% (DtF) Drainage Class: well drained/ moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		2.5Y 5/3	None	N/A	Silt Loam
2-16		2.5Y 6/4	None	N/A	Silt Loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No _____
Wetland Hydrology Present?	Yes _____	No ✓
Hydric Soils Present?	Yes _____	No ✓

Is this Sampling Point Within a Wetland?

Yes _____

No ✓

USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland TS-152

Date: 9/14/07

Acres: —

SKETCH MAP:

N

See Sketch Map for Wetland 125, TS-152

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/14/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, SRM	**GPS Unit:** GeoXT5 **Camera:** C	**State:** PA
GPS Coordinates:	39°59'19.39"N 80°25'16.85"W	**Point Name:** TS-153	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 126, TS-153
Is the area a potential problem area?	Yes	No ✓	**Photograph No:**
(if needed, explain on reverse.)			21

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Pilea pumila	H	FACW	11.			
2.	Polygonum hydropiper	H	OBL	12.			
3.	Leersia virginica	H	OBL	13.			
4.	Glyceria striata	H	OBL	14.			
5.	Polygonum sagittatum	H	OBL	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 5/5 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: To Surface (inches)	✓ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 126, TS-153

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullenka silt loams 25-50% (DtF) Drainage Class: Well drained / moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		2.5Y4/1	7.5YR5/8	Few/Fine	Silt Loam
2-13		5Y4/1	5YR5/8	Few/Medium	Clayey Silt Loam
13-16		10Y5/0	None	N/A	Clay Loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes ✓	No _____
Hydric Soils Present?	Yes ✓	No _____

Is this Sampling Point Within a Wetland?

Yes ✓

No _____

USFWS Classification: PEM

Remarks:

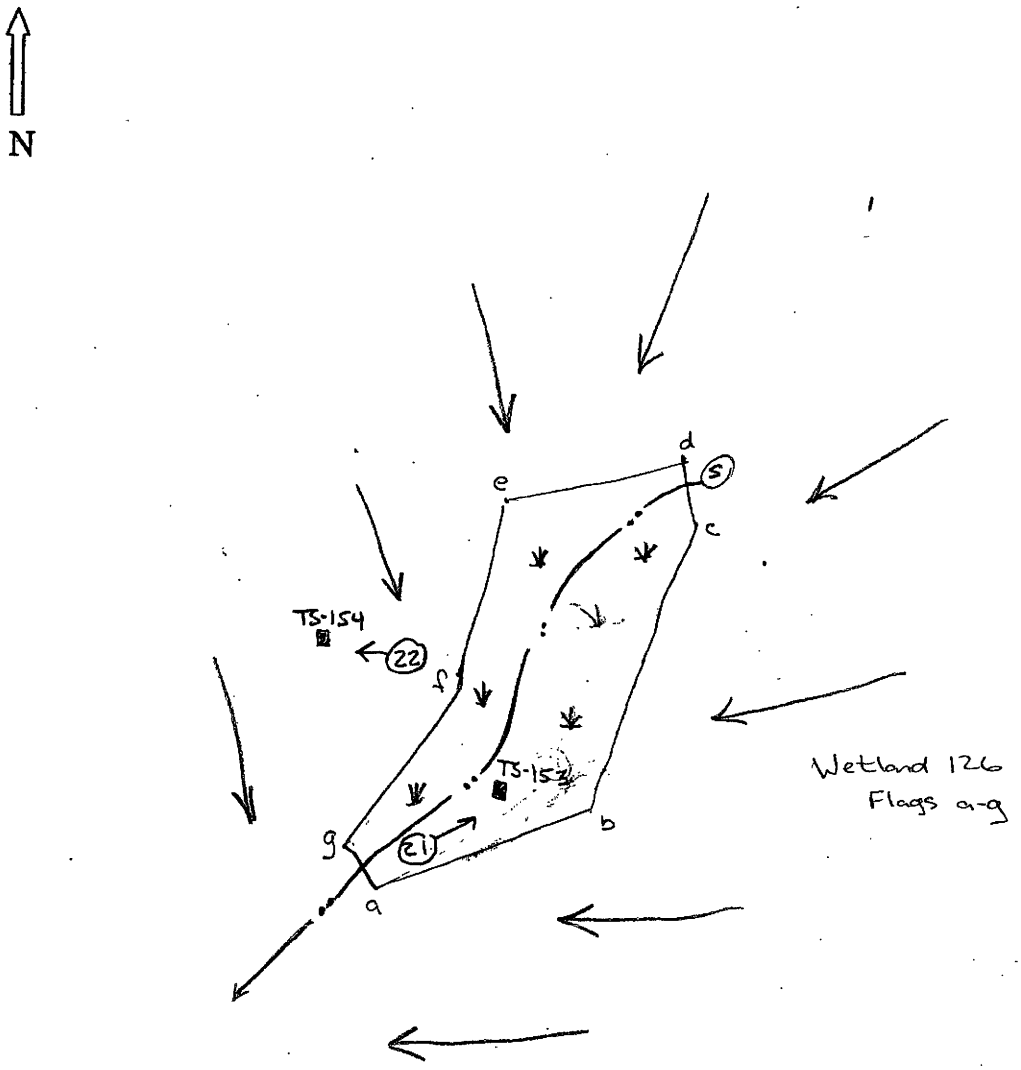
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 126, TS-153

Date: 9/14/07

Acres: 0.019

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		Date: 9/14/07
Applicant:	CONSOL	Parcel/Owner:	County: Greene
Investigator(s):	MLS, SRM	GPS Unit: GeoXT5 Camera: C	State: PA
GPS Coordinates:	39°57'19.58"N 80°25'16.87"W	Point Name: TS-154	

Do normal circumstances exist on the site?	Yes ✓	No	Wetland ID: Non-Wetland TS-154
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Photograph No: 22
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Carya sp.	T	N.I.	11.			
2.	Acer saccharum	T/S	FACU-	12.			
3.	Lindera benzoin	S	FACW-	13.			
4.	Rosa multiflora	S	FACU	14.			
5.	Viola sp	H	N.I.	15.			
6.	Eupatorium rugosum	H	FACU-	16.			
7.	Sedum ternatum	H	UPL	17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 1/5 = 20%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: >16 (inches)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
_____ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators:
_____ Oxidized Root Channels in Upper 12 Inches
_____ Water Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland, TS-154

SOILS

Map Unit Name:

(Series and Phase): Dormont Culleoka silt loams (DtF) 25-50% Drainage Class: well drained / moderately well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		2.5Y 4/3	None	N/A	Silt Loam
4-16		2.5Y 6/6	None	N/A	Silt Loam

Hydric Soil Indicators:

_____ Histosol

_____ Histic Epipedon

_____ Sulfidic Odor

_____ Aquic Moisture Regimes

_____ Reducing Conditions

_____ Gleyed or Low Chroma Colors

_____ Concretions

_____ High Organic Content in Surface Layer in Sandy Soils

_____ Organic Streaking in Sandy Soil

_____ Listed on Local Hydric Soils List

_____ Listed on National Hydric Soils List

_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification:

Remarks:

Project/Site: 071-522.0001 CRPA No. 5

Wetland ID: Non-Wetland TS-154

Date: 9/14/07

Acres: ____

SKETCH MAP:

N

See Sketch Map for Wetland 126, TS-153

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001	CRDA No. 5	**Date:** 9-14-07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, SRM	**GPS Unit:** GeoXT 5 **Camera:** C	**State:** PA
GPS Coordinates:	39° 57' 20.75" N 80° 24' 9.20" W	**Point Name:** TS-155	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 127, TS-155
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 1 *
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

* photo taken 9-18-07 with Camera A

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Rosa multiflora	S		11.			
2.	Impatiens capensis	H		12.			
3.	Aster prenanthoides	H		13.			
4.	Onoclea sensibilis	H		14.			
5.	Epilobium coloratum	H		15.			
6.	Aster lateriflorus	H		16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/)

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	**Primary Indicators:**
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	✓ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	✓ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 127, TS-155

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullerka silt loams 15-25% (DtD) Drainage Class: moderately well drained/ well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		2.5Y5/2	5YR5/8	Common/Fine	Silt Loam
5-16		5Y5/2	5YR4/6	Many/Med-Coarse	Clay Loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____
Wetland Hydrology Present?	Yes ✓	No _____
Hydric Soils Present?	Yes ✓	No _____

Is this Sampling Point Within a Wetland?

Yes ✓

No _____

USFWS Classification: PEM

Remarks:

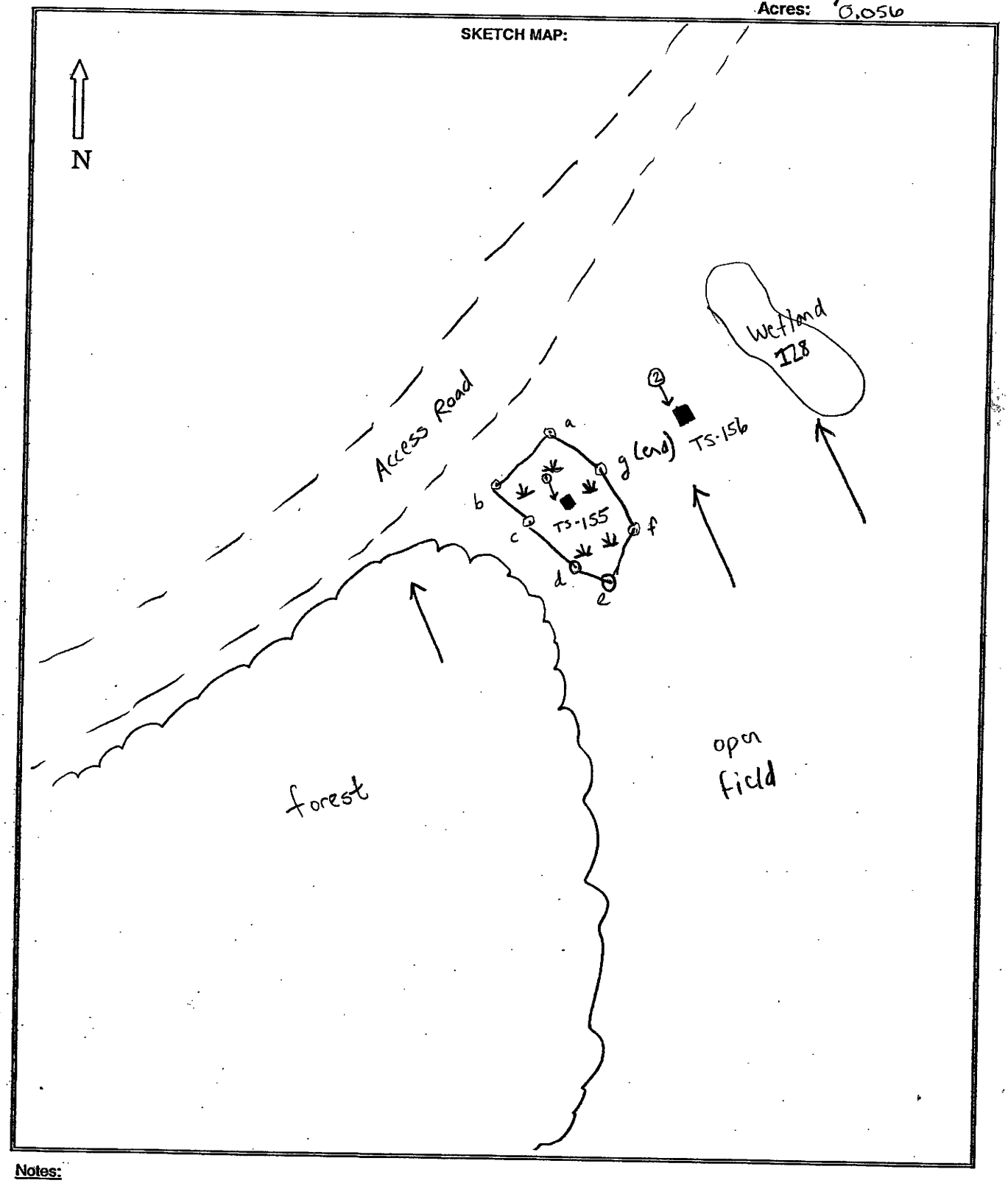
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 127, TS-155

Date: 9/14/07

Acres: 0.056

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site: 071-522.0001 CRDA No. 5			**Date:** 9-18-07
Applicant: Consol	**Parcel/Owner:**		**County:** Greene
Investigator(s): MLS, LCPS	**GPS Unit:** GeoXT 7	**Camera:** A	**State:** PA
GPS Coordinates: 39°57'20.98"N 80°24'8.64"W	**Point Name:** Non-Wetland-TS-156		
Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:** Non-Wetland-TS 156
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	
Is the area a potential problem area?	Yes ____	No ✓	**Photograph No:** 2
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Elaeagnus umbellata	S		11.			
2.	Rubus allegheniensis	S		12.			
3.	Daucus corata	H		13.			
4.	Aster lateriflorus	H		14.			
5.	Dypsicus sylvestris	H		15.			
6.	Trifolium repens			16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/)

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (inches)

Depth to Free Water in Pit: — (inches)

Depth to Saturated Soil: — (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-156

SOILS

Map Unit Name:
(Series and Phase): Dormont-Culleoka silt loams 15-25% (DtD) Drainage Class: moderately well drained/ well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?
Yes _____ No ✓

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR 4/2	7.5YR 5/8	few/medium	silt loam
4-16		2.5Y 4/3	7.5YR 4/6	few/medium	silt loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regimes
_____ Reducing Conditions
_____ Gleyed or Low Chroma Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soil
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland, TS-156

Date: 9-18-07

Acres: —

SKETCH MAP:

N

please see sketch for Wetland 127, TS-125 and Wetland 128, TS-157 for Non-Wetland, TS-156 location

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9-18-07
Applicant:	Consol	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** Geo XT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'20.98"N 80°24'8.13"W	**Point Name:** Wetland 128, TS-157	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Wetland 128, TS-157
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 3
Is the area a potential problem area? (if needed, explain on reverse.)	Yes	No ✓	

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Agrostis alba	H		11.			
2.	Eupatorium perfoliatum	H		12.			
3.	Aster puniceus	H		13.			
4.	Leersia oryzoides	H		14.			
5.	Epilobium coloratum	H		15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/)

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks)
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: >16 (inches)

Depth to Saturated Soil: — (inches)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
_____ Saturated in upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators:
✓ Oxidized Root Channels in Upper 12 Inches
_____ Water Stained Leaves
_____ Local Soil Survey Data
✓ FAC-Neutral Test
_____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 128 - TS 151

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullaoka silt loams (DtD) 15-25% Drainage Class: Moderately well drained/ well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		10YR 4/2	ORCs none	N/A	clayey silt loam
5-13		5Y 4/1	5YR 3/4	few/coarse	clayey silt loam
13-16		2.5Y 4/2	10YR 5/4	common/fine to medium	clay loam

Hydric Soil Indicators:

- _____ Histosol
- _____ Histic Epipedon
- _____ Sulfidic Odor
- _____ Aquic Moisture Regimes
- _____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- _____ Concretions
- _____ High Organic Content in Surface Layer in Sandy Soils
- _____ Organic Streaking in Sandy Soil
- _____ Listed on Local Hydric Soils List
- _____ Listed on National Hydric Soils List
- _____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	Yes	No
Hydrophytic Vegetation Present?	✓	
Wetland Hydrology Present?	✓	
Hydric Soils Present?	✓	

Is this Sampling Point Within a Wetland?

