# Section 11

## Soils

# 11. Soils

## A. Soil Survey Map and Report

The soil survey is from a Class B-High Intensity Soil Survey published by Mark Hampton Associates, Inc.

The site is comprised of primarily Lamoine and Buxton soils which are classified as types C and D hydrologic soils, respectively. The areas where Lamoine has been identified, have been classified as somewhat poorly drained. The areas where Buxton has been identified, have been classified as moderately well drained.

Small parts of the site are comprised of Podunk soils which is characterized by moderately well drained soils. Permeability is moderately rapid to rapid.

Lastly, eight wetlands with Scantic soils exist on site which are poorly drained.

A copy of the Soil Narrative Report, provided by Mark Hampton Associates, Inc, on May 20, 2017, is included as part of this section. Test pit locations are depicted on the Predevelopment Watershed Map attached to the Stormwater Report.

## B. Soil Survey Intensity Level by Development Type

The project consists of redeveloping a 55.3-acre lot into a traditional single-family housing neighborhood and townhouse development. The subject site is mostly meadowland. Runoff from the proposed surfaces will be treated using tree filters and retention ponds. Mark Hampton, a certified soil scientist and licensed sit evaluator, performed test pit evaluations at locations specified by a registered land surveyor.

## C. Geotechnical Investigation

A geotechnical investigation will be completed if deemed necessary for the detention basin construction.

## D. Hydric Soils Mapping

Mark Hampton Associates, Inc. identified all wetland areas within the subject parcel area. The wetland delineation is incorporated in the plans. Mark Hampton also confirmed that there are no vernal pools located within the property.

The existing wetlands are shown on the Existing Conditions Plan and the Civil Plan set.

A copy of the Wetland Report and Vernal Pool Assessment, provided by Mark Hampton Associates, Inc. dated November 21, 2016, May 20, 2017, and June 21, 2017 respectively, are as attached.

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4702
November 21, 2016

Mr. Mike Barton
Diversified LLC
5 Stone Pony Circle
Saco, ME 04072

Re: Wetland Delineation, 45+ acre parcel Westbrook Street Portland, ME

Dear Mike,

Today, I completed a wetland delineation on an 45+ acre parcel located on Westbrook Street Portland, ME. The wetland delineation was completed in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Northcentral and Northeast Regions dated January 2012. These manuals require the presence of three parameters for a wetland to be present, wetland hydrology, hydrophytic vegetation, and hydric soils.

The wetlands I found on the parcel were flagged with yellow flagging. The flagging was labeled in an alphanumeric sequence. The wetland flags were located by gps equipment capable of locating a point to within three feet. The wetland data has been forwarded to Acorn Engineering. The wetlands found onsite are wet meadow wetlands. The wetlands on the parcel are related to drainage moving across the site from north to south. The wetlands on the parcel located adjacent to the Stroudwater River will meet the definition of wetlands of special significance as defined by Maine Department of Environmental Protection.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263

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*Quality services that meet your deadline*

4 of 2

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Camelot Village City/County: Portland Cumberland Sampling Date: 5/10/17

Applicant/Owner: Camelot Holdings LLC State: ME Sampling Point: A-1

Investigator(s): M. Hampton Section, Township, Range:

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex

Slope (%): 6 Lat: 43-39-23.6 N Long: 70-19-46 W Datum: NAD 27

Soil Map Unit Name: Buxton silt loam NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ___ | No X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ | No X | |
| Wetland Hydrology Present? | Yes ___ | No X | If yes, optional Wetland Site ID: |

Remarks: (Explain alternative procedures here or in a separate report.)

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No X | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): ___ |

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION – Use scientific names of plants.

Sampling Point: A1

**Tree Stratum** (Plot size: 30)

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Quercus rubra | 20 | | FACU |
| 2. Pinus strobus | 30 | X | FACU |
| 3. Malus domestica | 20 | | Not |
| 4. Betula papyrifera | 10 | | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 70 | = Total Cover | |

**Sapling/Shrub Stratum** (Plot size: 15)

| | | | |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | = Total Cover | |

**Herb Stratum** (Plot size: 5)

| | | | |
|---|---|---|---|
| 1. Pteridium aquilinum | 20 | | FACU |
| 2. Trientalis borealis | 20 | | FAC |
| 3. Maianthemum canadense | 20 | | FAC |
| 4. various grasses | 40 | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | = Total Cover | |

**Woody Vine Stratum** (Plot size: 30)

| | | | |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = |
| FACW species | 0 | x 2 = |
| FAC species | 2 | x 3 = 6 |
| FACU species | 4 | x 4 = 16 |
| UPL species | | x 5 = |
| Column Totals: | 6 (A) | 22 (B) |

Prevalence Index = B/A = 3.7

**Hydrophytic Vegetation Indicators:**

- ___ Rapid Test for Hydrophytic Vegetation
- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ___ No X

## SOIL

4702

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Sampling Point: A1

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 3/3 | | | | | | Silt loam | |
| 4-16 | 10YR 4/4 | | 5Y 5/2 | | D | | Silt loam | |
| 16+ | 5Y 4/2 | | 5Y 2/2 | | C | M | Silty clay loam | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR R, MLRA 149B)
- ___ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ___ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ___ Loamy Mucky Mineral (F1) (LRR K, L)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ___ Coast Prairie Redox (A16) (LRR K, L, R)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ___ Dark Surface (S7) (LRR K, L)
- ___ Polyvalue Below Surface (S8) (LRR K, L)
- ___ Thin Dark Surface (S9) (LRR K, L)
- ___ Iron-Manganese Masses (F12) (LRR K, L, R)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ___ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Hardpan

Depth (inches): 16 inches

Remarks:

Hydric Soil Present? Yes ___ No X

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Camelot Village City/County: Portland Cumberland Sampling Date: 5/10/17

Applicant/Owner: Camelot Holdings LLC State: ME Sampling Point: A-2

Investigator(s): M. Hampton Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Flood plain Local relief (concave, convex, none): none

Slope (%): 2 Lat: 43-39-24.7N Long: 70-19-44W Datum: NAD27

Soil Map Unit Name: Scarborough NWI classification: P meadow

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ___ | Is the Sampled Area within a Wetland? Yes X No ___ |
| Hydric Soil Present? | Yes X | No ___ | |
| Wetland Hydrology Present? | Yes X | No ___ | If yes, optional Wetland Site ID: ___ |

Remarks: (Explain alternative procedures here or in a separate report.)

