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April 14, 2016

Town of Mansfield
Inland Wetlands Agency
14 Park Place
Mansfield, CT 06226-2217

Re: WETLANDS ASSESSMENT-SUPPLEMENTAL: VERNAL POOL INVESTIGATION
Lodges at Storrs, Hunting Lodge Road, Mansfield, CT

REMA Job No.: 15-1860-MNS18

Dear Agency Members:

REMA ECOLOGICAL SERVICES, LLC (REMA) is providing herein the revised results of a breeding season, vernal pool investigation conducted at Wetland A, at the above-referenced site on April 13th, 2016. Attached to this report please find a revised Vernal Pool Characterization Form (Draft-USACE), and several annotated photographs.

Do date, a total of seventy-eight (78) wood frog, and five (5) spotted salamander egg masses have been observed. The pool maximum depth of inundation had gone up by 2-3 inches between the two site visits to seventeen inches (17). The wood frog egg masses observed in March had all hatched.

Respectfully submitted,

REMA ECOLOGICAL SERVICES, LLC

Sigrun N. Gadwa, MS, PWS
Professional Wetland Scientist
Registered Soil Scientist

George T. Logan, MS, PWS, CE
Professional Wetland Scientist
Registered Soil Scientist, Certified Senior Ecologist

VIA E-MAIL

Attachments: Vernal Pool Characterization Form (revised); Photos 1 to 4

US Army Corps of Engineers - New England District

DRAFT Vernal Pool Characterization Form

Project File # 15-1860-MNS1B Project Name Lodges at Storrs, a proposed Residential/Student Community Pool ID WA-YP
Observer George T. Logan, MS, PWS, CSE Phone or E-mail rema8@aol.com
Landowner/Applicant Ponde Place, LLC/Storrs Lodges, LLC Phone or E-mail _____
Address Hunting Lodge Road City Manofield State CT Zip _____
Location of vernal pool: City/State Manofield, CT
Survey date(s) 3-24-16, 4-13-16
Longitude/Latitude (in decimal degrees) 41.8086 -72.2755

A. VERNAL POOL CHARACTERISTICS (fill in all information known):

1. Landscape setting (check all that apply):

- Upland depression (4 pts; if this is also in a floodplain, use 2 pts) Pool part of wildlife corridor (4 pts)
 Pool part of a pool complex (within 1000 feet of one or more other vernal pools) (NA)
 Pool within larger wetland system (4 pts; if this is also in a floodplain, use 2 pts) Other: _____ (variable pts)

2. Vernal pool condition:

Describe any recent modifications to the pool and associated landscape: Pool within forested swamp was created when fill for a road (later abandoned) was placed in wetland between 1965 and 1970, hydrologically isolating its western most lobe, allowing water to pond.

3. Parent material:

- Glacial fluvial ("outwash") Loose till Peat
 Dense till Alluvium Coastal marine sediments

4. Aquatic resource type that best applies to this pool (choose dominant):

- Forested wetland (4 pts) Herbaceous wetland (4 pts) Floodplain (overflow/oxbow) (3 pts)
 Shrub wetland (4 pts) Open water (2 pts) Other: _____ (variable points)
 Peatland (acidic fen or bog) (4 pts) Intermittent stream reach (2 pts)

5. Pool canopy cover (%): ~85

6. Predominant substrate:

- Mineral soil
 Organic matter (peat/muck) Depth _____ Sampling location (e.g., deepest zone, edge, etc.) _____

7. Pool size:

- a. Approximate dimensions of pool (at maximum capacity; include units): Length _____ Width _____
Area: 9,280
b. Maximum depth at deepest point at time of survey (include units): 17 inches