Yes ✓

No _____

USFWS Classification: PEM

Remarks:

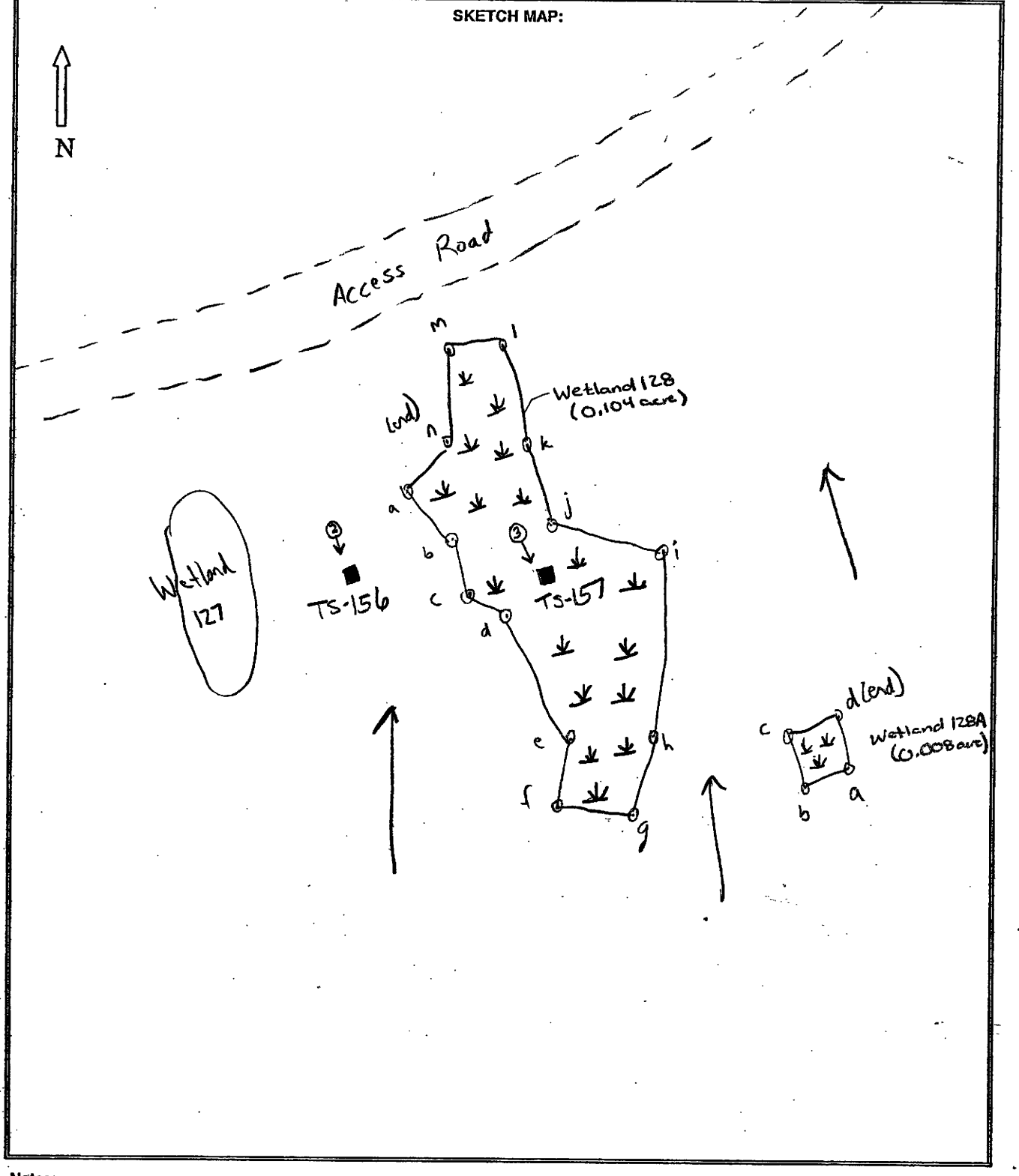
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 128, TS-157

Date: 9-18-07

Acres: 0.112

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/18/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'24.10"N 80°24'3.69"W	**Point Name:** TS-158	

Do normal circumstances exist on the site?	Yes ✓	No ____	**Wetland ID:** Wetland 129, TS-158
Is the site significantly disturbed (Atypical?)	Yes ____	No ✓	
Is the area a potential problem area?	Yes ____	No ✓	**Photograph No:** 4
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Leersia oryzoides	H		11.			
2.	Scirpus atrovirens	H		12.			
3.	Epilobium coloratum	H		13.			
4.	Aster puniceus	H		14.			
5.	Typha latifolia	H		15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/)

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (inches)

Depth to Free Water in Pit: To Surface (inches)

Depth to Saturated Soil: To Surface (inches)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
✓ Saturated in upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
✓ Drainage Patterns in Wetlands

Secondary Indicators:
____ Oxidized Root Channels in Upper 12 Inches
____ Water Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 129, TS-158

SOILS

Map Unit Name:

(Series and Phase): Dormont Cullerton silt loams 15-25% (DED) Drainage Class: moderately well drained/ well drained

(Taxonomy Subgroup): Ultic Hapludalfs

Field Observations Confirm Mapped Type?

Yes ____ No ✓

Profile Description:

Depth (Inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-9		5Y2.5/1	None	N/A	Loamy Silt
9-16		10YR 4/1	10YR 5/6	Few / Fine	Clay Loam

Hydric Soil Indicators:

- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regimes
- ____ Reducing Conditions
- ✓ Gleyed or Low Chroma Colors
- ____ Concretions
- ____ High Organic Content in Surface Layer in Sandy Soils
- ____ Organic Streaking in Sandy Soil
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____
Hydric Soils Present?	Yes ✓	No ____

Is this Sampling Point Within a Wetland?

Yes ✓

No ____

USFWS Classification: PEM

Remarks:

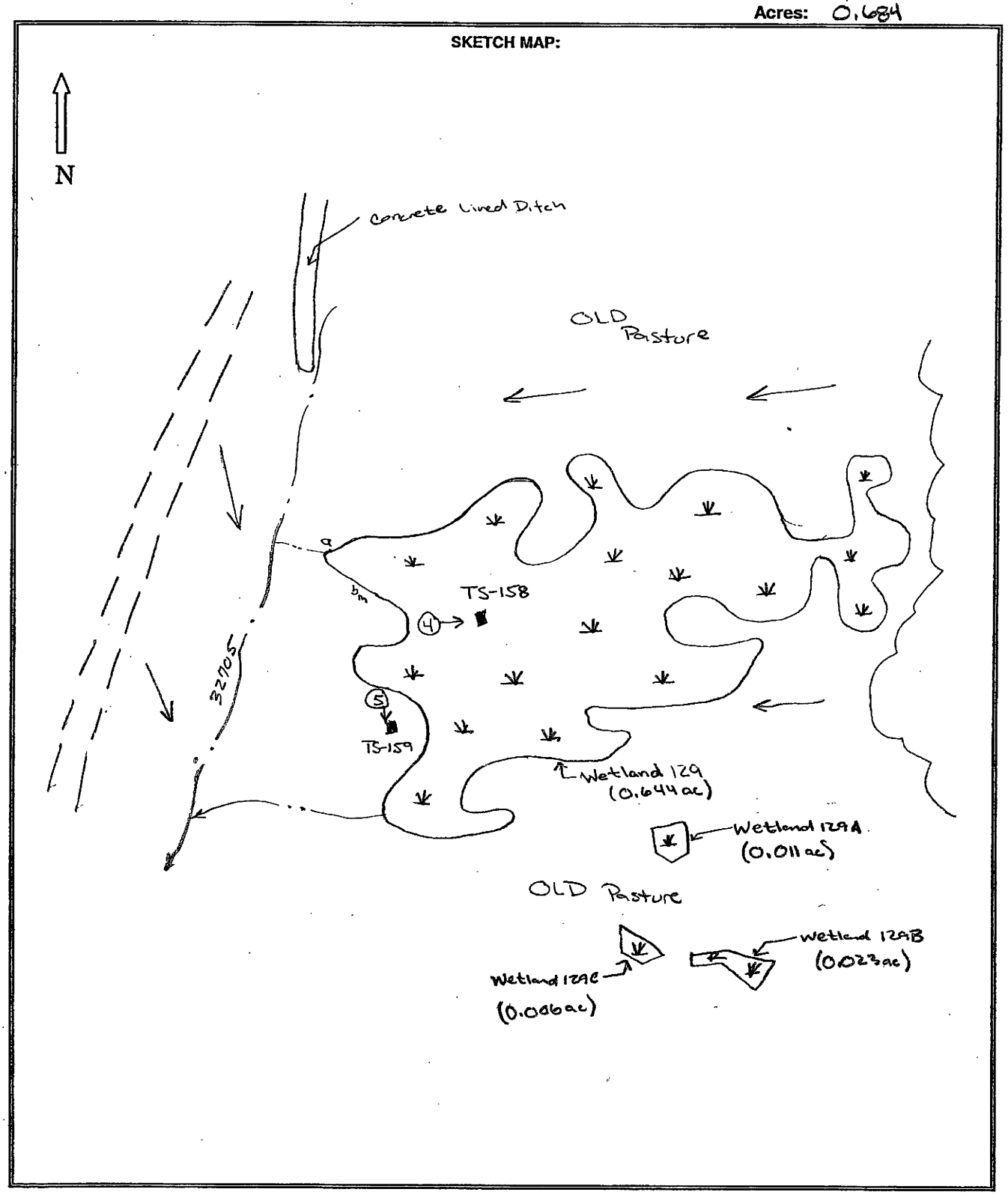
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 129, TS-158

Date: 9/18/07

Acres: 0.684

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/18/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57'23.67"N 80°24'4.21" W	**Point Name:** TS-159	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-159
Is the site significantly disturbed (Atypical?)	Yes	No ✓	
Is the area a potential problem area?	Yes	No ✓	**Photograph No:** 5
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Phleum pratense	H		11.			
2.	Trifolium repens	H		12.			
3.	Trifolium pratense	H		13.			
4.	Dactylis glomerata	H		14.			
5.	Erigeron annuus	H		15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/)

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
	____ Water Marks
Field Observations:	____ Drift Lines
	____ Sediment Deposits
Depth of Surface Water: N/A (inches)	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
Depth to Saturated Soil: >16 (inches)	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland TS-159

SOILS

Map Unit Name:

(Series and Phase): Dormont Culleoka silt loams 15-25% (DtD) Drainage Class: moderately well drained/ well drained

(Taxonomy Subgroup): Ultic Hapludalfs Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-5		2.5Y4/3	7.5YR5/6	Common/Fine	Silt Loam
5-16		10YR5/6	5Y5/3	Common/Medium	Clayey Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No ✓		Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓		Yes _____
Hydric Soils Present?	Yes _____	No ✓		No ✓
				USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No.5

Wetland ID: Non-Wetland TS-159

Date: 9/18/07

Acres: —

SKETCH MAP:

N

See sketch map for Wetland 129, TS-158

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No. 5		**Date:** 9/20/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT **Camera:** A	**State:** PA
GPS Coordinates:	39°57'5.85"N 80°24'53.17"W	**Point Name:** TS-160	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:**
Is the site significantly disturbed (Atypical?)	Yes	No ✓	Wetland 130, TS-160
Is the area a potential problem area?	Yes	No ✓	**Photograph No:**
(If needed, explain on reverse.)			51

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Aster prenanthoides	H	FAC	11.			
2.	Poa sp.	H	N.I.	12.			
3.	Pilea pumila	H	FACW	13.			
4.	Impatiens sp.	H	FACW	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/) 3/3 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	✓ Saturated in upper 12 inches
Field Observations:	____ Water Marks
	____ Drift Lines
Depth of Surface Water: N/A (inches)	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth to Free Water in Pit: >16 (inches)	Secondary Indicators:
	✓ Oxidized Root Channels in Upper 12 Inches
Depth to Saturated Soil: Top 9 (inches)	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRPA No.5

Wetland ID: Wetland 130, TS-160

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (Nw)

(Taxonomy Subgroup): Aeric Fluvaquents

Drainage Class: Somewhat poorly drained

Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-4		10YR4/2	7.5YR5/8	Common/Fine	Clayey Silt Loam
4-9		5Y4/1	ORCS 5YR4/6	Common/Med-Coarse	Clayey Silt Loam
9-16		2.5Y4/2	5YR5/6	Few/Fine	Clay Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
✓	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes ✓	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes ✓	No _____	Yes ✓
Hydric Soils Present?	Yes ✓	No _____	No _____
			USFWS Classification: PEM

Remarks:

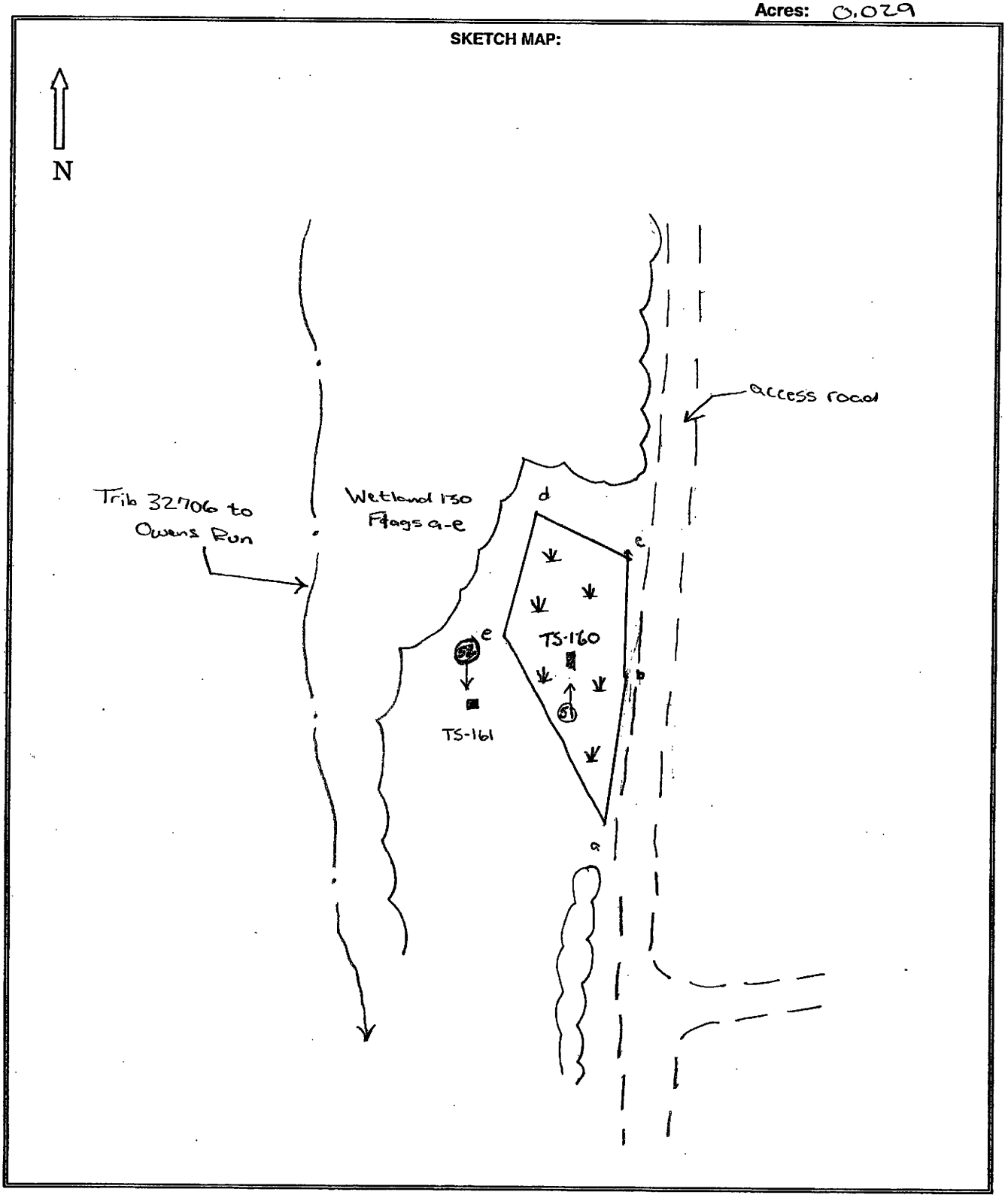
Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Wetland 130, TS-160

Date: 9/20/07

Acres: 0.029

SKETCH MAP:



Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetland Delineation Manual)

Project/Site:	071-522.0001 CRDA No.5		**Date:** 9/20/07
Applicant:	CONSOL	**Parcel/Owner:**	**County:** Greene
Investigator(s):	MLS, LCPS	**GPS Unit:** GeoXT 7 **Camera:** A	**State:** PA
GPS Coordinates:	39°57' 5.75"N 80°24' 53.28"W	**Point Name:** TS-161	

Do normal circumstances exist on the site?	Yes ✓	No	**Wetland ID:** Non-Wetland TS-161
Is the site significantly disturbed (Atypical?)	Yes	No ✓	**Photograph No:** 52
Is the area a potential problem area?	Yes	No ✓	
(if needed, explain on reverse.)			

VEGETATION

	Dominant Plant Species:	Stratum:	Indicator:		Dominant Plant Species:	Stratum:	Indicator:
1.	Ranunculus sp.	H		11.			
2.	Viola sp.	H		12.			
3.	Poa sp.	H		13.			
4.	Eupatorium rugosum	H		14.			
5.	Polygonum virginianum	H		15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW or FAC (and excluding FAC-) = % (/)

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks)	**Wetland Hydrology Indicators:**
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
✓ No Recorded Data Available	____ Saturated in upper 12 inches
Field Observations:	____ Water Marks
Depth of Surface Water: N/A (inches)	____ Drift Lines
Depth to Free Water in Pit: >16 (inches)	____ Sediment Deposits
Depth to Saturated Soil: >16 (inches)	____ Drainage Patterns in Wetlands
	Secondary Indicators:
	____ Oxidized Root Channels in Upper 12 Inches
	____ Water Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Others (Explain in Remarks)

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-161

SOILS

Map Unit Name:

(Series and Phase): Newark silt loam 0-3% (NW) Drainage Class: Somewhat poorly drained

(Taxonomy Subgroup): Aeric Fluvaquents Field Observations Confirm Mapped Type?

Yes _____ No ✓

Profile Description:

Depth (inches):	Horizon:	Matrix Color (Munsell Moist):	Mottle Colors (Munsell Moist):	Mottle (Abundance/Size):	Texture, Concretions, Structure:
0-2		10YR4/3	None	N/A	Silt Loam
2-16		10YR5/3	None	N/A	Silt Loam

Hydric Soil Indicators:

_____	Histosol	_____	Concretions
_____	Histic Epipedon	_____	High Organic Content in Surface Layer in Sandy Soils
_____	Sulfidic Odor	_____	Organic Streaking in Sandy Soil
_____	Aquic Moisture Regimes	_____	Listed on Local Hydric Soils List
_____	Reducing Conditions	_____	Listed on National Hydric Soils List
_____	Gleyed or Low Chroma Colors	_____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes _____	No _____	Is this Sampling Point Within a Wetland?
Wetland Hydrology Present?	Yes _____	No ✓	Yes _____
Hydric Soils Present?	Yes _____	No ✓	No ✓
			USFWS Classification: —

Remarks:

Project/Site: 071-522.0001 CRDA No. 5

Wetland ID: Non-Wetland TS-161

Date: 9/20/07

Acres: —

SKETCH MAP:

N

See Sketch for Wetland 130, TS-160

Notes:

1. Show approximate size and shape of wetland boundaries, adjacent drainage features (streams, ponds, etc.), photograph view, test site location, adjacent reference features (buildings, roads, etc.).
2. Show approximate dimensions of major axes of wetland (i.e., length and width)

APPENDIX B

WETLAND AND VERNAL POOL PHOTOGRAPHS

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 1: Wetland 1

Photograph 2: Wetland 2

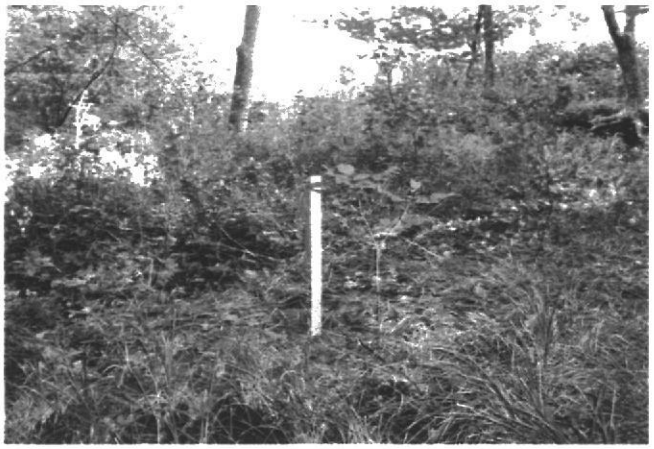
Photograph 3: Wetland 3

Photograph 4: Wetland 4

Photograph 5: Wetland 5

Photograph 6: Wetland 6

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6



Photograph 7: Wetland 7

Photograph 8: Wetland 8

Photograph 9: Wetland 8A

Photograph 10: Wetland 9

Photograph 11: Wetland 10

Photograph 12: Wetland 11

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 13: Wetland 12

Photograph 14: Wetland 13

Photograph 15: Wetland 14

Photograph 16: Wetland 15

Photograph 17: Wetland 16

Photograph 18: Wetland 17

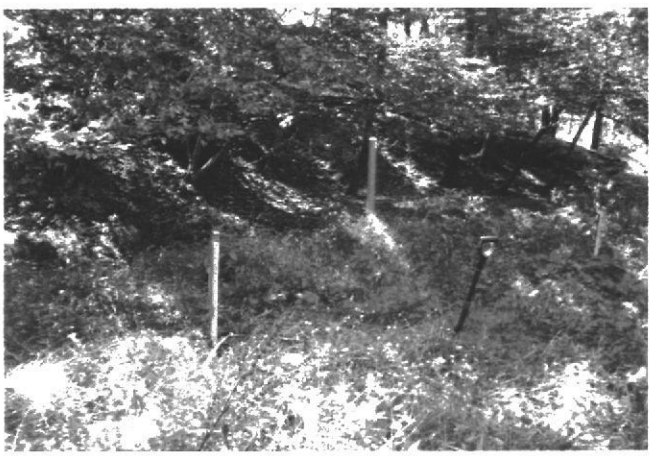
WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 19: Wetland 18

Photograph 20: Wetland 19

Photograph 21: Wetland 20

Photograph 22: Wetland 21



Photograph 23: Wetland 22

Photograph 24: Wetland 23

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 25: Wetland 24

Photograph 26: Wetland 25

Photograph 27: Wetland 26

Photograph 28: Wetland 27

Photograph 29: Wetland 28 (Off-Site)

Photograph 30: Wetland 29

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 31: Wetland 30

Photograph 32: Wetland 31

Photograph 33: Wetland 32

Photograph 34: Wetland 33

Photograph 35: Wetland 34

Photograph 36: Wetland 100

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 37: Wetland 100A

Photograph 38: Wetland 101

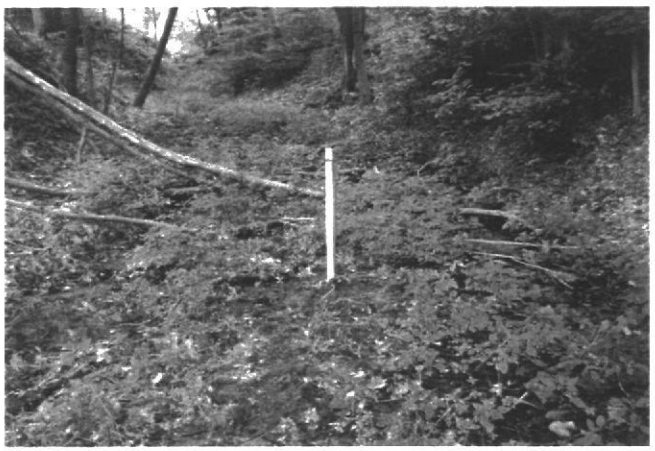
Photograph 39: Wetland 102

Photograph 40: Wetland 103

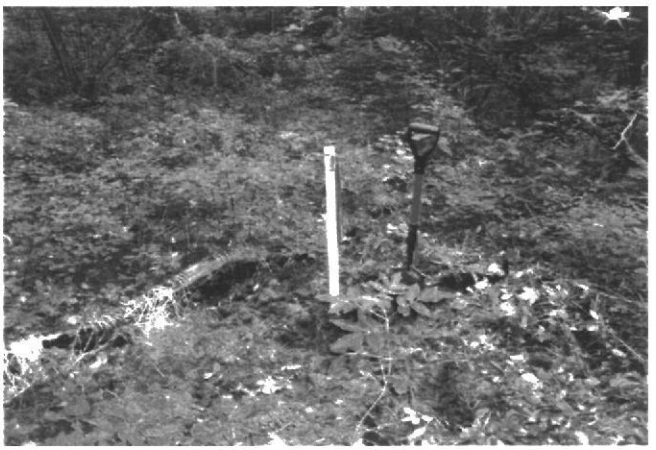
Photograph 41: Wetland 104

Photograph 42: Wetland 105

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6



Photograph 43: Wetland 106



Photograph 44: Wetland 107

Photograph 45: Wetland 108

Photograph 46: Wetland 109

Photograph 47: Wetland 110

Photograph 48: Wetland 111

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

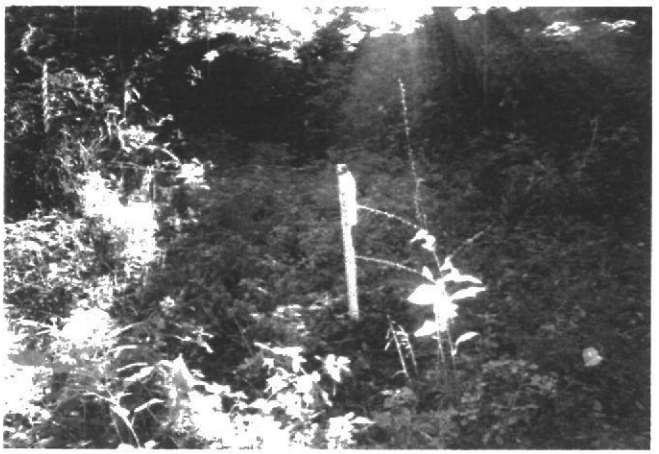
Photograph 49: Wetland 112

Photograph 50: Wetland 113

Photograph 51: Wetland 114

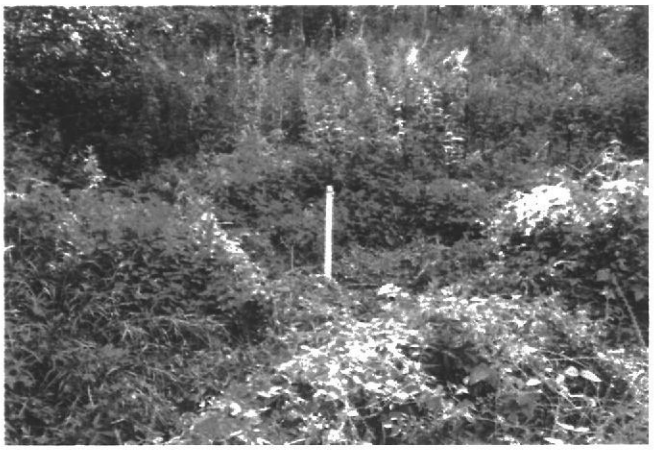
Photograph 52: Wetland 115

Photograph 53: Wetland 116



Photograph 54: Wetland 117

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6



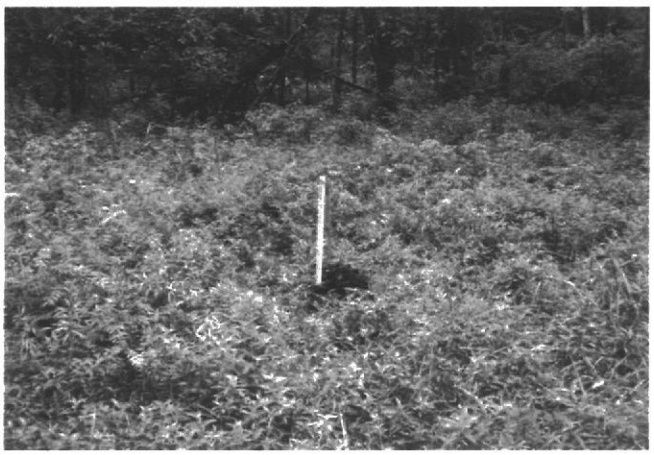
Photograph 55: Wetland 118

Photograph 56: Wetland 119

Photograph 57: Wetland 120

Photograph 58: Wetland 121

Photograph 59: Wetland 122



Photograph 60: Wetland 123

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 61: Wetland 124

Photograph 62: Wetland 125

Photograph 63: Wetland 126

Photograph 64: Wetland 127

Photograph 65: Wetland 128

Photograph 66: Wetland 129

WETLAND AND VERNAL POOL PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 67: Wetland 130