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes X | No ___ | Depth (inches): 6 inches |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): 0 inches |

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A-2

## VEGETATION – Use scientific names of plants.

Sampling Point: A-2

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Betula populifolia | | | FAC |
| 2. acer rubrum | | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 15) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Alnus rugosa | | | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Herb Stratum (Plot size: 5) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. onoclea sensibilis | | C | FACW |
| 2. various sedges/rushes | | | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | = Total Cover | | |

| Woody Vine Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| . | | | |
| . | | | |
| . | | | |
| | | | |
| | = Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | | x 1 = |
| FACW species | 3 | x 2 = 6 |
| FAC species | 2 | x 3 = 6 |
| FACU species | | x 4 = |
| UPL species | | x 5 = |
| Column Totals: | 5 (A) | 12 (B) |

Prevalence Index = B/A = 2.4

**Hydrophytic Vegetation Indicators:**

- ___ Rapid Test for Hydrophytic Vegetation
- X Dominance Test is >50%
- X Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

4-2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Sampling Point: A-2

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 4/2 | | 10YR 4/2 | | | | Silt loam | |
| 4-15 | 2.5Y 4/2 | | 2.5Y 6/2 | | RM | M | Silt loam | |
| 15+ | 5Y 5/2 | | 2.5Y 5/6 | | RM | M | Silty clay loam | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR R, MLRA 149B)
- ___ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ___ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ___ Loamy Mucky Mineral (F1) (LRR K, L)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ___ Coast Prairie Redox (A16) (LRR K, L, R)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ___ Dark Surface (S7) (LRR K, L)
- ___ Polyvalue Below Surface (S8) (LRR K, L)
- ___ Thin Dark Surface (S9) (LRR K, L)
- ___ Iron-Manganese Masses (F12) (LRR K, L, R)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ___ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: hard pan

Depth (inches): 4 inches

Remarks:

Hydric Soil Present? Yes X No ___

4762

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Camelot Village City/County: Portland Cumberland Sampling Date: 5/10/17

Applicant/Owner: Camelot Holdings LLC State: ME Sampling Point: B1

Investigator(s): M. Hampton Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex

Slope (%): 4 Lat: 43-39-31.4N Long: 70-19-38.8W Datum: NAD 27

Soil Map Unit Name: Lamoine NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes _____ | No ✓ | **Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓ |
| Hydric Soil Present? | Yes _____ | No ✓ | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes _____ | No ✓ | |

Remarks: (Explain alternative procedures here or in a separate report.)

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No _____ | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No _____ | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No _____ | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

4702

**VEGETATION** – Use scientific names of plants.

Sampling Point: B1

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. Taraxacum | | | FACU |
| 2. Trifolium Red | | | NR |
| 3. Phleum pratense | | X | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | = Total Cover | | |

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | | x 1 = |
| FACW species | | x 2 = |
| FAC species | | x 3 = |
| FACU species | 2 | x 4 = 8 |
| UPL species | | x 5 = |
| Column Totals: | 2 (A) | 8 (B) |

Prevalence Index = B/A = 4

**Hydrophytic Vegetation Indicators:**

- ___ Rapid Test for Hydrophytic Vegetation
- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: B1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/3 | | | | | | Silt loam | |
| 6-14 | 2.5Y 3/4 | | 10YR 5/6 | | | | Silt loam | |
| 14+ | 5Y 4/3 | | 5YR 5/1 | | D | M | Silty clay loam | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: hard pan

Depth (inches): 14 inches

**Hydric Soil Present?** Yes _____ No X

Remarks:

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Camelot Village City/County: Portland Cumberland Sampling Date: 5/2/17

Applicant/Owner: Camelot Holdings LLC State: ME Sampling Point: DP2

Investigator(s): M. Hamph Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave

Slope (%): 2 Lat: 43-39-31.4 N Long: 70-19-36.4 W Datum: NAD27

Soil Map Unit Name: Scantic NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** Yes X No _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes X | No _____ | Depth (inches): 2 inches |
| Water Table Present? | Yes X | No _____ | Depth (inches): surface |
| Saturation Present? (includes capillary fringe) | Yes X | No _____ | Depth (inches): surface |

**Wetland Hydrology Present?** Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: B-2

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 15) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Herb Stratum (Plot size: 5) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Iris versicolor | | | obl |
| 2. Onoclea sensibilis | | | FACW |
| 3. Osmunda cinnamomea | | | FACW |
| 4. various rushes/sedges | | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | = Total Cover | | |

| Woody Vine Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 1 | x 1 = 1 |
| FACW species | 3 | x 2 = 6 |
| FAC species | | x 3 = |
| FACU species | | x 4 = |
| UPL species | | x 5 = |
| Column Totals: | 4 (A) | 7 (B) |

Prevalence Index = B/A = 1.7

**Hydrophytic Vegetation Indicators:**

___ Rapid Test for Hydrophytic Vegetation

___ Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: B-2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 4/2 | | 10YR 4/2 | | | | Silt Loam | |
| 3-12 | 2.5Y 4/2 | | 2.5Y 4/2 | | RM | M | Silt Loam | |
| 12+ | 5Y 5/2 | | 2.5Y 5/6 | | RM | M | Silty Clay Loam | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: hard pan

Depth (inches): 4 inches

**Hydric Soil Present?** Yes X No ___

Remarks:

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4702
May 20, 2017

Mr. Mike Barton
Diversified LLC
5 Stone Pony Circle
Saco, ME 04072

Re: Wetland Delineation, 6+ acre parcel Westbrook Street Portland, ME

Dear Mike,

Today, I completed a wetland delineation on an 6+ acre parcel located on Westbrook Street Portland, ME. The wetland delineation was completed in accordance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Northcentral and Northeast Regions dated January 2012. These manuals require the presence of three parameters for a wetland to be present, wetland hydrology, hydrophytic vegetation, and hydric soils.