8. Hydrology:

- a. Estimated hydroperiod (unless actual, observed hydroperiod value(s) is(are) known, use the presence of these example indicator species to best predict the expected hydroperiod of the pool):
 Dries between early March and early July (e.g., *Thelypteris palustris*, *Carex stricta*, *Impatiens capensis*, *Ilex verticillata*) (6 pts)
 Dries between early July and early September (e.g., *Sagittaria latifolia*, *Scirpus cyperinus*, *Dulichium arund.*, *Cephalanthus occ.*) (8 pts)
 Dries between early September and early November (e.g., *Eleocharis palustris*, *Glyceria cana.*, *Utricularia spp.*, *Decodon vert.*) (8 pts)
 Dries between early November and late December, or intermittently exposed (e.g., *Nuphar spp.*, *Potamogeton spp.*) (2 pts)

b. Inlet/outlet (pick one):

- No inlet/outlet (8 pts) Permanent inlet or outlet (channel with well-defined banks and permanent flow) (2 pts)
 Temporary inlet/outlet (6 pts)

9. Water quality:

- Clear High turbidity High algae content Tannic

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TOTAL for Pool Characteristics (out of 28 max.)

B. VERNAL POOL ENVELOPE (100 ft) AND CRITICAL HABITAT AREA (100-750 ft) CHARACTERISTICS (fill in all information known):

1. Landuse type and approximate percentage within the 100-ft vernal pool envelope:

- Forested 99.0 % (16 pts) Open (e.g., meadow, agriculture, golf course) _____ % (4 pts)
 Shrub _____ % (10 pts) Developed 1.0 % (0 pts)

2. Landuse type and approximate percentage within the 100 - 750-ft vernal pool critical terrestrial habitat:

- Forested 93.8 % (16 pts) Open (e.g., agriculture, golf course) _____ % (4 pts)
 Shrub _____ % (10 pts) Developed 6.2 % (0 pts)

Are there one or more barriers to vernal pool fauna movement within the envelope and/or critical terrestrial habitat? If so, check here and see directions for explanation of how to incorporate this information.

Based on: Field estimate GIS Aerial photo estimate

31 **TOTAL for Pool Envelope and Critical Terrestrial Habitat Area (out of 32 max.)**

C. SPECIES PRESENT IN VERNAL POOL

INDICATOR SPECIES	DATE	EGG MASSES (#)	TADPOLES/LARVAE
Wood Frog (<i>Lithobates sylvaticus</i>)	by 4/13/16	78	
Spotted Salamander (<i>Ambystoma maculatum</i>)	4/13/16	5	
Blue-spotted Salamander (<i>Ambystoma laterale</i>)			
Jefferson's Salamander (<i>Ambystoma jeffersonianum</i>)			
Marbled Salamander (<i>Ambystoma opacum</i>)			
Fairy Shrimp (<i>Eubranchipus</i> spp.)		PRESENT/ABSENT	ABUNDANCE:
OTHER SPECIES	DATE	PRESENCE/ABSENCE	FEW/Common/MANY
Facultative Species (e.g., Spring Peeper (<i>Pseudacris crucifer</i>), Gray Tree Frog (<i>Hyla versicolor</i>), Caddisflies (Limnephilidae, Phryganeidae), American Toad (<i>Anaxyrus americanus</i>), Eastern Spadefoot Toad (<i>Scaphiopus holbrookii</i>), Fowler's Toad (<i>Anaxyrus fowleri</i>), Fingernail Clams (Sphaeriidae, Pisidiidae))(list):	3/24/16	Spring Peeper	FEW

Rare Species (list): _____			

Predator Species (e.g., Bullfrog/Green frog tadpoles, Fish) (list): _____			

Other species (e.g., Ducks, Turtles, etc.)(list): _____			

Presence of Indicator Species Yes No

SUMMARY:

26 **TOTAL for Pool Characteristics** 31 **TOTAL for Pool Envelope and Critical Terrestrial Habitat Area**

Other comments (append photographs, additional notes, sketch of pool and surrounding landscape):

On April 20, 2007, 53 wood frog, and four spotted salamander egg masses were observed in the pool by Edward M. Pawlak, MS, PWS



Photo 1: Wetland A (with embedded vernal pool habitat); facing northerly



Photo 2: Wetland A; vernal pool; facing southerly



Photo 3: Wetland A; one of five spotted salamander egg masses deposited since our March vernal pool survey



Photo 4: Wetland A; one of an additional 11 wood frog egg masses deposited since our March vernal pool survey