Photograph 68: Vernal Pool 1 (Off-Site)

Photograph 69: Vernal Pool 2

Photograph 70: Vernal Pool 3

Photograph 71: Vernal Pool 4

APPENDIX C

STREAM DETERMINATION DATA FORMS

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705	Project No.: 071-522.0001
Sampling Location: 32705 (1)	Date/Time: 1-9-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXH9 Camera: D
Current Weather Conditions: cloudy, 50°, no precip.	Weather Conditions Past 48 Hours: Some rain, 70°

Stream Hydrology:

Estimated Flow =	300	gpm
Wetted Width =	10-12	ft
Water Depth =	4-12	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	12-15
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock	✓	Sand	✓
Boulder	✓	Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U		✓			
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U		✓			
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae (2 genera)	U			✓		
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S			✓		
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S			✓		
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U					
Tipulidae (2 genera)	B, U, S		✓			
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S	✓				
Sialidae	U, S	✓				
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S	✓				
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U	✓				
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Pt.	32705 (1)	3	4

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

Sampling reach ~ 200' us from start of assessment (just ~ 40' ds of small bedrock waterfall)

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705	Project No.: 071-522.0001
Sampling Location: 32705 (2)	Date/Time: 1-14-08 10:40 am
Coordinates:	Investigator(s): HLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F Light snow	Weather Conditions Past 48 Hours: 30-45°F light rain & snow

Stream Hydrology:

Estimated Flow =	50	gpm
Wetted Width =	2-3	ft
Water Depth =	1-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	4-5
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S	✓				
Uenoidae	U, S	✓				
Diptera (true flies)						
Chironomidae	M, B, U			✓		
Simuliidae	M, U					
Tipulidae (2 genera)	B, U, S		✓			
Tabanidae	U		✓			

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S		✓			
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S			✓		
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705 (2)		79	80

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Sample collected adjacent open field RDB

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705	Project No.: 071-522.0001
Sampling Location: 32705(3)	Date/Time: 1-14-08 2:30pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F Light snow	Weather Conditions Past 48 Hours: 30-45°F light rain & snow

Stream Hydrology:

Estimated Flow =	30-40 gpm
Wetted Width =	2-3 ft
Water Depth =	1-3 in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	3-4
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U			✓		
Simuliidae	M, U		✓			
Tipulidae (2 genera)	B, U, S		✓			
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						
Larval Salamander		✓				

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32705(3)	99	100

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Sample collected between 32705M and 32705O

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705	Project No.: 071-522.0001
Sampling Location: 32705	Date/Time: 1-14-08 3:15pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH-9 Camera: 6
Current Weather Conditions: 30°F Light Snow	Weather Conditions Past 48 Hours: 30-45°F light rain & snow

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	0.5	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3	
Bed & Banks	✓	
Alluvial Channel	✓	
Eroded Channel	✓	partial
Debris-filled	✓	partial
Terrestrial Vegetation		

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705	break	★ 83	★ 84

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- break made @ spring source & significant reduction in flow

★ photos taken w/ Camera D

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705	Project No.: 071-522.0001
Sampling Location: 32705 (4)	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS, MLS GPS Unit: GeoXT Rent 1 Camera: D
Current Weather Conditions: snow, cloudy, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	100-150 gpm
Wetted Width =	6 ft
Water Depth =	3-6 in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	6-8
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae (2)	U		✓			
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S		✓			
Uenoidae	U, S			✓		
Diptera (true flies)						
Chironomidae	M, B, U			✓		
Simuliidae	M, U					
Tipulidae	B, U, S		✓			
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S	✓				
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S			✓		
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						
Larval		✓				
salamander						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32705 (4)	107	108

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- sampling reach ~ 100' DS of Trib 32705F

div/var break made just US of 32705F

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705	Project No.: 071-522.0001
Sampling Location: 32705 (5)	Date/Time: 1-14-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT Rent 1 Camera: G
Current Weather Conditions: snow, 34°, cloudy	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	90-100 gpm
Wetted Width =	4-5 ft
Water Depth =	2-4 in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	5-6
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S	✓				
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae (2)	U		✓			
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S	✓				
Philopotamidae	B, U					
Rhyacophilidae	U, S	✓				
Uenoidae	U, S		✓			
Diptera (true flies)						
Chironomidae	M, B, U			✓		
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U	✓				
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S			✓		
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32705 (5)	109	110

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

Sample reach ~50' US from Trib 32705F

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705A	Project No.: 071-522.0001
Sampling Location: 32705 A(1)	Date/Time: 1-9-08 9:50 AM
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: Geo XH9 Camera: D
Current Weather Conditions: cloudy, 50°	Weather Conditions Past 48 Hours: rain (some), 70°

Stream Hydrology:

Estimated Flow =	15-20	gpm
Wetted Width =	1-2	ft
Water Depth =	2-3	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U		✓			
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S	✓				
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S	✓				
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U		✓			
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S			✓		
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U			✓		
Simuliidae	M, U			✓		
Tipulidae	B, U, S		✓			
Tabanidae	U	✓				

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S	✓				
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						
Larval salamander		✓				

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32705A(1)DN	7	8

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- sampling location 100' us from start of assessment
- end of assessment at loss of flow and channel @ spring house
- start assessment @ confl. w/ 32705

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705B	Project No.: 071-522.0001
Sampling Location: 32705B(1)	Date/Time: 1-9-08
Coordinates:	Investigator(s): MLS, LCBS GPS Unit: GeoXH9 Camera: D
Current Weather Conditions: cloudy, 55°	Weather Conditions Past 48 Hours: Some rain 70°

Stream Hydrology:

Estimated Flow =	1	gpm
Wetted Width =	1-2	ft
Water Depth =	0-1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S	✓				
Plecoptera (stoneflies)						
Capniidae	U	✓				
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S	✓				
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S		✓			
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S	✓				
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32705B Start	11	12

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

*sampled by visual inspection of substrate throughout reach
-start assessment @ wetland boundary
-end assessment @ loss of flow and defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705C	Project No.: 071-522.0001
Sampling Location: 32705C (1)	Date/Time: 1-9-08
Coordinates:	Investigator(s): MLS, LCB GPS Unit: GeoXH9 Camera: D
Current Weather Conditions: Cloudy, 55°	Weather Conditions Past 48 Hours: some rain, 70°

Stream Hydrology:

Estimated Flow =	20-30	gpm
Wetted Width =	2-3	ft
Water Depth =	2-3	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S	✓				
Plecoptera (stoneflies)						
Capniidae	U	✓				
Chloroperlidae	U, S		✓			
Leuctridae	U, S	✓				
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U	✓				
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S	✓				
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U	✓				
Tipulidae (3)	B, U, S			✓		
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S	✓				
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Pt.	32705C-start	17	18

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- sampling reach ~ 100' into the treeline
- start @ start of flow and defined channel
no channel between start and 32705, but
~100' of surface flow connection
- end assessment @ loss of flow and channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705C-1	Project No.: 071-522.0001
Sampling Location: 32705C-1	Date/Time: 1-9-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXH9 Camera: D
Current Weather Conditions: Cloudy, 55°	Weather Conditions Past 48 Hours: Some rain, 70°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705C-1	start	19	20

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

no flow, so no benthos collected
- start @ confl. w/ 32705C
- end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705C-2	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-9-08 1:28pm
Coordinates:	Investigator(s): MLS GPS Unit: Rental 1 Camera: G
Current Weather Conditions: 50°F Partly Cloudy	Weather Conditions Past 48 Hours: 50-75°F Clear Dry

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-1.5
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	✓
Debris-filled	✓ partial
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
	32705C-2 start	4	5

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Defined channel separated from 32705C by access road w/ recent activity.
- End channel @ clearcut & loss of bed and banks

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705C-3	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-9-08 2:00pm
Coordinates:	Investigator(s): MLS GPS Unit: Rental 1 Camera: H
Current Weather Conditions: 50°F Partly Cloudy	Weather Conditions Past 48 Hours: 50-70°F Clear Dry

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-1.5
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705C-3	start	8	9

USACE Classification: Perennial Intermittent (Ephemeral)

PADEP Classification Biologically Diverse Biologically Variable (Upland)

Notes (Include narrative description of sampling location):

- Channel starts ≈ 15' from 32705C
- End assessment @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705C-4	Project No.: 071-522.0001
Sampling Location: 32705C-4	Date/Time: 1-9-07
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXH9 Camera: D
Current Weather Conditions: cloudy, 55°	Weather Conditions Past 48 Hours: Some rain, 70°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705C-4	start	25	26

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- no flow; no sample collected
- start @ confl. w/ 32705C
- end @ loss of flow and defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705C-5	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-9-08 2:30 pm
Coordinates:	Investigator(s): MLS GPS Unit: Rental 1 Camera: H
Current Weather Conditions: 50°F Partly Cloudy	Weather Conditions Past 48 Hours: 50-70°F Clear Dry

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-3	
Bed & Banks	✓	
Alluvial Channel	✓	
Eroded Channel		
Debris-filled	✓	partial
Terrestrial Vegetation		

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705C-5	start	10	11

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32705C
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705D	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-9-08 4:35 pm
Coordinates:	Investigator(s): MLS GPS Unit: Rental 1 Camera: H
Current Weather Conditions: 50°F Partly Cloudy	Weather Conditions Past 48 Hours: 50-70°F Clear Dry

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705D	Start	22	23

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification:	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ wetland boundary
- End @ downcut & loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705E	Project No.: 071-522.0001
Sampling Location: 32705E (1)	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rat1 Camera: D
Current Weather Conditions: Cloudy, light rain, 50°	Weather Conditions Past 48 Hours: some rain, 50°

Stream Hydrology:

Estimated Flow =	5-7	gpm
Wetted Width =	2	ft
Water Depth =	0-1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U	✓				
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705E	start	29	30

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- sampled throughout assessment reach by visual inspection of substrate
- start @ confl. w/ 32705
- end @ loss of flow/channel @ road

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F	Project No.: 071-522.0001
Sampling Location: 32705 F (1)	Date/Time: 1-11-08 2:45 pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 24 hrs

Stream Hydrology:

Estimated Flow =	50-75	gpm
Wetted Width =	2-3	ft
Water Depth =	1-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	3-4
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S	✓				
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U					
Tipulidae	B, U, S		✓			
Tabanidae	U	✓				

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S		✓			
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F (1)		49	50

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32705
- Sample collected @ 250' from start

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F	Project No.: 071-522.0001
Sampling Location: 32705F (2)	Date/Time: 1-11-08 4:00pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 24 hrs

Stream Hydrology:

Estimated Flow =	40	gpm
Wetted Width =	2-3	ft
Water Depth =	1-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	3-4
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U	✓				
Simuliidae	M, U					
Tipulidae	B, U, S	✓				
Tabanidae	U		✓			

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S	✓				
Sialidae	U, S	✓				
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U		✓			
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Soldier fly		✓				
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F(2)		55	56

Notes (Include narrative description of sampling location):

- Sample collected ≈ 50' downstream of head cut

USACE Classification:	Perennial	(Intermittent)	Ephemeral

PADEP Classification	Biologically Diverse	(Biologically Variable)	Upland

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 4:55pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 24 hrs

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F	break	67	68

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F-1	Project No.: 071-522.0001
Sampling Location: 32705F-1	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: Garmin Rent. 1 Camera: D
Current Weather Conditions: some rain, 50°	Weather Conditions Past 48 Hours: rain, 50°

Stream Hydrology:

Estimated Flow =	1	gpm
Wetted Width =	1	ft
Water Depth =	0-0.5	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F-1	start	33	34

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

sampled substrate throughout reach; no benthos found
- start @ confl. w/ 32705F
- end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F-2	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 3:15 pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 24hrs

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F-2	Start	51	52

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Stream is seperated from 32705F by ≈ 60' of upland (isolated)
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F-3	Project No.: 071-522.0001
Sampling Location: 32705F-3	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXTRent.1 Camera: D
Current Weather Conditions: light rain, 50°	Weather Conditions Past 48 Hours: some rain, 50°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F-3	start	37	38

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

surface connection to stream; channel does not connect to 32705F
- start @ beginning of defined channel
- end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705 F-4	Project No.: 071-522.0001
Sampling Location: 32705F-4 (1)	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rent. 1 Camera: D
Current Weather Conditions: light rain, 50°	Weather Conditions Past 48 Hours: some rain, 50°

Stream Hydrology:

Estimated Flow =	7-10	gpm
Wetted Width =	2	ft
Water Depth =	2-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U	✓				
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U		✓			
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S	✓				
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705 F-4	start	39	40

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

Collected sample throughout reach by visual inspection of substrate
- start @ confl. w/ 32705F
- end @ loss of flow/channel @ wetland boundary

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F-5	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 4:20pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 24 hrs