The wetlands I found on the parcel were flagged with yellow flagging. The flagging was labeled in an alphanumeric sequence. The wetland flags were located by gps equipment capable of locating a point to within three feet. The wetland data has been forwarded to Acorn Engineering. The wetlands found onsite are wet meadow wetlands and forested wetlands. The wetlands on the parcel are related to drainage moving across the site from north to south. The wetlands on the parcel located adjacent to the Stroudwater River will meet the definition of wetlands of special significance as defined by Maine Department of Environmental Protection.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

4762

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Camelot Village City/County: Portland Cumberland Sampling Date: 5/10/17

Applicant/Owner: Camelot Holings LLC State: ME Sampling Point: S1

Investigator(s): M. Hampton Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex

Slope (%): 4 Lat: 43-39-31.4N Long: 70-19-38.8W Datum: NAD 27

Soil Map Unit Name: Lamoine NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes _____ | No ✓ | **Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓ |
| Hydric Soil Present? | Yes _____ | No ✓ | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes _____ | No ✓ | |

Remarks: (Explain alternative procedures here or in a separate report.)

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No _____ | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No _____ | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No _____ | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** _____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

4702

**VEGETATION** – Use scientific names of plants.

Sampling Point: B1

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. Taraxacum | | | FACU |
| 2. Trifolium Red | | | NR |
| 3. Phleum pratense | | X | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | = Total Cover | | |

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | |
| FACW species | | x 2 = | |
| FAC species | | x 3 = | |
| FACU species | 2 | x 4 = | 8 |
| UPL species | | x 5 = | |
| Column Totals: | 2 (A) | | 8 (B) |

Prevalence Index = B/A = 4

**Hydrophytic Vegetation Indicators:**

___ Rapid Test for Hydrophytic Vegetation

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: B1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/3 | | | | | | Silt Loam | |
| 6-14 | 2.5Y 5/4 | | 10YR 5/6 | | | | Silt Loam | |
| 14+ | 5Y 4/3 | | 5YR 3/1 | | D | M | Silty Clay Loam | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: hard pan

Depth (inches): 14 inches

**Hydric Soil Present?** Yes ___ No X

Remarks:

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Camelot Village City/County: Portland Cumberland Sampling Date: 5/2/17

Applicant/Owner: Camelot Holdings LLC State: ME Sampling Point: B72

Investigator(s): M. Hampton Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave

Slope (%): 2 Lat: 43-39-31.4 N Long: 70-19-36.4 W Datum: NAD27

Soil Map Unit Name: Scantic NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? Yes X No _____ | | **Is the Sampled Area within a Wetland?** Yes X No _____ |
| Hydric Soil Present? Yes X No _____ | | |
| Wetland Hydrology Present? Yes X No _____ | | If yes, optional Wetland Site ID: _____ |

Remarks: (Explain alternative procedures here or in a separate report.)

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes X | No _____ | Depth (inches): 2 inches |
| Water Table Present? | Yes X | No _____ | Depth (inches): surface |
| Saturation Present? (includes capillary fringe) | Yes X | No _____ | Depth (inches): surface |

**Wetland Hydrology Present?** Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: B-2

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. Iris versicolor | | | obl |
| 2. Onoclea sensibilis | | | FACW |
| 3. Osmunda cinnamomea | | | FACW |
| 4. various rushes/sedges | | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | = Total Cover | | |

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | = Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 1 | x 1 = | 1 |
| FACW species | 3 | x 2 = | 6 |
| FAC species | | x 3 = | |
| FACU species | | x 4 = | |
| UPL species | | x 5 = | |
| Column Totals: | 4 (A) | | 7 (B) |

Prevalence Index = B/A = 1.7

**Hydrophytic Vegetation Indicators:**

- ___ Rapid Test for Hydrophytic Vegetation
- ___ Dominance Test is >50%
- X Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: B-2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 4/2 | | 10YR 4/2 | | | | Silt Loam | |
| 3-12 | 2.5Y 4/2 | | 2.5Y 4/2 | | RM | M | Silt Loam | |
| 12+ | 5Y 5/2 | | 2.5Y 5/6 | | RM | M | Silty Clay Loam | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: hard pan

Depth (inches): 4 inches

**Hydric Soil Present?** Yes X No ___

Remarks:

4702

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Camelot Village City/County: Portland Cumberland Sampling Date: 5/10/17

Applicant/Owner: Camelot Holdings LLC State: ME Sampling Point: A-1

Investigator(s): M. Hampton Section, Township, Range:

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex

Slope (%): 6 Lat: 43-39-23.6 N Long: 70-19-46 W Datum: NAD 27

Soil Map Unit Name: Buxton Silt Loam NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ___ | No X | Is the Sampled Area within a Wetland? Yes ___ No X |
| Hydric Soil Present? | Yes ___ | No X | |
| Wetland Hydrology Present? | Yes ___ | No X | If yes, optional Wetland Site ID: |

Remarks: (Explain alternative procedures here or in a separate report.)