Stream Hydrology:

Estimated Flow =	1	gpm
Wetted Width =	0.5	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F-5	Start	59	60

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32705F
- End @ loss of defined channel
- 2 segments connected by surface water connection

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F-6	Project No.: 071-522.0001
Sampling Location: 32705F-6 (1)	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rect 2 Camera: D
Current Weather Conditions: light rain, 50°	Weather Conditions Past 48 Hours: some rain, 50°

Stream Hydrology:

Estimated Flow =	7-9	gpm
Wetted Width =	2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U	✓				
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U	✓				
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F-6	start	43	44

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

-sampled throughout reach by visual inspection of substrate
-start @ confl. w/ 32705F
end @ loss of flow/channel @ Moody spring marker

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705 F-7	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 4:35 pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F Overcast	Weather Conditions Past 48 Hours: Heavy Rain Past 24 hrs

Stream Hydrology:

Estimated Flow =	2	gpm
Wetted Width =	1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S	✓				
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S	✓				
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705 F-7	Start	65	66

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

. Start @ confluence w/ 32705F

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705F-7	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 4:40 pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 24 hrs

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-1.5
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705F-7	break	61	62

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

· End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 327056	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-14-08 9:20am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 32°F light snow	Weather Conditions Past 48 Hours: 30-45°F light rain & snow

Stream Hydrology:

Estimated Flow =	2	gpm
Wetted Width =	1.5	ft
Water Depth =	1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	✓
Debris-filled	✓ partial
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capnidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
327056	Start	71	72

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ wetland boundary
- Surface water connection between loss of channel & downstream side of road
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705H	Project No.: 071-522.0001
Sampling Location: 32705H(1)	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rent 1 Camera: D
Current Weather Conditions: snow, cloudy, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	10-15	gpm
Wetted Width =	1-2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U			✓		
Simuliidae	M, U			✓		
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U	✓				
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32705H(1) int.	49	50

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

Sampling reach ~50' DS from pink painted surveyor stake
- start @ wetland boundary

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705H	Project No.: 071-522.0001
Sampling Location: 32705H	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXTRext | Camera: D
Current Weather Conditions: cloudy, snowing, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
No BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705H	break	59	60

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

no sample collected
var/upl break made @ loss of flow
@ spring
- end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705H-1	Project No.: 071-522.0001
Sampling Location: 32705H-1	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rent Camera: D
Current Weather Conditions: cloudy, snowing, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	✓

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705H-1	start	53	54

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

no flow; no sample collected
eroded channel filled w/ terrestrial veg.
channel does not completely connect to stream; would be connected by surface flow
-start @ start of defined channel
-end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705H-2	Project No.: 071-522.0001
Sampling Location: 32705H-2	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rect. 1 Camera: D
Current Weather Conditions: cloudy, snowing, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	✓ (some)
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	✓ (some)

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705H-2	start	57	58

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

no sample collected
- start @ confl. w/ 32705H
- end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705 I	Project No.: 071-522.0001
Sampling Location: 32705I(1)	Date/Time: 1-14-08 10:00am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 32°F light snow	Weather Conditions Past 48 Hours: 30-45°F light rain & snow

Stream Hydrology:

Estimated Flow =	3-5 gpm
Wetted Width =	1-2 ft
Water Depth =	1 in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U	✓				
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M	✓				
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705I	Start	75	76

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32705
- Sample collected throughout reach by visual inspection of substrates
- End @ wetland 13A

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705J	Project No.: 071-522.0001
Sampling Location: 32705J (1)	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rect. 1 Camera: D
Current Weather Conditions: cloudy, snowing, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	7-10	gpm
Wetted Width =	1-2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U	✓				
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U		✓			
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Dimilate			✓			
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705J	start	65	66

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

sampled throughout assessment reach by visual inspection of substrate
end @ rd., us of rd. stream w/in wetland boundaries
- start @ confl. w/ 32705

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705K	Project No.: 071-522.0001
Sampling Location: 32705K(1)	Date/Time: 1-14-08 11:40am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXHQ Camera: G
Current Weather Conditions: 30°F Light Snow	Weather Conditions Past 48 Hours: 30-45°F light rain & snow

Stream Hydrology:

Estimated Flow =	5	gpm
Wetted Width =	1-1.5	ft
Water Depth =	1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S		✓			
Plecoptera (stoneflies)						
Capniidae	U	✓				
Chloroperlidae	U, S					
Leuctridae	U, S	✓				
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S	✓				
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705K(1)	Start	83	84

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ Confluence w/ 32705
- Sample collected throughout reach by visual inspection of substrates
- End @ spring source & loss of defined Channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705L	Project No.: 071-522.0001
Sampling Location: 32705L(1)	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: 200XTRent 1 Camera: D
Current Weather Conditions: cloudy, snowing, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	7-10	gpm
Wetted Width =	2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U			✓		
Simuliidae	M, U					
Tipulidae	B, U, S		✓			
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32705L(1) int	67	68

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification:	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

sampled ~ 50' us from road
- start @ flow into culvert that goes underground

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705L	Project No.: 071-522.0001
Sampling Location: 32705L	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXTRext Camera: D
Current Weather Conditions: snowing, cloudy, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705L	break	71	72

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

no sample collected
var/upl break made @ loss of flow
end @ loss of channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705M	Project No.: 071-522.0001
Sampling Location: 32705M(1)	Date/Time: 1-14-08 1:15pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-45°F light snow & rain

Stream Hydrology:

Estimated Flow =	2-3	gpm
Wetted Width =	1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U		✓			
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705M(1)	start	87	88

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ Wetland 21A
- End @ spring source & loss of defined channel
- Sample collected throughout reach by visual inspection of substrates

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705N	Project No.: 071-522.0001
Sampling Location: 32705N(1)	Date/Time: 1-14-08 1:45pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-45°F light rain & snow

Stream Hydrology:

Estimated Flow =	1	gpm
Wetted Width =	1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S	✓				
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S	✓				
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705N(1)	Start	89	90

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32705
- End @ spring source & loss of defined channel
- Sample collected throughout reach by visual inspection of substrates

STREAM DETERMINATION FIELD DATA FORM

Stream: 327050	Project No.: 071-522.0001
Sampling Location: 327050(1)	Date/Time: 1-14-08 2:00pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F Light Snow	Weather Conditions Past 48 Hours: 30-45°F light rain & snow

Stream Hydrology:

Estimated Flow =	2	gpm
Wetted Width =	1-1.5	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2	
Bed & Banks	✓	
Alluvial Channel	✓	
Eroded Channel		
Debris-filled	✓	partial
Terrestrial Vegetation		

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U	✓				
Simuliidae	M, U			✓		
Tipulidae	B, U, S	✓				
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
327050(1)		95	96

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32705
- End @ spring source & loss of defined channel
- Downstream section of channel poorly defined
- Flow intermittent throughout reach

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705P	Project No.: 071-522.0001
Sampling Location: 32705P(1)	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rent 1 Camera: D
Current Weather Conditions: cloudy, snow, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	10-12	gpm
Wetted Width =	2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S	✓				
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S	✓				
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Stratiomyidae		✓				
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705P	start	77	78

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

sampled throughout assessment reach by visual inspection of substrate
- start @ confl. w/ 32705
- end @ wetland boundary

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705Q	Project No.: 071-522.0001
Sampling Location: 32705Q	Date/Time: 1-14-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXTRat 1 Camera: D
Current Weather Conditions: snowing, cloudy, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705Q	start	81	82

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

no flow; no sample collected
trib w/in existing ROW
- start @ wetland boundary
- end @ loss of channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32705 R	Project No.: 071-522.0001
Sampling Location: 32705R	Date/Time: 1-14-08 3:30pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH 9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-45°F Light rain & snow

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2	
Bed & Banks	✓	
Alluvial Channel	✓	
Eroded Channel	✓	partial
Debris-filled	✓	partial
Terrestrial Vegetation		

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32705 R	Start	105	106

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32705
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706	Project No.: 071-522.0001
Sampling Location: 32706 (1)	Date/Time: 1-9-08 2:50 pm
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: Rental 1 Camera: H
Current Weather Conditions: ~50°F Partly Cloudy	Weather Conditions Past 48 Hours: 50-70°F Clear Dry

Stream Hydrology:

Estimated Flow =	30-40 gpm
Wetted Width =	3-4 ft
Water Depth =	1-3 in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	5-7
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder	✓	Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S			✓		
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae (2 genera)	U		✓			
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U					
Tipulidae (2 genera)	B, U, S		✓			
Tabanidae	U		✓			

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S		✓			
Decapoda (crayfish)	U	✓				
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						
larval Salamander						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706(1)	32706(1)	16	17

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Sample collected ≈375' from confluence w/ 32705
- Stream was observed to be dry during Summer 2007

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706	Project No.: 071-522.0001
Sampling Location: 32706(2)	Date/Time: 1-9-08 3:15pm
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: Rented 1 Camera: H
Current Weather Conditions: 50°F Partly Cloudy	Weather Conditions Past 48 Hours: 50-70°F Clear Dry

Stream Hydrology:

Estimated Flow =	30-40	gpm
Wetted Width =	4-5	ft
Water Depth =	1-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	5-7
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U		✓			
Chloroperlidae	U, S			✓		
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S	✓				
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S		✓			
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U	✓				

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S	✓				
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706(2)	32706(2)	18	19

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Sample collected ≈ 480' upstream of sample 1
- Stream observed to be dry in summer 2007
- Young instars

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706	Project No.: 071-522.0001
Sampling Location: 32706 (3)	Date/Time: 1-11-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT Rental | Camera: D
Current Weather Conditions: sun, some clouds, 50°	Weather Conditions Past 48 Hours: some rainfall, 50°

Stream Hydrology:

Estimated Flow =	90-100	gpm
Wetted Width =	4-5	ft
Water Depth =	3-7	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	5-6
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U				✓	
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S	✓				
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S			✓		
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U	✓				

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U	✓				
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32706 (3) int.	1	2

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- sampling reach ~ 75' DS of wetland 104C

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706A	Project No.: 071-522.0001
Sampling Location: 32706A (1)	Date/Time: 1-9-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXH9 Camera: D
Current Weather Conditions: Cloudy, 55°	Weather Conditions Past 48 Hours: Some rain, 70°

Stream Hydrology:

Estimated Flow =	1	gpm
Wetted Width =	1-2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32706A (1) int	31	32

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

sampling reach just us of start of flow
start @ wetland boundary
end @ loss of flow and defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706B	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 9:15am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 50°F Overcast dry	Weather Conditions Past 48 Hours: Heavy rain past 18 hrs

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1	
Bed & Banks	✓	
Alluvial Channel		
Eroded Channel	✓	
Debris-filled	✓	partial
Terrestrial Vegetation		

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
	32706B start	1	2

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- hydrologic connection between 32706B & wetland 105

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706B	Project No.: 071-522.0001
Sampling Location: 32706B (1)	Date/Time: 1-11-08 9:30am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH 9 Camera: G
Current Weather Conditions: 50°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 18hrs

Stream Hydrology:

Estimated Flow =	3-5	gpm
Wetted Width =	1-2	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S			✓		
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S			✓		
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U			✓		
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706B(1)		5	6

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Break made at start of flow
- End @ spring source & loss of channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706C	Project No.: 071-522.0001
Sampling Location: 32706C(1)	Date/Time: 1-11-08 9:45am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH 9 Camera: G
Current Weather Conditions: 50°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 18 hrs

Stream Hydrology:

Estimated Flow =	3-5	gpm
Wetted Width =	2-3	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	✓
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock	✓	Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenlidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capnlidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S			✓		
Peltoperlidae	S	✓				
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S	✓				
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Dixidae			✓			
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706C(1)		9	10

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Stream starts @ Wetland 105
- Sample collected throughout reach by inspecting substrate
- End @ spring source & loss of channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706D	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 10:20am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 50°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 18hrs

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simulidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706D	32706D start	13	14

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32706
- End @ downcut & loss of defined channel

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706E	Project No.: 071-522.0001
Sampling Location: 32706E (1)	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rect.1 Camera: D
Current Weather Conditions: cloudy 50°	Weather Conditions Past 48 Hours: some rain, 50°

Stream Hydrology:

Estimated Flow =	50-60	gpm
Wetted Width =	3	ft
Water Depth =	2-4	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	3-4
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U		✓			
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U					
Tipulidae	B, U, S	✓				
Tabanidae	U	✓				

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S		✓			
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32706E (1) int.	5	6

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- sampling reach ~75' us from wetland 104A
- start @ confl. w/32706
- end @ loss of flow/channel @ Moody's spring marker

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706E-1	Project No.: 071-522.0001
Sampling Location: 32706E-1 (1)	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rent. 1 Camera: D
Current Weather Conditions: cloudy, sprinkling, 50°	Weather Conditions Past 48 Hours: Some rain, 50°

Stream Hydrology:

Estimated Flow =	20-30	gpm
Wetted Width =	1-2	ft
Water Depth =	2-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U		✓			
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U	✓				

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	32706E-1(1) int.	9	10

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

~ sampling reach ~ 50' us from start of assessment

- found neumoridae + oligo. just ds of break

- start @ confl. w/ 32706E

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706E-1	Project No.: 071-522.0001
Sampling Location: 32706E-1	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rev.1 Camera: D
Current Weather Conditions: Cloudy, light rain, 50°	Weather Conditions Past 48 Hours: Some rain, 50°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
No BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706E-1	break	19	20

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

end @ loss of channel @ culvert @ road
- var/upl break made at the loss of flow

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706E-2	Project No.: 071-522.0001
Sampling Location: 32706E-2 (1)	Date/Time: 1-11-08
Coordinates:	Investigator(s): [illegible] GPS Unit: GeoXTRect 1 Camera: D
Current Weather Conditions: Cloudy, light rain, 50°	Weather Conditions Past 48 Hours: some rain, 50°

Stream Hydrology:

Estimated Flow =	5-7	gpm
Wetted Width =	1-2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock	✓	Sand	✓
Bouldér		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S	✓				
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706E-2	start	15	16

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- sampled throughout assessment reach by visual inspection of substrate
- start @ confl. w/ 32706E-1

STREAM DETERMINATION FIELD DATA FORM

Stream:	32706E-2	Project No.:	071-522.0001
Sampling Location:	32706E-2	Date/Time:	1-11-08
Coordinates:		Investigator(s): LCPS	GPS Unit: GeoXT Rect / Camera: D
Current Weather Conditions:	cloudy, light rain, 50°	Weather Conditions Past 48 Hours:	Some rain, 50°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706E-2	break	13	14