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ | |
| Water Table Present? | Yes ___ | No X | Depth (inches): ___ | |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): ___ | Wetland Hydrology Present? Yes ___ No X |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

4202

## VEGETATION – Use scientific names of plants.

Sampling Point: A1

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Quercus rubra | 20 | | FACU |
| 2. Pinus strobus | 30 | X | FACU |
| 3. Malus domestica | 20 | | Not Listed |
| 4. Betula papyrifera | 10 | | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 70 | = Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | = Total Cover | |

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. Pteridium aquilinum | 20 | | FACU |
| 2. Trientalis borealis | 20 | | FAC |
| 3. Maianthemum canadensis | 20 | | FAC |
| 4. various grasses | 40 | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | = Total Cover | |

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. N/A | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | = Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 0 | x 1 = |
| FACW species | 0 | x 2 = |
| FAC species | 2 | x 3 = 6 |
| FACU species | 4 | x 4 = 16 |
| UPL species | | x 5 = |
| Column Totals: | 6 (A) | 22 (B) |

Prevalence Index = B/A = 3.7

**Hydrophytic Vegetation Indicators:**

- ___ Rapid Test for Hydrophytic Vegetation
- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

4702

**Profile Description:** (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Sampling Point: A1

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 3/3 | | | | | | silt loam | |
| 4-16 | 10YR 4/4 | | 5Y 5/2 | | D | | silt loam | |
| 16+ | 5Y 4/2 | | 5Y 2/2 | | C | M | silty clay loam | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR R, MLRA 149B)
- ___ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ___ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ___ Loamy Mucky Mineral (F1) (LRR K, L)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ___ Coast Prairie Redox (A16) (LRR K, L, R)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ___ Dark Surface (S7) (LRR K, L)
- ___ Polyvalue Below Surface (S8) (LRR K, L)
- ___ Thin Dark Surface (S9) (LRR K, L)
- ___ Iron-Manganese Masses (F12) (LRR K, L, R)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ___ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: hardpan

Depth (inches): 16 inches

Remarks:

Hydric Soil Present? Yes ___ No X

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Camelot Village
Applicant/Owner: Camelot Holdings LLC
City/County: Portland Cumberland
Sampling Date: 5/10/17
Investigator(s): M. Hampton
State: ME
Sampling Point: A-2
Landform (hillslope, terrace, etc.): Flood plain
Section, Township, Range:
Slope (%): 2
Lat: 43-39-24.7N
Local relief (concave, convex, none): none
Soil Map Unit Name: Scarborough
Long: 70-19-44W
Datum: NAD27
NWI classification: P meadow

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ___ | Is the Sampled Area within a Wetland? Yes X No ___ |
| Hydric Soil Present? | Yes X | No ___ | If yes, optional Wetland Site ID: ___ |
| Wetland Hydrology Present? | Yes X | No ___ | |

Remarks: (Explain alternative procedures here or in a separate report.)

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes X | No ___ | Depth (inches): 6 inches |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): 0 inches |

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

4-2

## VEGETATION – Use scientific names of plants.

Sampling Point: 4-2

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Betula populifolia | | | FAC |
| 2. acer rubrum | | | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Sapling/Shrub Stratum (Plot size: 15) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Alnus rugosa | | | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | = Total Cover | | |

| Herb Stratum (Plot size: 5) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. onoclea sensibilis | | C | FACW |
| 2. various sedges/rushes | | | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | = Total Cover | | |

| Woody Vine Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| . | | | |
| . | | | |
| . | | | |
| | | | |
| | = Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | | x 1 = |
| FACW species | 3 | x 2 = 6 |
| FAC species | 2 | x 3 = 6 |
| FACU species | | x 4 = |
| UPL species | | x 5 = |
| Column Totals: | 5 (A) | 12 (B) |

Prevalence Index = B/A = 2.4

**Hydrophytic Vegetation Indicators:**

- ___ Rapid Test for Hydrophytic Vegetation
- X Dominance Test is >50%
- X Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No ___

emarks: (Include photo numbers here or on a separate sheet.)

## SOIL

4702

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Sampling Point: A-2

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 4/2 | | 10YR 4/2 | | | | Silt loam | |
| 4-15 | 2.5Y 4/2 | | 2.5Y 6/2 | | RM | M | Silt loam | |
| 15+ | 5Y 5/2 | | 2.5Y 5/6 | | RM | M | Silty clay loam | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR R, MLRA 149B)
- ___ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ___ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ___ Loamy Mucky Mineral (F1) (LRR K, L)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ___ Coast Prairie Redox (A16) (LRR K, L, R)
- ___ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ___ Dark Surface (S7) (LRR K, L)
- ___ Polyvalue Below Surface (S8) (LRR K, L)
- ___ Thin Dark Surface (S9) (LRR K, L)
- ___ Iron-Manganese Masses (F12) (LRR K, L, R)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ___ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: hard pan

Depth (inches): 4 inches

Remarks:

Hydric Soil Present? Yes X No ___

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4702

Camelot Village
Camelot Holdings LLC
Portland, ME

**Soil Narrative Report**

| | |
|---|---|
| DATE: | Soil Profiles observed on May 10, 2017 |
| BASE MAP: | Base plan provided by Acorn Engineering, Inc.<br>scale 1 inch equals 100 feet and two foot contours. |
| GROUND CONTROL: | Soil survey boundaries located by Mark Hampton Associates, Inc. for Class B Soil Survey |

**Class B-High Intensity Soil Survey (Minimum Standards)**

Mapping units of 1 acre or larger.
Scale of 1"= 100 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control – test pits located accurately under direction of registered land surveyor
Base Map –2 foot contour intervals

**Provided:**

Mapping units of 1/2 acre or larger
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by Mark Hampton Associates, Inc.
Ground topographic survey with one foot contours and ground control provided.

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.

C.S.S. #216, L.S.E. #263 May 20, 2017

Mark J. Hampton Date

STATE OF MAINE
MARK J.
HAMPTON
#216
CERTIFIED
SOIL SCIENTIST

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4702

Camelot Village
Camelot Holdings, LLC
Portland, ME

**Buxton**
(Aquic Dystric Eutrochrepts)

## SETTING

| | |
|---|---|
| PARENT MATERIAL: | Derived from glaciomarine or glaciolaucustrine sediments |
| LANDFORM: | Coastal lowlands and river valleys |
| POSITION IN LANDSCAPE: | Intermediate positions on landform |
| SLOPE GRADIENT RANGES: | (A) 0-3% |

## COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Moderately well drained with a perched watertable from 1.5 to 3.0 feet below the surface at some time from November to May or during periods of heavy precipitation.

TYPICAL PROFILE:

| | |
|---|---|
| Surface Layer: | Dark Brown, fine sandy loam 0-7" |
| Subsurface Layer: | Olive brown, silt loam, 8-15" |
| Subsoil Layer: | Olive gray silty clay loam, 15-32" |
| Substratum: | Gray silty clay loam +32" |

| | |
|---|---|
| HYDROLOGIC GROUP: | Group C |
| SURFACE RUNOFF: | Moderate to moderately slow |
| PERMEABILITY: | Slow to very slow |
| DEPTH TO BEDROCK: | Greater than 60 inches |
| HAZARD TO FLOODING: | None |

STATE OF MAINE
MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

## INCLUSIONS
**(Within Mapping Unit)**

CONTRASTING: Scantic, Lamoine, Lyman-Tunbridge

## USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

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Camelot Village
Camelot Holdings, LLC
Portland, ME

**Lamoine**
(Aeric Haplaquepts)

## SETTING

| | |
|---|---|
| PARENT MATERIAL: | Derived from glaciomarine or glaciolaucustrine sediments |
| LANDFORM: | Coastal lowlands and river valleys |
| POSITION IN LANDSCAPE: | Intermediate positions on landform |
| SLOPE GRADIENT RANGES: | (B) 3-8%, (C) 8-15%, (D) 15-25% |

## COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Somewhat poorly drained with a perched watertable from 0.5 to 2.0 feet below the surface at some time from November to June or during periods of heavy precipitation.

TYPICAL PROFILE:

| | |
|---|---|
| Surface Layer: | Dark Brown, fine sandy loam 0-7" |
| Subsurface Layer: | Lt. Olive brown silt loam, 7-14" |
| Subsoil Layer: | Olive silty clay loam, 14-21" |
| Substratum: | Olive, silty clay loam, 21-65" |

| | |
|---|---|
| HYDROLOGIC GROUP: | Group D |
| SURFACE RUNOFF: | Moderate to moderately slow |
| PERMEABILITY: | Slow to very slow |
| DEPTH TO BEDROCK: | Greater than 65 inches |
| HAZARD TO FLOODING: | None |

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## INCLUSIONS
**(Within Mapping Unit)**

CONTRASTING: Buxton, Scantic, Podunk

## USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

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Camelot Village
Camelot Holdings LLC
Portland, ME

**Scantic**
(Aquic Haplorthod)

## SETTING

| | |
|---|---|
| PARENT MATERIAL: | Derived from glaciomarine or glaciolaucustrine sediments |
| LANDFORM: | Coastal lowlands and river valleys |
| POSITION IN LANDSCAPE: | Lower positions on landform |
| SLOPE GRADIENT RANGES: | (A) 0-3% |

## COMPOSITION AND SOIL CHARACTERISTICS

DRAINAGE CLASS: Poorly drained with a perched watertable from 0.0 to 1.0 feet below the surface at some time from October to May or during periods of heavy precipitation.

TYPICAL PROFILE:

| | |
|---|---|
| Surface Layer: | Dark grayish brown, silt loam 0-9" |
| Subsurface Layer: | Olive gray silt loam, 9-16" |
| Subsoil Layer: | Olive silty clay loam, 16-29" |
| Substratum: | Olive gray clay loam, 29-65" |

| | |
|---|---|
| HYDROLOGIC GROUP: | Group D |
| SURFACE RUNOFF: | Moderate to moderately slow |
| PERMEABILITY: | Slow to very slow |
| DEPTH TO BEDROCK: | Greater than 65 inches |
| HAZARD TO FLOODING: | None |

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CERTIFIED SOIL SCIENTIST

## INCLUSIONS

**(Within Mapping Unit)**

CONTRASTING: Buxton, Lamoine, Podunk

## USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

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Camelot Village
Camelot Holdings, LLC
Portland, ME

**Podunk**
(Fluvaquentic Dystrudepts)

## SETTING

| | |
|---|---|
| PARENT MATERIAL: | Derived from recent alluvium on floodplain |
| LANDFORM: | Floodplain |
| POSITION IN LANDSCAPE: | Low depressions and plains |
| SLOPE GRADIENT RANGES: | (A) 0-3%, |

## COMPOSITION AND SOIL CHARACTERISTICS

| | | |
|---|---|---|
| DRAINAGE CLASS: | Moderately well drained | |
| TYPICAL PROFILE: | Surface Layer: | Dark brown fine sandy loam, 0-12" |
| | Subsurface Layer: | Light olive brown 12-30" |
| | Substratum: | Olive gray, loamy fine sand, 30-65" |

| | |
|---|---|
| HYDROLOGIC GROUP: | Group D |
| SURFACE RUNOFF: | Slow to very slow |
| PERMEABILITY: | Moderately Rapid to Rapid |
| DEPTH TO BEDROCK: | Greater than 65 inches |
| HAZARD TO FLOODING: | Frequent |

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MARK J. HAMPTON
#216
CERTIFIED SOIL SCIENTIST

## INCLUSIONS
**(Within Mapping Unit)**

| | |
|---|---|
| CONTRASTING: | Lamoine, Buxton, Scantic |

## USE AND MANAGEMENT

Development: The limiting factor for building site development is wetness due to the presence of a high watertable for a portion of the year. Proper foundation drainage or site modification is recommended.