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

end @ loss of channel
var/up! break made @ the loss of flow

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706E-3	Project No.: 071-522.0001
Sampling Location: 32706E-3 (1)	Date/Time: 1-11-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rat1 Camera: D
Current Weather Conditions: cloudy, light rain, 50°	Weather Conditions Past 48 Hours: Some rain, 50°

Stream Hydrology:

Estimated Flow =	5-7	gpm
Wetted Width =	1-2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S	✓				
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Stratiomyidae		✓				
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706E-3	start	21	22

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

sampled throughout reach by visual inspection of substrate
- start @ confl. w/ 32706E
- end @ loss of channel and wetland boundary

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706E-4	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 1:00pm
Coordinates:	Investigator(s): MLS GPS Unit: GarmH9 Camera: G
Current Weather Conditions: 45°F light rain	Weather Conditions Past 48 Hours: Heavy Rain past 18hrs

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	0.5	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706E-4	Start	41	42

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Uplands

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32706E-3
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706E-5	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 1:20 pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F light rain	Weather Conditions Past 48 Hours: Heavy Rain past 24hrs

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706E-5	Start	45	46

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32706E
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706F	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 10:40am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH 9 Camera: G
Current Weather Conditions: 50°F Overcast Dry	Weather Conditions Past 48 Hours: Heavy Rain Past 18 hrs

Stream Hydrology:

Estimated Flow =	10	gpm
Wetted Width =	1-1.5	ft
Water Depth =	1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
	32706F start	17	18

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32706
- End @ loss of defined channel
- Stream originates from erosion control diversion ditch

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706G	Project No.: 071-522.0001
Sampling Location: 32706G(1)	Date/Time: 1-11-08 11:00am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F light rain	Weather Conditions Past 48 Hours: Heavy Rain Past 18 hrs

Stream Hydrology:

Estimated Flow =	10	gpm
Wetted Width =	2-3	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	3-4
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S	✓				
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S	✓				
Philopotamidae	B, U					
Rhyacophilidae	U, S	✓				
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae (2 genera)	B, U, S		✓			
Tabanidae	U	✓				

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U	✓				
Unionidae	U					
Vertebrates						
Dusky Salamander						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706G(1)		21	22

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (include narrative description of sampling location):

- Start @ confluence w/ 32706
- End @ spring source (4" PVC pipe)

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706H	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 11:50am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH 9 Camera: G
Current Weather Conditions: Intermittent rain 45°F	Weather Conditions Past 48 Hours: Heavy Rain Past 18 hrs

Stream Hydrology:

Estimated Flow =	3-4	gpm
Wetted Width =	1	ft
Water Depth =	1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓ Partial
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706H	start	27	28

Notes (Include narrative description of sampling location):

- Start @ wetland 106
- End @ loss of defined channel

USACE Classification:	Perennial	Intermittent	(Ephemeral)

PADEP Classification	Biologically Diverse	Biologically Variable	(Upland)

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706I	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 11:50
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 45°F light rain	Weather Conditions Past 48 Hours: Heavy Rain Past 18hrs

Stream Hydrology:

Estimated Flow =	1-2 gpm
Wetted Width =	0.5 ft
Water Depth =	<1 in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706I	start	31	32

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32706
- End @ loss of defined channel

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

STREAM DETERMINATION FIELD DATA FORM

Stream: 32706J	Project No.: 071-522.0001
Sampling Location:	Date/Time: 1-11-08 12:30pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXHG Camera: G
Current Weather Conditions: 45°F light rain	Weather Conditions Past 48 Hours: Heavy rain past 18hrs

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	<1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32706J	Start	35	36

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32706
- end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR	Project No.: 071-522.0001
Sampling Location: UNT-OR(1)	Date/Time: 1-15-08 9:30am
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F Light Snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	75-100	gpm
Wetted Width =	3-4	ft
Water Depth =	1-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	5-7
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U	✓				
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S		✓			
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae (2 genera)	B, U, S	✓				
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S	✓				
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S	✓				
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S		✓			
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling location	UNT-OR(1)	115	116

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Sample collected ≈ 175' upstream of Ackley Creek Rd
- Stream was dry in Fall 2007

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR	Project No.: 071-522.0001
Sampling Location: UNT-OR (2)	Date/Time: 1-15-08 10:40
Coordinates:	Investigator(s): MLS GPS Unit: Geo X H9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	75-100	gpm
Wetted Width =	3-5	ft
Water Depth =	1-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	6-8
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U	✓				
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S		✓			
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U	✓				
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S	✓				
Limnephilidae	U, S	✓				
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S			✓		
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S		✓			
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S		✓			
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S	✓				
Oligochaeta (segmented worms)	B, U, S		✓			
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sample location	UNT-OR (2)	121	122

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

· Sample collected ≈ 50' upstream of UNT-OR C

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR	Project No.: 071-522.0001
Sampling Location: UNT-OR (3)	Date/Time: 1-15-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions:	Weather Conditions Past 48 Hours:

Stream Hydrology:

Estimated Flow =	50-60	gpm
Wetted Width =	5-6	ft
Water Depth =	2-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	6-7
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S	✓				
Heptageniidae	B, U	✓				
Isonychiidae	B					
Leptophlebiidae	U, S	✓				
Plecoptera (stoneflies)						
Capniidae	U	✓				
Chloroperlidae	U, S		✓			
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S	✓				
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae (2)	U		✓			
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S	✓				
Limnephilidae	U, S		✓			
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S	✓				
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U					
Tipulidae (2)	B, U, S		✓			
Tabanidae	U		✓			

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S	✓				
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						
Larval salamander			✓			

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	UNT-OR(3)	155	156

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

sample taken ~50 downstream of Tribs UNT-ORI and UNT-ORJ

STREAM DETERMINATION FIELD DATA FORM

Stream:	UNT-OR	Project No.:	071-522.0001
Sampling Location:	UNT-OR (4)	Date/Time:	1-15-08
Coordinates:		Investigator(s):	MLS, LCPS GPS Unit: Geo XH9 Camera: G
Current Weather Conditions:	snow, cloudy, 30°	Weather Conditions Past 48 Hours:	snow, 30°

Stream Hydrology:

Estimated Flow =	20-30	gpm
Wetted Width =	3-4	ft
Water Depth =	2-4	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	4-5
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S	✓				
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S		✓			
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae (2)	B, U, S		✓			
Tabanidae	U	✓				

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
	UNT-OR(4)	157	158

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

Sampling Reach ~ 15-20' upstream of Trib UNT-ORJ

div/var break made @ Trib UNT-ORJ

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR	Project No.: 071-522.0001
Sampling Location: UNT-OR	Date/Time: 1-15-08 2:40 pm
Coordinates:	Investigator(s): MLS GPS Unit: Geo XH 9 Camera: G
Current Weather Conditions: 30°F Light Snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1	
Bed & Banks	✓	
Alluvial Channel	✓	
Eroded Channel	✓	partial
Debris-filled	✓	partial
Terrestrial Vegetation		

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR	break	151	152

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (include narrative description of sampling location):

- break made @ confluence w/ UNT-OR P where stream down cuts & flow is lost

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR A	Project No.: 071-522.0001
Sampling Location: UNT-OR A (1)	Date/Time: 1-15-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXTRext 1 Camera: D
Current Weather Conditions: snow, cloudy, 30°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	10-12	gpm
Wetted Width =	1-2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock	✓	Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capnidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S			✓		
Peltoperlidae	S	✓				
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simulidae	M, U	✓				
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Dixidae			✓			
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR A	start	87	88

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- sampled throughout reach by visual inspection of substrate
- start @ wetland boundary
- end @ loss of flow and defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR B	Project No.: 071-522.0001
Sampling Location: UNT-OR B (1)	Date/Time: 1-15-08 10:00am
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	1-2	gpm
Wetted Width =	1-1.5	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U		✓			
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S	✓				
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S	✓				
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Dixidae		✓				
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR B	start	119	120

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ Wetland 118
- End @ spring source & loss of defined channel
- Sample collected throughout reach by visual inspection of substrate

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR C	Project No.: 071-522.0001
Sampling Location: UNT-OR C (1)	Date/Time: 1-15-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rutl Camera: D
Current Weather Conditions: snow, cloudy, 30°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	tr	gpm
Wetted Width =	1	ft
Water Depth =	0-1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capnidae	U		✓			
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-ORC	start	89	90

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):
stream isolated from UNT-OR by about 50' of upland
start @ channel/flow
end @ loss of channel/flow @ Moody spring marker
sampled throughout reach by visual inspection of substrate

STREAM DETERMINATION FIELD DATA FORM

Stream:	UNT-OR D	Project No.:	071-522.0001
Sampling Location:	UNT-OR D (1)	Date/Time:	1-15-08
Coordinates:		Investigator(s): LCPS	GPS Unit: GeoXTRect I Camera: D
Current Weather Conditions:	snow, cloudy, 30°	Weather Conditions Past 48 Hours:	snow, 34°

Stream Hydrology:

Estimated Flow =	15-20	gpm
Wetted Width =	2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U		✓			
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U		✓			
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR D	start	93	94

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

Sampled throughout reach by visual inspection of substrate
Start @ confl. w/ UNT-OR
var/ upl break made at loss of flow

STREAM DETERMINATION FIELD DATA FORM

Stream:	UNT-OR D	Project No.:	071-522.0001
Sampling Location:	UNT-OR D	Date/Time:	1-15-08
Coordinates:		Investigator(s):	LCPS GPS Unit: GeoXT Rcvr / Camera: D
Current Weather Conditions:	Snow, Cloudy, 30°	Weather Conditions Past 48 Hours:	Snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
No BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR D	break	95	96

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

end of assessment at loss of defined channel at Moody's spring marker
var/upl break made at loss of flow

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR E	Project No.: 071-522.0001
Sampling Location: UNT-OR E(1)	Date/Time: 1-15-08 11:20 am
Coordinates:	Investigator(s): MLS GPS Unit: Geo#19 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	5	gpm
Wetted Width =	2	ft
Water Depth =	1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3	
Bed & Banks	✓	
Alluvial Channel	✓	
Eroded Channel	✓	partial
Debris-filled	✓	partial
Terrestrial Vegetation	✓	partial

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U	✓				
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Hydrophilidae		✓				
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR E	Start	125	126

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ UNT-OR
- End @ spring source & loss of defined channel
- Sample collected throughout lower portion (100') of stream by visual inspection of substrate

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR F	Project No.: 071-522.0001
Sampling Location: UNT-OR F	Date/Time: 1-15-08 12:00pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR F	Start	127	128

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ UNT-OR
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR G	Project No.: 071-522.0001
Sampling Location: UNT-OR G	Date/Time: 1-15-08 12:20pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR G	start	133	134

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start of channel seperated from UNT-OR by ≈ 60' of upland - isolated
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream:	UNT-ORH	Project No.:	071-522.0001
Sampling Location:	UNT-ORH	Date/Time:	1-15-08
Coordinates:		Investigator(s): LCPS	GPS Unit: GeoXT Rent | Camera: D
Current Weather Conditions:	snow, cloudy, 30°	Weather Conditions Past 48 Hours:	snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-ORH	start	101	102

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

Stream isolated from UNT-ORH by ~30' upland
start @ defined channel
end @ loss of channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR I	Project No.: 071-522.0001
Sampling Location: UNT-OR I	Date/Time: 1-15-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXTrent Camera: D
Current Weather Conditions: snow, cloudy, 30°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble	✓	Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR I	start	105	106

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

start @ confl. w/ UNT-OR

end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR J	Project No.: 071-522.0001
Sampling Location: UNT-OR J (1)	Date/Time: 1-15-08 12:45
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	5-10	gpm
Wetted Width =	2-3	ft
Water Depth =	1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	3-4
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	✓ partial
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock	✓	Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U	✓				
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S	✓				
Nemouridae	U, S					
Peltoperlidae	S	✓				
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S	✓				
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U	✓				
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR J	start	135	136

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ UNT-OR
- End @ wetland 126
- Sample collected in first 30' by visually inspecting substrate

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR K	Project No.: 071-522.0001
Sampling Location: UNT-OR K	Date/Time: 1-15-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rev1 Camera: D
Current Weather Conditions: Snow, 30°, cloudy	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	<1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR K	Start	109	110

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

start @ confl. w/ UNT-OR
end @ wetland 125 boundary
small amount of flow, no benthics found

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR L	Project No.: 071-522.0001
Sampling Location: UNT-OR L	Date/Time: 1-15-08 1:15pm
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F Light snow

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1.5
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock	✓	Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR L	Start	141	142

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ Confluence w/ UNT-OR
- End @ downcut & loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-ORM	Project No.: 071-522.0001
Sampling Location: UNT-ORM	Date/Time: 1-15-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rect / Camera: D
Current Weather Conditions: snow, 30°, cloudy	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	<1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capnidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-ORM	start	113	114

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

start @ confl. w/ UNT-OR
end @ loss of channel
small amount of flow, but no benthos found

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR N	Project No.: 071-522.0001
Sampling Location: UNT-OR N (1)	Date/Time: 1-15-08 2:00pm
Coordinates:	Investigator(s): MGS GPS Unit: GeoXT9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	2	gpm
Wetted Width =	1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U	✓				
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S	✓				
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR N	Start	145	146

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ UNT-OR
- break in channel connected by surface water
- End @ Wetland 123

STREAM DETERMINATION FIELD DATA FORM

Stream:	UNT-OR O	Project No.:	071-522.0001
Sampling Location:	UNT-OR O	Date/Time:	1-15-08
Coordinates:		Investigator(s):	LCPS GPS Unit: GeoXT Rev1 Camera: D
Current Weather Conditions:	snow, cloudy, 30°	Weather Conditions Past 48 Hours:	snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR O	Start	117	118

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

isolated from UNT OR by ~40'
Start @ start of defined channel
end @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR P	Project No.: 071-522.0001
Sampling Location: UNT-OR P	Date/Time: 1-15-08 2:30
Coordinates:	Investigator(s): MLS GPS Unit: GeoXH 9 Camera: G
Current Weather Conditions: 30°F light snow	Weather Conditions Past 48 Hours: 30-40°F light snow

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2	
Bed & Banks	✓	
Alluvial Channel	✓	
Eroded Channel	✓	partial
Debris-filled	✓	partial
Terrestrial Vegetation		

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR P	Start	149	150

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ UNT-OR
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT-OR Q	Project No.: 071-522.0001
Sampling Location: UNT-OR Q	Date/Time: 1-15-08
Coordinates:	Investigator(s): LCPS GPS Unit: GeoXT Rect 1 Camera: D
Current Weather Conditions: Snow, Cloudy, 30°	Weather Conditions Past 48 Hours: Snow, 34°

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT-OR Q	start	121	122

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

start @ confl. w/ UNT-OR
end @ downcut @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT 2 -OR	Project No.: 071-522.0001
Sampling Location: UNT 2-OR (1)	Date/Time: 1-15-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXTRext Camera: D
Current Weather Conditions: snow, cloudy, 34°	Weather Conditions Past 48 Hours: snow, 34°

Stream Hydrology:

Estimated Flow =	5-10	gpm
Wetted Width =	1	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	✓

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S	✓				
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S		✓			
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT2-OR	start	125	126

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

start @ project boundary
end @ wetland boundary pond
sampled reach throughout by visual inspection of substrate

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT 3-OR	Project No.: 071-522.0001
Sampling Location: UNT 3-OR (1)	Date/Time: 3-7-08 10:30am
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT 5 Camera: D
Current Weather Conditions: 35°F, Overcast, Dry	Weather Conditions Past 48 Hours: 40°F, Partly Cloudy, Dry

Stream Hydrology:

Estimated Flow =	25	gpm
Wetted Width =	2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	4
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U		✓			
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U			✓		
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U	✓				
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S	✓				
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U	✓				
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U	✓				
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S	✓				
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT 3-OR	Start	5	6

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ property boundary immediately upstream of culvert
- Sample collected w/ D-Frame throughout reach
- End @ property boundary

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT3-OR	Project No.: 071-522.0001
Sampling Location: UNT3-OR	Date/Time: 3-7-08 11:15am
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°F, Cloudy, light rain	Weather Conditions Past 48 Hours: 40°F, Partly Cloudy, Dry

Stream Hydrology:

Estimated Flow =	2	gpm *
Wetted Width =	<1	ft
Water Depth =	<1	in

* Flow is limited to short reaches w/ dry channel in between. 2" of rain fell 72 hrs ago

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	✓ partial
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT3-OR	Start	9	10

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ Whyte property line
- End @ McCullic property line
- Stream extends upslope 75' from property line

STREAM DETERMINATION FIELD DATA FORM

Stream: UNT3-OR-A	Project No.: 071-522.0001
Sampling Location: UNT3-OR-A	Date/Time: 3-7-08 9:45am
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°F, Overcast, Dry	Weather Conditions Past 48 Hours: 40°F, Partly Cloudy, Dry

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
UNT3-OR-A	Start	3	4

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ defined channel near fence line
- No channel through pasture (isolated)
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704	Project No.: 071-522.0001
Sampling Location: 32704 (1)	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°, cloudy	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	40-45 gpm
Wetted Width =	3-5 ft
Water Depth =	3-6 in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	4-6
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U		✓			
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U	✓				
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S		✓			
Leuctridae	U, S	✓				
Nemouridae	U, S					
Peltoperlidae	S		✓			
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae (2)	U		✓			
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S		✓			
Limnephilidae	U, S		✓			
Philopotamidae	B, U					
Rhyacophilidae	U, S	✓				
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U			✓		
Tipulidae (3)	B, U, S		✓			
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U	✓				
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S	✓				
Sialidae	U, S	✓				
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S		✓			
Decapoda (crayfish)	U	✓				
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Eurylophella		✓				
unknown coleoptera larvae		✓				
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling reach	32704 (1)	3	4

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

start assessment @ Gillispie / Consol property line
- sampled w/ D-Frame

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704	Project No.: 071-522.0001
Sampling Location: 32704 (2)	Date/Time: 3-10-08 2:00pm
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT7 Camera: D
Current Weather Conditions: 40°F, Cloudy	Weather Conditions Past 48 Hours: 30°F, light snow

Stream Hydrology:

Estimated Flow =	30	gpm
Wetted Width =	2-4	ft
Water Depth =	1-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	4-6
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U		✓			
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U		✓			
Chloroperlidae	U, S	✓				
Leuctridae	U, S					
Nemouridae	U, S	✓				
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U			✓		
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S	✓				
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S	✓				
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U				✓	
Tipulidae	B, U, S	✓				
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U	✓				
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Stratiomyidae		✓				
Vertebrates						
larval salamander		✓				

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32704 (2)	32704 (2)	5	6

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Sample collected ≈ 25' upstream of confluence w/ 32704F using D-frame
- Break made @ confluence w/ 32704F

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704	Project No.: 071-522.0001
Sampling Location: 32704	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPs GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 40°, sunny	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	<1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	
Debris-filled	✓ (partial)
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
—	—	—	—

Notes (Include narrative description of sampling location):

var/upl break made @ change in flow and substrate @ Trib 32704I

-end of reach @ loss of flow and defined channel

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704A	Project No.: 071-522.0001
Sampling Location: 32704A(1)	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°, light snow	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	25-30	gpm
Wetted Width =	2-3	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S	✓				
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S		✓			
Nemouridae	U, S		✓			
Peltoperlidae	S			✓		
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae (2)	U		✓			
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S	✓				
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U		✓			
Simuliidae	M, U					
Tipulidae	B, U, S	✓				
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U	✓				
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs ★	
		Downstream	Upstream
start	32704A-int	start 13	14

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

start assessment @ Gillispie/Consol property line
sampled w/ D-Frame
★ photos taken on 3-7-08, Camera D
end assessment @ wetland boundary.

STREAM DETERMINATION FIELD DATA FORM

Stream: 327048	Project No.: 071-522.0001
Sampling Location: 327048 (1)	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°, light snow	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	35-40	gpm
Wetted Width =	1-2	ft
Water Depth =	2-4	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	✓
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U			✓		
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptagenidae	B, U					
Isonychidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capnidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S	✓				
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U		✓			
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S	✓				
Limnephilidae	U, S		✓			
Philopotamidae	B, U					
Rhyacophilidae	U, S		✓			
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U	✓				
Simuliidae	M, U			✓		
Tipulidae	B, U, S	✓				
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S	✓				
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U	✓				
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sampling Reach	327048 (1)	1	2

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

Start assessment @ confluence with 32704
sampled reach with D-Frame
end assessment @ Gillispie/Consol property line

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704B-1	Project No.: 071-522.0001
Sampling Location: 32704B-1 (1)	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°, light snow	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	2-3	gpm
Wetted Width =	1	ft
Water Depth =	2-3	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S	✓				
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U			✓		
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S		✓			
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U	✓				
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
start	32704B-1-var start	23	24

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

start assessment @ confluence with 32704B
sampled throughout reach by visual inspection of substrate
end assessment @ loss of flow and defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704C	Project No.: 071-522.0001
Sampling Location: 32704C	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPs GPS Unit: GeoXT5 Camera: Δ
Current Weather Conditions: 35°, cloudy	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	— gpm
Wetted Width =	— ft
Water Depth =	— in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓ (partial)
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
—	—	—	—

Notes (include narrative description of sampling location):

~ 15' of no channel, then start of assessment

end @ loss of bed and banks

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	*Upland

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704 D	Project No.: 071-522.0001
Sampling Location: 32704 D	Date/Time: 3-10-08 11:30am
Coordinates:	Investigator(s): MLS, LCFS GPS Unit: GeoXT 5 Camera: D
Current Weather Conditions: 35°F, Cloudy	Weather Conditions Past 48 Hours: 30°F, light snow

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32704D	Start	33	34

USACE Classification:	Perennial	Intermittent	Ephemeral
PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (include narrative description of sampling location):

- Start @ confluence w/ 32704
- End @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704E	Project No.: 071-522.0001
Sampling Location: 32704E	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°, cloudy	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	<1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
—	—	—	—

USACE Classification: Perennial Intermittent (Ephemeral)

PADEP Classification Biologically Diverse Biologically Variable (Upland)

Notes (Include narrative description of sampling location):

start @ begining of bed/banks
no channel (~ 20') between start
and 32704
end @ wetland boundary

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704F	Project No.: 071-522.0001
Sampling Location: 32704F(1)	Date/Time: 3-10-08 11:45am
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°F, Cloudy	Weather Conditions Past 48 Hours: 30°F, light snow

Stream Hydrology:

Estimated Flow =	10	gpm
Wetted Width =	1-2	ft
Water Depth =	1-2	in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2-3
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble	✓	Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U	✓				
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S		✓			
Peltoperlidae	S		✓			
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U	✓				
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S	✓				
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S		✓			
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Dixiidae		✓				
Unknown Coleoptera Larva		✓				
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Start 32705F(1)		39	40

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (include narrative description of sampling location):

- Sample Collected throughout reach by visual inspection of substrates
- Break made @ spring source

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704 F	Project No.: 071-522.0001
Sampling Location: 32704F	Date/Time: 3-10-08 11:55am
Coordinates:	Investigator(s): MLS, LCB GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 35°F, Cloudy	Weather Conditions Past 48 Hours: 30°F, light snow

Stream Hydrology:

Estimated Flow =	N/A	gpm
Wetted Width =	N/A	ft
Water Depth =	N/A	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1
Bed & Banks	
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32704 F	break	41	42

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- END @ loss of defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704G	Project No.: 071-522.0001
Sampling Location: 32704G	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 40°, sunny	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	<1	gpm
Wetted Width =	<1	ft
Water Depth =	<1	in

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	✓ (partial)
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
—	—	—	—

Notes (Include narrative description of sampling location):

-start assessment @ confluence with 32704

-end of assessment @ loss of bed/bank

USACE Classification:	Perennial	Intermittent	(Ephemeral)
PADEP Classification	Biologically Diverse	Biologically Variable	(Upland)

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704 H	Project No.: 071-522.0001
Sampling Location: 32704 H	Date/Time: 3-10-08
Coordinates:	Investigator(s): MLS, LCPs GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 40°, sunny	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	<1 * gpm
Wetted Width =	<1 * ft
Water Depth =	<1 * in

* <1 gpm
only flow in small stretches

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	2
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	✓ (partial)
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
—	—	—	—

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- start assessment @ confluence w/ 32704
- end of assessment @ bss of bed/banks

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704 I	Project No.: 071-522.0001
Sampling Location: 32704 I	Date/Time: 3-10-08 1:30pm
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT5 Camera: D
Current Weather Conditions: 40°, sunny	Weather Conditions Past 48 Hours: 30°, light snow

Stream Hydrology:

Estimated Flow =	3-5 gpm
Wetted Width =	1 ft
Water Depth =	1 in

Hydrology Source(s) (check all that apply):

Spring	✓
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1-2
Bed & Banks	✓
Alluvial Channel	✓
Eroded Channel	
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	
Gravel	✓	Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S			✓		
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U			✓		
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
Sample reach	32704I-ind.start	57	58

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- start assessment @ confluence with 32704
- sampled throughout assessment reach by visual inspection of substrate
- end @ loss of flow and defined channel

STREAM DETERMINATION FIELD DATA FORM

Stream: 32704 J	Project No.: 071-522.0001
Sampling Location: 32704J	Date/Time: 3-10-08 2:30pm
Coordinates:	Investigator(s): MLS, LCPS GPS Unit: GeoXT 5 Camera: D
Current Weather Conditions: 40°F, Cloudy	Weather Conditions Past 48 Hours: 30°F, light snow

Stream Hydrology:

Estimated Flow =	<1	gpm *
Wetted Width =	<1	ft
Water Depth =	<1	in

* Likely attributable to snow melt & ground thaw

Hydrology Source(s) (check all that apply):

Spring	
Seep	
Run-off	✓
Pond	

Channel Conditions:

Active Width (ft)	1
Bed & Banks	✓
Alluvial Channel	
Eroded Channel	✓
Debris-filled	
Terrestrial Vegetation	

Substrate Type(s) (check all that apply):

Bedrock		Sand	✓
Boulder		Silt	✓
Cobble		Clay	✓
Gravel		Artificial	

Benthic Macroinvertebrates (M-Multivoltine, B-Bivoltine, U-Univoltine, S-Semivoltine):

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Ephemeroptera (mayflies)						
Ameletidae	U					
Baetidae	M, B, U					
Caenidae	M, B, U					
Ephemerellidae	U, S					
Heptageniidae	B, U					
Isonychiidae	B					
Leptophlebiidae	U, S					
Plecoptera (stoneflies)						
Capniidae	U					
Chloroperlidae	U, S					
Leuctridae	U, S					
Nemouridae	U, S					
Peltoperlidae	S					
Perlidae	U, S					
Taeniopterygidae	U					
Perlodidae	U					
Tricoptera (caddisflies)						
Glossosomatidae	B, U					
Hydropsychidae	B, U, S					
Limnephilidae	U, S					
Philopotamidae	B, U					
Rhyacophilidae	U, S					
Uenoidae	U, S					
Diptera (true flies)						
Chironomidae	M, B, U					
Simuliidae	M, U					
Tipulidae	B, U, S					
Tabanidae	U					

Taxon	Life History	Rare (0-3)	Present (4-10)	Common (11-24)	Abundant (25-99)	Very Abundant (100+)
Coleoptera (aquatic beetles)						
Dytiscidae	B, U					
Elmidae	U, S					
Psephenidae	U, S					
Megaloptera (alderflies, dobsonflies)						
Corydalidae	U, S					
Sialidae	U, S					
Hemiptera (Water Bugs)	B, U					
Zygoptera (damselflies)	U, S					
Anisoptera (dragonflies)	B, U					
Amphipoda (scuds)	M					
Isopoda (aquatic sowbugs)	M					
Hirudinea (leeches)	U					
Platyhelminthes (flatworms)	M, B, U, S					
Oligochaeta (segmented worms)	B, U, S					
Decapoda (crayfish)	U					
Gastropoda (snails)	U, S					
Bivalvia (clams, mussels)						
Sphaeriidae	M, B, U					
Unionidae	U					
NO BENTHOS						
Vertebrates						

Sampling Location	GPS Point	Photographs	
		Downstream	Upstream
32704J	start	59	60

USACE Classification:	Perennial	Intermittent	Ephemeral

PADEP Classification	Biologically Diverse	Biologically Variable	Upland

Notes (Include narrative description of sampling location):