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# SOIL PROFILE / CLASSIFICATION INFORMATION

**DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: Camelot Village

Applicant Name: Camelot Holdings LLC

Project Location (municipality): Portland

## Exploration Symbol # SS1

☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness  Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | Olive Gray | Common & Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| E (Profile) | C (Condition) | 2 (Percent) | 16" (Depth) | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |

Soil Series/Phase Name: Buxton MWD  ☐ Hydric ☒ Non-hydric  Hydrologic Soil Group: ____

## Exploration Symbol # SS2

☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness  Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | Olive Gray | Common & Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| E (Profile) | C (Condition) | 2 (Percent) | 16" (Depth) | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |

Soil Series/Phase Name: Buxton MWD  ☐ Hydric ☐ Non-hydric  Hydrologic Soil Group: ____

## Exploration Symbol # SS3

☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness  Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | | |
| 20 | Silty Clay loam | Firm | Gray | Common & Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| E (Profile) | D (Condition) | 16 (Percent) | 16" (Depth) | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |

Soil Series/Phase Name: Lamoine SPD  ☐ Hydric ☒ Non-hydric  Hydrologic Soil Group: ____

## Exploration Symbol # SS4

☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness  Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | Olive Gray | Common & Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| E (Profile) | D (Condition) | 8 (Percent) | 12" (Depth) | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |

Soil Series/Phase Name: Lamoine SPD  ☐ Hydric ☒ Non-hydric  Hydrologic Soil Group: ____

## INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark Hampton  Date: 5/26/17

Name Printed: Marc J. Hampton  Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

# SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: Camelot Village

Applicant Name: Camelot Holdings LLC

Project Location (municipality): Portland

## Exploration Symbol # SS5

☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness  Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

| Depth | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Black | |
| 10 | Silty Clay loam | Firm | Gray | Common & Distinct |
| 20 | | | | |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile | Condition | Percent | Depth | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| E | E | 2 | 6 " | |

Soil Details by S.S. ▸▸

Soil Series/Phase Name: Scantic PD

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

## Exploration Symbol # SS6

☐ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness  Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

| Depth | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | olive gray | Common & Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile | Condition | Percent | Depth | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| E | D | 6 | 10 " | |

Soil Details by S.S. ▸▸

Soil Series/Phase Name: Lamoine SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

## Exploration Symbol # SS7

☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness  Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

| Depth | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | gray | Common & Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile | Condition | Percent | Depth | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| E | D | 10 | 10 " | |

Soil Details by S.S. ▸▸

Soil Series/Phase Name: Lamoine SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

## Exploration Symbol # SS8

☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness  Ground surface elev. _____

_____ " Depth of exploration or to refusal

Depth below mineral soil surface (inches)

| Depth | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | olive gray | Common & Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile | Condition | Percent | Depth | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| E | D | 10 | 17 " | |

Soil Details by S.S. ▸▸

Soil Series/Phase Name: Lamoine SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

## INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton

Date: 5/26/17

Name Printed: MARK J. Hampton

Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

# SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: Camelot Village

Applicant Name: Camelot Holdings LLC

Project Location (municipality): Portland

## Exploration Symbol # SS9

☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness  Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | Olive Gray | Common Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| E | D | 12 | 12" | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| Profile | Condition | Percent | Depth | |

Soil Series/Phase Name: Lamoine SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group

## Exploration Symbol # SS10

☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness  Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | Olive Gray | Common Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| E | D | 10 | 12" | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| Profile | Condition | Percent | Depth | |

Soil Series/Phase Name: Lamoine SPD

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group

## Exploration Symbol # SS11

☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness  Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | Olive Gray | Common Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| E | D | 2 | 13" | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| Profile | Condition | Percent | Depth | |

Soil Series/Phase Name: Lamoine SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group

## Exploration Symbol # SS12

☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness  Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Olive | |
| 10 | Silty Clay loam | Firm | Gray | Common Distinct |
| 20 | | | | |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| E | E | 2 | | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| Profile | Condition | Percent | Depth | |

Soil Series/Phase Name: Scantic SD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group

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## INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J Hampton  Date: 5/26/17

Name Printed: Mark J Hampton  Cert/Lic/Reg. #: 2631216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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# SOIL PROFILE / CLASSIFICATION INFORMATION

**DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: Camelot Village

Applicant Name: Camelot Holdings LLC

Project Location (municipality): Portland

## Exploration Symbol # SS13

☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness  Ground surface elev. _____

_____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Sandy loam | Friable | Dark Brown | |
| 10 | Loamy sand | Friable | Brown | |
| 20 | Sandy loam | Firm | Olive gray | Common Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile | Condition | Percent | Depth | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| | | 2 | 15 " | |

Soil Series/Phase Name: Podunk MUD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

## Exploration Symbol # SS14

☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness  Ground surface elev. _____

_____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Black | |
| 10 | Silty clay loam | Firm | Gray | Common Distinct |
| 20 | | | | |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile | Condition | Percent | Depth | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| E | E | 2 | 6 " | |

Soil Series/Phase Name: Scantic PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

## Exploration Symbol # SS15

☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness  Ground surface elev. _____

_____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty clay loam | Firm | Olive gray | Common Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile | Condition | Percent | Depth | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| E | D | 2 | 13 " | |

Soil Series/Phase Name: Lamoine SPD

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: _____

## Exploration Symbol # SS16

☒ Test Pit ☐ Boring ☐ Probe

_____ " Organic horizon thickness  Ground surface elev. _____

_____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Black | |
| 10 | Silty clay loam | Firm | Gray | Common Distinct |
| 20 | | | | |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile | Condition | Percent | Depth | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |
| E | E | 0 | " | |

Soil Series/Phase Name: Scantic PD

☒ Hydric ☐ Non-hydric

Hydrologic Soil Group: _____

## INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton

Date: 5/20/17

Name Printed: Mark J Hampton

Cert/Lic/Reg. #: 263/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

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FORM F Rev. 07/11

# SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: Camelot Village

Applicant Name: Camelot Holdings LLC

Project Location (municipality): Portland

Exploration Symbol # SS17 ☒ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | Silt loam | Friable | Dark Brown | |
| 10 | Silt loam | Friable | Brown | |
| 20 | Silty Clay loam | Firm | Gray | Common Distinct |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile: S | Condition: C | Percent: 2 | Depth: 16 " | ☒ Groundwater ☒ Restrictive Layer ☐ Bedrock |

Soil Series/Phase Name: Biddeford Mucks

☐ Hydric ☒ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | | | | |
| 10 | | | | |
| 20 | | | | |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile: | Condition: | Percent: | Depth: " | ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock |

Soil Series/Phase Name:

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | | | | |
| 10 | | | | |
| 20 | | | | |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile: | Condition: | Percent: | Depth: " | ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock |

Soil Series/Phase Name:

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: ____

Exploration Symbol # ____ ☐ Test Pit ☐ Boring ☐ Probe

____ " Organic horizon thickness Ground surface elev. ____

____ " Depth of exploration or to refusal

| Depth below mineral soil surface (inches) | Texture | Consistency | Color | Redox Features |
|---|---|---|---|---|
| 0 | | | | |
| 10 | | | | |
| 20 | | | | |
| 30 | | | | |
| 40 | | | | |
| 50 | | | | |
| 60 | | | | |

Soil Details by S.E. ▸▸ / S.S. ▸▸

| Soil Classification | | Slope | Limiting Factor | |
|---|---|---|---|---|
| Profile: | Condition: | Percent: | Depth: " | ☐ Groundwater ☐ Restrictive Layer ☐ Bedrock |

Soil Series/Phase Name:

☐ Hydric ☐ Non-hydric

Hydrologic Soil Group: ____

STATE OF MAINE MARK J. HAMPTON #216 CERTIFIED SOIL SCIENTIST

affix professional seal

## INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton

Date: 5/2/17

Name Printed: Mark J. Hampton

Cert/Lic/Reg. #: 503/216

Title: ☒ Licensed Site Evaluator ☒ Certified Soil Scientist ☐ Certified Geologist ☐ Professional Engineer

MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4702

June 12, 2017

Mr. Mike Barton
Camelot Holdings LLC
5 Stone Pony Circle
Saco, ME 04072

Re: Vernal Pool Assessment, 50+ acre parcel Camelot Village Westbrook Street Portland, ME

Dear Mike,

I have completed a vernal pool assessment during this breeding season, on the 50+- acre parcel of land located off Westbrook Street Portland, ME. The vernal pool assessment was conducted in accordance with Chapter 335 Significant Wildlife Habitat, Section 9 Significant Vernal Pools for the Maine Department of Environmental Protection. This section outlines the definition of a vernal pool as well as the requirements of a vernal pool to meet the definition of significance as related to the number of amphibian egg masses counted during the breeding season.

I made 6 site visits to the property over the course of six weeks beginning the third week in April. During each of these site visits I would evaluate each potential site of a possible vernal pool. I was looking for any amphibian egg masses. I did not find any wood frog or salamander egg masses on the property. As such, based on the observations made this spring, there are no vernal pools on the property. Vernal pools are described as shallow depressions that usually only contain water for part of the year. Vernal pools are also mostly likely to occur in forested or heavily vegetated areas for protection. There was only one area on the property which met this criteria and that is located in the northwest corner of the property up against the turnpike and Westbrook Street. And this pocket did not have any egg masses during the evaluation period.

P.O. BOX 1931 • PORTLAND, ME 04104-1931 • 207-756-2900 • mhampto1@maine.rr.com

I have included a completed Maine State Vernal Pool Assessment Form and a copy of a photograph of the assessment site. At your authorization I will submit the form and photograph to Maine Department of Inland Fisheries and Wildlife for processing.

If you have any questions or require additional information, please contact me.

Sincerely,

Mark J. Hampton C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263

# Maine State Vernal Pool Assessment Form

**INSTRUCTIONS:**

- **Complete all 3 pages of form thoroughly. Most fields are required for pool registration.**
- **Clear photographs of a) the pool AND b) the indicators (one example of each species egg mass) are required for all observers.**

**Observer's Pool ID:** Camelot Holding A1 **MDIFW Pool ID:** _____

**1. PRIMARY OBSERVER INFORMATION**

a. Observer name: Mark Hampton

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ⊙ Yes

**2. PROJECT CONTACT INFORMATION**

a. Contact name: ⊙ same as observer ○ other _____

b. Contact and credentials previously provided? ○ No (submit Addendum 1) ⊙ Yes

c. Project Name: Camelot Village

**3. LANDOWNER CONTACT INFORMATION**

a. Are you the landowner? ○ Yes ⊙ No If no, was landowner permission obtained for survey? ⊙ Yes ○ No

b. Landowner's contact information (required)

Name: Camelot Holdings LLC Phone: 286-6210

Street Address: 5 Stone Pony Circle City: Saco State: ME Zip: 072

c. ☐ Large Projects: check if separate project landowner data file submitted

**4. VERNAL POOL LOCATION INFORMATION**

**a. Location** Township: Portland

Brief site directions to the pool (using mapped landmarks):

Near the intersection of Westbrook Street and the Maine Turnpike

**b. Mapping Requirements**

i. USGS topographic map OR aerial photograph with pool clearly marked.

ii. **GPS location of vernal pool (use Datum NAD83 / WGS84)**

Longitude/Easting: -70-19-51W Latitude/Northing: 43-39-36N

Coordinate system: NAD27

Check one:

○ GIS shapefile
- send to Jason.Czapiga@maine.gov; observer has reviewed shape accuracy (Best)

○ The pool perimeter is delineated by multiple GPS points. (Excellent)
- Include map or spreadsheet with coordinates.