- Start @ confluence w/ 32704
- End @ loss of defined channel

APPENDIX D

STREAM PHOTOGRAPHS

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 1: Tributary 32705 (Perennial)

Photograph 2: Tributary 32705 (Intermittent)

Photograph 3: Tributary 32705 (Ephemeral)

Photograph 4: Tributary 32705A (Perennial)

Photograph 5: Tributary 32705B (Intermittent)

Photograph 6: Tributary 32705C (Intermittent)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 7: Tributary 32705C-1 (Ephemeral)

Photograph 8: Tributary 32705C-2 (Ephemeral)

Photograph 9: Tributary 32705C-3 (Ephemeral)

Photograph 10: Tributary 32705C-4 (Ephemeral)

Photograph 11: Tributary 32705D (Ephemeral)

Photograph 12: Tributary 32705E (Intermittent)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 13: Tributary 32705F (Intermittent)

Photograph 14: Tributary 32705F (Ephemeral)

Photograph 15: Tributary 32705F-1 (Ephemeral)

Photograph 16: Tributary 32705F-2 (Ephemeral)

Photograph 17: Tributary 32705F-3 (Ephemeral)

Photograph 18: Tributary 32705F-4 (Intermittent)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 19: Tributary 32705F-5 (Ephemeral)

Photograph 20: Tributary 32705F-6 (Intermittent)

Photograph 21: Tributary 32705F-7 (Intermittent)

Photograph 22: Tributary 32705F-7 (Ephemeral)

Photograph 23: Tributary 32705G (Ephemeral)

Photograph 24: Tributary 32705H (Intermittent)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 25: Tributary 32705H-1 (Ephemeral)

Photograph 26: Tributary 32705H-2 (Ephemeral)

Photograph 27: Tributary 32705I (Intermittent)

Photograph 28: Tributary 32705J (Intermittent)

Photograph 29: Tributary 32705K (Intermittent)

Photograph 30: Tributary 32705L (Intermittent)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 31: Tributary 32705L (Ephemeral)

Photograph 32: Tributary 32705M (Intermittent)

Photograph 33: Tributary 32705N (Intermittent)

Photograph 34: Tributary 32705O (Intermittent)

Photograph 35: Tributary 32705P (Intermittent)

Photograph 36: Tributary 32705Q (Ephemeral)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 37: Tributary 32705R (Ephemeral)

Photograph 38: Tributary 32706 (Intermittent)

Photograph 39: Tributary 32706A (Intermittent)

Photograph 40: Tributary 32706B (Ephemeral)

Photograph 41: Tributary 32706B (Intermittent)

Photograph 42: Tributary 32706C (Intermittent)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 43: Tributary 32706D (Ephemeral)

Photograph 44: Tributary 32706E (Intermittent)

Photograph 45: Tributary 32706E-1 (Intermittent)

Photograph 46: Tributary 32706E-1 (Ephemeral)

Photograph 47: Tributary 32706E-2 (Intermittent)

Photograph 48: Tributary 32706E-2 (Ephemeral)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 49: Tributary 32706E-3 (Intermittent)

Photograph 50: Tributary 32706E-4 (Ephemeral)

Photograph 51: Tributary 32706E-5 (Ephemeral)

Photograph 52: Tributary 32706F (Ephemeral)

Photograph 53: Tributary 32706G (Intermittent)

Photograph 54: Tributary 32706H (Ephemeral)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 55: Tributary 32706I (Ephemeral)

Photograph 56: Tributary 32706J (Ephemeral)

Photograph 57: Tributary UNT-OR (Perennial)

Photograph 58: Tributary UNT-OR (Intermittent)

Photograph 59: Tributary UNT-OR (Ephemeral)

Photograph 60: Tributary UNT-OR A (Intermittent)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 61: Tributary UNT-OR B (Intermittent)

Photograph 62: Tributary UNT-OR C (Intermittent)

Photograph 63: Tributary UNT-OR D (Intermittent)

Photograph 64: Tributary UNT-OR D (Ephemeral)

Photograph 65: Tributary UNT-OR E (Intermittent)

Photograph 66: Tributary UNT-OR F (Ephemeral)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 67: Tributary UNT-OR G (Ephemeral)

Photograph 68: Tributary UNT-OR H (Ephemeral)

Photograph 69: Tributary UNT-OR I (Ephemeral)

Photograph 70: Tributary UNT-OR J (Intermittent)

Photograph 71: Tributary UNT-OR K (Ephemeral)

Photograph 72: Tributary UNT-OR L (Ephemeral)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 73: Tributary UNT-OR M (Ephemeral)

Photograph 74: Tributary UNT-OR N (Intermittent)

Photograph 75: Tributary UNT-OR O (Ephemeral)

Photograph 76: Tributary UNT-OR P (Ephemeral)

Photograph 77: Tributary UNT-OR Q (Ephemeral)

Photograph 78: Tributary UNT2-OR (Intermittent)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 79: Tributary UNT3-OR (Intermittent)

Photograph 80: Tributary UNT3-OR (Ephemeral)

Photograph 81: Tributary UNT3-OR-A (Ephemeral)

Photograph 82: Tributary 32704 (Perennial)

Photograph 83: Tributary 32704 (Intermittent)

Photograph 84: Tributary 32704 (Ephemeral)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6

Photograph 84: Tributary 32704A (Intermittent)

Photograph 85: Tributary 32704B (Intermittent)

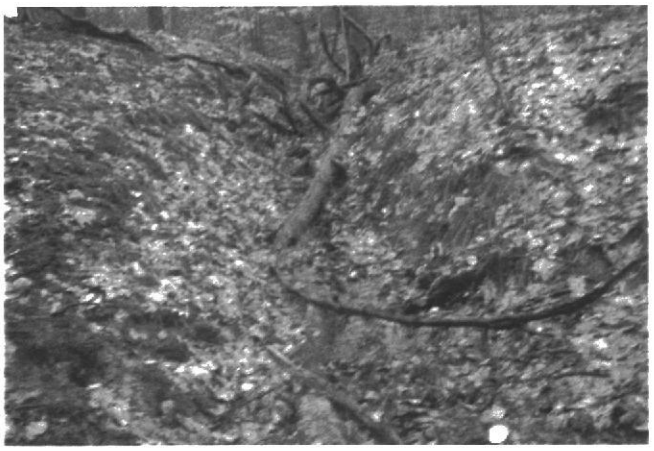
Photograph 86: Tributary 32704B-1 (Intermittent)

Photograph 87: Tributary 32704C (Ephemeral)

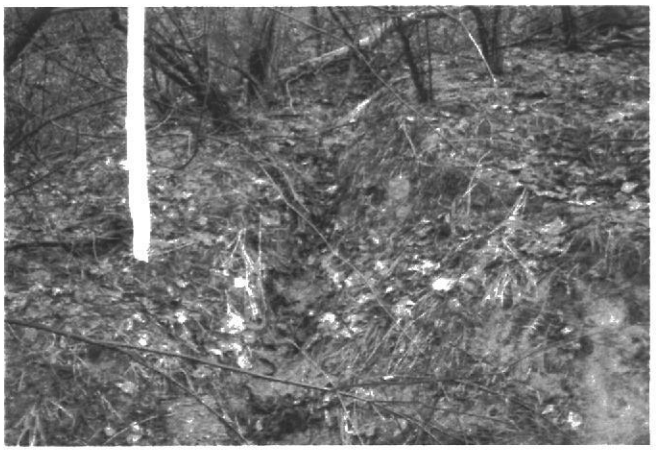
Photograph 88: Tributary 32704D (Ephemeral)

Photograph 89: Tributary 32704E (Ephemeral)

STREAM PHOTOGRAPHS
BAILEY MINE CRDA NO. 5 AND 6



Photograph 90: Tributary 32704F (Intermittent)



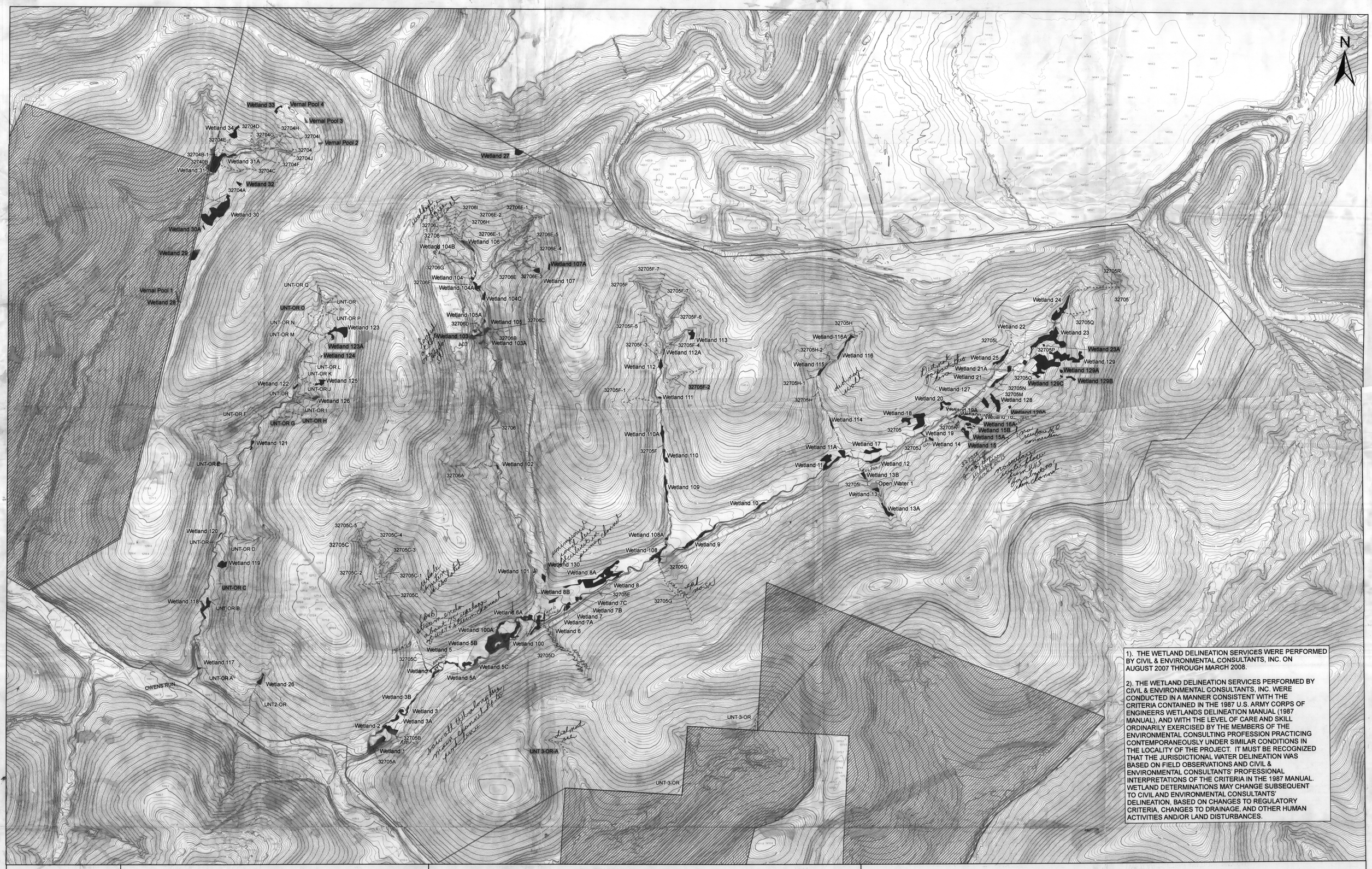
Photograph 91: Tributary 32704F (Ephemeral)

Photograph 92: Tributary 32704G (Ephemeral)

Photograph 93: Tributary 32704H (Ephemeral)

Photograph 94: Tributary 32704I (Intermittent)

Photograph 95: Tributary 32704J (Ephemeral)



1). THE WETLAND DELINEATION SERVICES WERE PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. ON AUGUST 2007 THROUGH MARCH 2008.

2). THE WETLAND DELINEATION SERVICES PERFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. WERE CONDUCTED IN A MANNER CONSISTENT WITH THE CRITERIA CONTAINED IN THE 1987 U.S. ARMY CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987 MANUAL), AND WITH THE LEVEL OF CARE AND SKILL ORDINARILY EXERCISED BY THE MEMBERS OF THE ENVIRONMENTAL CONSULTING PROFESSION PRACTICING CONTEMPORANEOUSLY UNDER SIMILAR CONDITIONS IN THE LOCALITY OF THE PROJECT. IT MUST BE RECOGNIZED THAT THE JURISDICTIONAL WATER DELINEATION WAS BASED ON FIELD OBSERVATIONS AND CIVIL & ENVIRONMENTAL CONSULTANTS' PROFESSIONAL INTERPRETATIONS OF THE CRITERIA IN THE 1987 MANUAL. WETLAND DETERMINATIONS MAY CHANGE SUBSEQUENT TO CIVIL AND ENVIRONMENTAL CONSULTANTS' DELINEATION, BASED ON CHANGES TO REGULATORY CRITERIA, CHANGES TO DRAINAGE, AND OTHER HUMAN ACTIVITIES AND/OR LAND DISTURBANCES.

TOPOGRAPHIC CONTOURS PROVIDED BY CONSOL PENNSYLVANIA COAL COMPANY, LLC 2007

DWN. BY:	CHK. BY:
BMF	MRH

1 inch equals 225 feet

DATE: 3/14/2008

0 225 450 675 900 Feet

Legend

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Surface Water Connection
- Wetland
- Open Water
- Vernal Pool
- Off-Site Wetland
- No Access
- Project Boundary
- Hydrologically Isolated Resource

ISSUED FOR: CONSOL ENERGY

ISSUED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 Baldwin Road
Pittsburgh, PA 15205-9702
1-800-365-2324
Columbus, OH * Cincinnati, OH * Indianapolis, IN * Nashville, TN * Chicago, IL * St. Louis, MO * Export, PA * Detriot, MI

WETLAND AND STREAM DELINEATION MAP
BAILEY COAL REFUSE DISPOSAL AREAS NO. 5 AND 6
CONSOL PENNSYLVANIA COAL COMPANY, LLC
GREENE COUNTY, PENNSYLVANIA

PROJECT NO.: 071-522.001

FIGURE: 4

\\svr-pitt\gis\Projects\2007\071522\maps\final\071522_delination_3_14_08.mxd - 4/9/2008 @ 11:15:30 AM