⊙ The above GPS point is at the center of the pool. (Good)

○ The center of the pool is approximately _____ m ○ ft ○ in the compass direction of _____ degrees from the above GPS point. (Acceptable)

## 5. VERNAL POOL HABITAT INFORMATION

**a. Habitat survey date (only if different from indicator survey dates on page 3):** _____

**b. Wetland habitat characterization**

■ Choose the best descriptor for the landscape setting:

- ⦿ Isolated depression
- ○ Floodplain depression
- ○ Pool associated with larger wetland complex
- ○ Other: _____

■ Check all wetland types that best apply to this pool:

- ☐ Forested swamp
- ☐ Shrub swamp
- ☐ Peatland (fen or bog)
- ☐ Emergent marsh
- ☐ Wet meadow
- ☐ Lake or pond cove
- ☐ Abandoned beaver flowage
- ☐ Active beaver flowage
- ☐ Slow stream
- ☐ Floodplain
- ☑ Mostly unvegetated pool
- ☐ ATV or skidder rut
- ☐ Dug pond or borrow pit
- ☐ Roadside ditch
- ☐ Other: _____

**c. Vernal pool status under the Natural Resources Protection Act (NRPA)**

**i. Pool Origin:** ⦿ Natural ○ Natural-Modified ○ Unnatural ○ Unknown

If modified, unnatural or unknown, describe any modern or historic human impacts to the pool (**required**):

**ii. Pool Hydrology**

■ Select the pool's estimated hydroperiod AND provide rationale in box (**required**):

- ○ Permanent
- ○ Semi-permanent (drying partially in all years and completely in drought years)
- ⦿ Ephemeral (drying out completely in most years)
- ○ Unknown

Explain:

■ Maximum depth at survey: ○ 0-12" (0-1 ft.) ⦿ 12-36" (1-3 ft.) ○ 36-60" (3-5 ft.) ○ >60" (>5 ft.)

■ Approximate size of pool (at spring highwater): Width: 30 ○ m ⦿ ft Length: 100 ○ m ⦿ ft

■ Predominate substrate in order of increasing hydroperiod:

- ○ Mineral soil (bare, leaf-litter bottom, or upland mosses present)
- ○ Mineral soil (sphagnum moss present)
- ⦿ Organic matter (peat/muck) shallow or restricted to deepest portion
- ○ Organic matter (peat/muck) deep and widespread

■ Pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- ☐ Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.)
- ☐ Dry site ferns (e.g. spinulose wood fern, lady fern, bracken fern)
- ☐ Moist site ferns (e.g. sensitive fern, cinnamon fern, interrupted fern, New York fern)
- ☐ Moist site vasculars (e.g. skunk cabbage, jewelweed, blue flag iris, swamp candle)
- ☐ Sphagnum moss (anchored or suspended)
- ☐ Wet site ferns (e.g. royal fern, marsh fern)
- ☐ Wet site shrubs (e.g. highbush blueberry, maleberry, winterberry, mountain holly)
- ☐ Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail, bulrushes)
- ☐ Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
- ☐ Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)
- ☑ No vegetation in pool

■ Faunal indicators (check all that apply):

- ☐ Fish
- ☐ Bullfrog or Green Frog tadpoles
- ☐ Other: _____

**iii. Inlet/Outlet Flow Permanency**

Type of inlet or outlet (a seasonal or permanent channel providing water flowing into or out of the pool):

- ○ No inlet or outlet
- ⦿ Intermittent inlet or outlet
- ○ Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- ○ Other or Unknown (explain): _____

# Maine State Vernal Pool Assessment Form

## 6. VERNAL POOL INDICATOR INFORMATION

**a. Indicator survey dates:** 4/25, 5/3, 5/11, 5/17, 5/25, 6/3

**b. Indicator abundance criteria and pool survey effort**

- Is pool depression bisected by 2 ownerships (straddler pool)? ⦿ Yes ○ No
- Was the entire pool surveyed for egg masses? ⦿ Yes ○ No; what % of entire pool surveyed? _____
- For each indicator species, indicate the exact number of egg masses, confidence level for species determination, and egg mass maturity. Separate cells are provided for separate survey dates.

| INDICATOR SPECIES | Egg Masses (or adult Fairy Shrimp) | | | | | | | | | Tadpoles/Larvae[4] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Visit #1 | Visit #2 | Visit #3 | Confidence Level[1] | | | Egg Mass Maturity[2] | | | Observed | | | Confidence Level[1] | | |
| Wood Frog | 0 | 0 | 0 | 1 | 1 | 1 | | | | | | | | | |
| Spotted Salamander | 0 | 0 | 0 | 1 | 1 | 1 | | | | | | | | | |
| Blue-spotted Salamander | 0 | 0 | 0 | 1 | 1 | 1 | | | | | | | | | |
| Fairy Shrimp[3] | 0 | 0 | 0 | 1 | 1 | 1 | | | | | | | | | |

1-Confidence level: 1 = <60%, 2 = 60-95%, 3 = >95%

2-Egg mass maturity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (loose matrix, curved embryos), H= Hatched or Hatching

3-Fairy shrimp: X = present

4-Tadpoles/larvae: X = present

**c. Rarity criteria**

- Note any rare species associated with vernal pools. Observations should be accompanied by photographs.

| SPECIES | Method of Verification* | | | CL** | SPECIES | Method of Verification* | | | CL** |
|---|---|---|---|---|---|---|---|---|---|
| | P | H | S | | | P | H | S | |
| Blanding's Turtle | ☐ | ☐ | ☐ | | Wood Turtle | ☐ | ☐ | ☐ | |
| Spotted Turtle | ☐ | ☐ | ☐ | | Ribbon Snake | ☐ | ☐ | ☐ | |
| Ringed Boghaunter | ☐ | ☐ | ☐ | | Other: | ☐ | ☐ | ☐ | |

*Method of verification: P = Photographed, H = Handled, S = Seen

**CL - Confidence level in species determination: 1= <60%, 2= 60-95%, 3= >95%

**d. Optional observer recommendation:**

☐ SVP ☐ Potential SVP ☐ Non Significant VP ☐ Indicator Breeding Area

**e. General vernal pool comments and/or observations of other wildlife:**

Send completed form and supporting documentation to: Maine Dept. of Inland Fisheries and Wildlife
Attn: Vernal Pools
650 State Street, Bangor, ME 04401

**NOTE: Digital submission (to Jason.Czapiga@maine.gov) of vernal pool field forms and photographs is only acceptable for projects with 3 or fewer assessed pools; larger projects must be mailed as hard copies.**

**For MDIFW use only** Reviewed by MDIFW Date: _____ Initials: _____

This pool is: ☐ **Significant** ☐ **Potentially Significant** but lacking critical data ☐ **Not Significant** due to: ○ does not meet biological criteria. ○ does not meet MDEP vernal pool criteria.

Comments: