

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

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

**SECTION I: BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 17 <sup>23</sup>, 2014

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: NAE-2014-01934, Otis Air National Guard Base, SO1, SO2, SO3A, SO3B, SO4

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: MA County/parish/borough: Barnstable County City: Buzzards Bay  
Center coordinates of site (lat/long in degree decimal format): Lat. 41d 39m 59.05s° N, Long. 70d 31m 48.20s° W.  
Universal Transverse Mercator: [redacted]

Name of nearest waterbody: Weeks Pond

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mashpee River

Name of watershed or Hydrologic Unit Code (HUC): Cape Cod

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

Office (Desk) Determination. Date: August 5, 2014

Field Determination. Date(s): [redacted]

**SECTION II: SUMMARY OF FINDINGS**

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain: [redacted]

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: [redacted] linear feet; [redacted] width (ft) and/or [redacted] acres.

Wetlands: [redacted] acres.

c. Limits (boundaries) of jurisdiction based on: Pick List

Elevation of established OHWM (if known): [redacted]

2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain: The streams are within a closed system isolated from water of the United States. The closest Non-TNW

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

waterway is 4,500 feet away (Weeks Pond). The closest Non-TNW flowing waterbody is 13,800 feet away (Mashpee River).

### SECTION III: CWA ANALYSIS

#### A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. TNW  
Identify TNW: [redacted].

Summarize rationale supporting determination: [redacted].

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

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

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

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

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

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

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

- (i) General Area Conditions:  
Watershed size: [redacted] Pick List  
Drainage area: [redacted] Pick List  
Average annual rainfall: [redacted] inches  
Average annual snowfall: [redacted] inches

- (ii) Physical Characteristics:

- (a) Relationship with TNW:

- Tributary flows directly into TNW.  
 Tributary flows through Pick List tributaries before entering TNW.

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

Identify flow route to TNW<sup>5</sup>: [redacted].  
Tributary stream order, if known: [redacted].

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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

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

- Tributary is:  Natural  
 Artificial (man-made). Explain: [redacted].  
 Manipulated (man-altered). Explain: [redacted].

Tributary properties with respect to top of bank (estimate):

Average width: [redacted] feet  
Average depth: [redacted] feet  
Average side slopes: Pick List.

Primary tributary substrate composition (check all that apply):

- |  |   |                                   |
|--|---|-----------------------------------|
| <input type="checkbox"/> Silts                       | <input type="checkbox"/> Sands                                | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles                     | <input type="checkbox"/> Gravel                               | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock                     | <input type="checkbox"/> Vegetation. Type/% cover: [redacted] |                                   |
| <input type="checkbox"/> Other. Explain: [redacted]. |   |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: [redacted].

Presence of run/riffle/pool complexes. Explain: [redacted].

Tributary geometry: Pick List

Tributary gradient (approximate average slope): [redacted] %

(c) Flow:

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime: [redacted].

Other information on duration and volume: [redacted].

Surface flow is: Pick List. Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

Dye (or other) test performed: [redacted].

Tributary has (check all that apply):

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

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

- |  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list): [redacted]                  |  |

(iii) Chemical Characteristics:

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

Explain: [redacted].

Identify specific pollutants, if known: [redacted].

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

<sup>7</sup>Ibid.

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: [redacted] acres

Wetland type. Explain: [redacted].

Wetland quality. Explain: [redacted].

Project wetlands cross or serve as state boundaries. Explain: [redacted].

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain: [redacted].

Surface flow is: Pick List

Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

Dye (or other) test performed: [redacted].

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: [redacted].

Ecological connection. Explain: [redacted].

Separated by berm/barrier. Explain: [redacted].

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

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

Flow is from: Pick List.

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

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known: [redacted].

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

Riparian buffer. Characteristics (type, average width): [redacted].

Vegetation type/percent cover. Explain: [redacted].

Habitat for:

Federally Listed species. Explain findings: [redacted].

Fish/spawn areas. Explain findings: [redacted].

Other environmentally-sensitive species. Explain findings: [redacted].

Aquatic/wildlife diversity. Explain findings: [redacted].

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

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

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

For each wetland, specify the following:

Directly abuts? (Y/N)

[Redacted]

Size (in acres)

[Redacted]

Directly abuts? (Y/N)

[Redacted]

Size (in acres)

[Redacted]

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

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: [Redacted].
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [Redacted].
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [Redacted].

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

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:
  - TNWs: [Redacted] linear feet [Redacted] width (ft), Or, [Redacted] acres.
  - Wetlands adjacent to TNWs: [Redacted] acres.
2. RPWs that flow directly or indirectly into TNWs.
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: [Redacted].
  - Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: [Redacted].

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
  - Other non-wetland waters: [redacted] acres.
- Identify type(s) of waters: [redacted].

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
  - Other non-wetland waters: [redacted] acres.
- Identify type(s) of waters: [redacted].

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

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

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

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

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

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

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

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

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

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

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

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

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

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

Identify water body and summarize rationale supporting determination: [redacted].

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
- Other non-wetland waters: [redacted] acres.  
Identify type(s) of waters: [redacted].
- Wetlands: [redacted] acres.

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

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **The streams are within a closed system located over 4,500 feet from the nearest body of water. The nexus has been cutoff from the distance between the streams and the waterbody.**
- Other: (explain, if not covered above): [redacted].

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): [redacted] linear feet [redacted] width (ft).
- Lakes/ponds: [redacted] acres.
- Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].
- Wetlands: [redacted] acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): SO1 375, SO2 150, SO3A 150, SO3B 225, SO4 400 linear feet, SO1 1.5, SO2 2, SO3A 8, SO3B 1, SO4 1.5 width (ft).
- Lakes/ponds: [redacted] acres.
- Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].
- Wetlands: [redacted] acres.

**SECTION IV: DATA SOURCES.**

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

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Figure 4A.**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: [redacted].
- Corps navigable waters' study: [redacted].
- U.S. Geological Survey Hydrologic Atlas: [redacted].
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: **POCASSET, MA. 1:25,000.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: [redacted].
- National wetlands inventory map(s). Cite name: **24k Quad Name: Pocasset.**
- State/Local wetland inventory map(s): [redacted].
- FEMA/FIRM maps: [redacted].
- 100-year Floodplain Elevation is: [redacted] (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Aerial View From Google Earth SO2-4.**  
or  Other (Name & Date): **P13-SO1-Downstream (DS) view of SO1 as it crosses right-of-way, P14-SO2-Facing DS along channel, P15-SO3-DS view of SO3 near convergence with WO1, P16-SO3-US view of SO3-Portions of SO3 held water but the flow ended at a low point upstream.**
- Previous determination(s). File no. and date of response letter: [redacted].
- Applicable/supporting case law: [redacted].
- Applicable/supporting scientific literature: [redacted].
- Other information (please specify): **Consultant's Notes/Descriptions.**

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

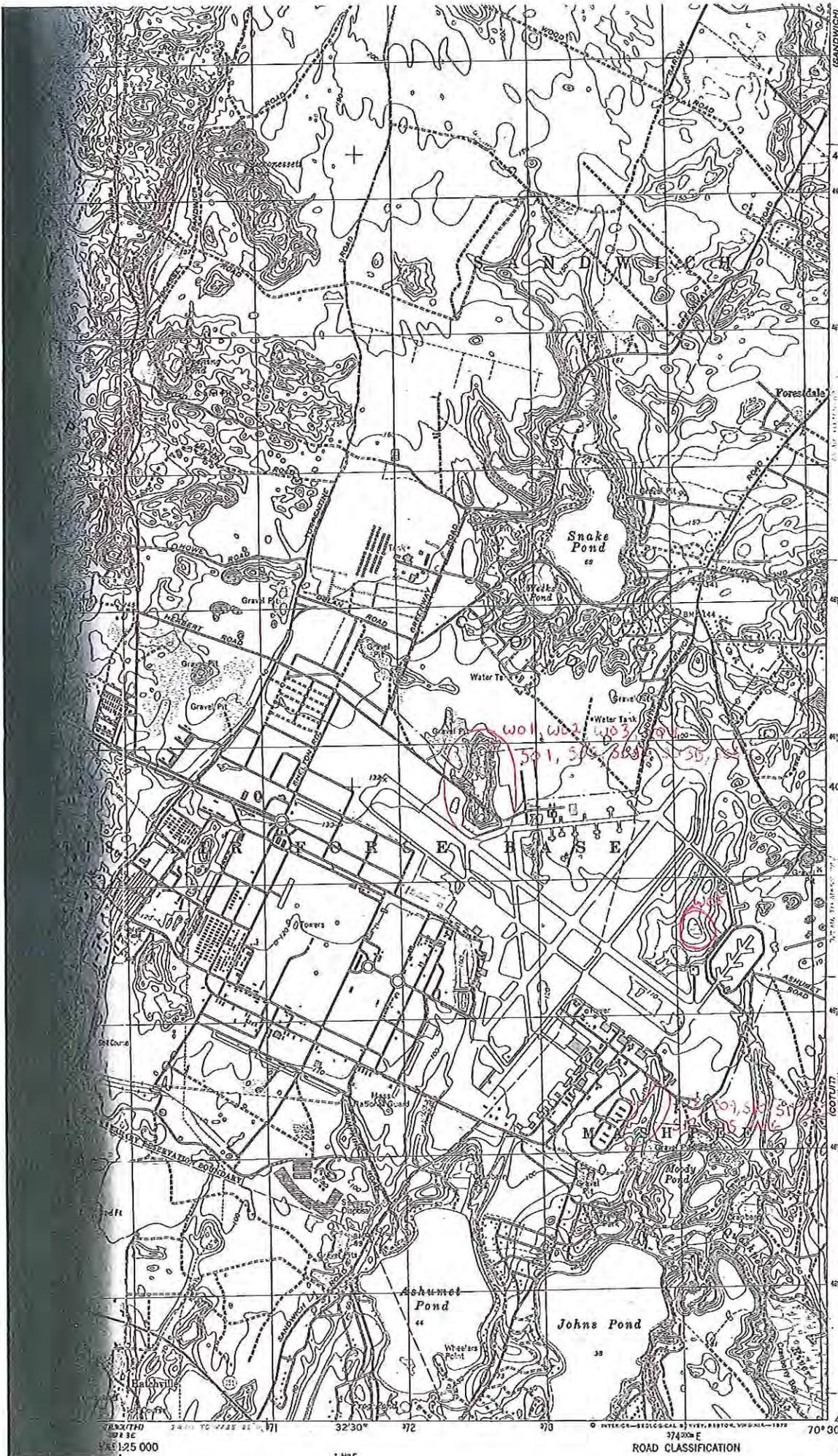
SO1 is a manipulated ephemeral channel with a relatively straight channel. Runoff from the athletic fields and roadside drainage feed water into SO1. The flow ends at a level grassy area with no defined channel. It is likely that overland flow goes into SO2 and SO3.

SO2 is a manmade channel, however historically there may have been a natural channel going through the general area that would have extended SO1. SO2 receives water from SO1 and from upland flow within and outside of the fence line. SO2 flows into SO3.

SO3(A/B) has been manipulated and prior to the construction of the airfield in the 1940s it may have been a seasonal stream. WO2 feeds SO3 and SO3 feeds into WO1. There is a low point in SO3 between WO1 and WO2 where water pools and likely evaporates or infiltrates during low flow periods.

SO4 receives runoff water from the airfield and the flow ends with no continuation of a channel. The water likely infiltrates or moves into WO1.





CONVERSION SCALES



Feet	Meters
1	3048
2	6096
3	9144
4	12192
5	15240
6	18288
7	21336
8	24384
9	27432
10	30480

To convert feet to meters multiply by 30.48  
 To convert meters to feet multiply by 3.2808



SO2, SO3A, SO3B, SO4

SO1

Zoom History

0 100 200 300 400 500 600 700 800 900 1000

0 km 50 m 200 ft

Map Scale: 1:1128 Lat: 41.6672, Lng: -70.8328

Aerial View From Google Earth S02-4



S02, S03a, S03B, S04

S01

Herbert Rd

**P13 – S01 – Downstream (DS) view of S01 as it crosses a right-of-way**



**P14 – S02 – Facing DS along channel**



**P15 – S03 – DS view of S03 near convergence with W01**



**P16 –S03 – US view of S03 – Portions of S03 held water but the flow ended at a low point upstream**



Photo unavailable for S04

TABLE 2  
Streams  
*Otis ANGB Wetland Delineation*

Streams	Type	Length (Linear Feet)
S01	Ephemeral	770
S02	Ephemeral	317
S03A	Intermittent	383
S03B	Ephemeral	459
S04	Ephemeral	834
S05	Ephemeral	188
S06	Ephemeral	438
S07	Ephemeral	801
S08	Ephemeral	1,377
S09	Ephemeral	179
S10	Ephemeral	328
S11	Ephemeral	456
S12	Ephemeral	313
S13	Ephemeral	311
S14	Ephemeral	1,591
S15	Ephemeral	299

1 **S01**

2 S01 is a manipulated ephemeral channel approximately 1.5 feet wide. The substrate was primarily dirt with  
3 areas of debris and rooted vegetation. The channel parallels a road and likely receives runoff from the road.  
4 The stream is fairly straight and could have been man-made, to aid in road drainage. The channel is  
5 generally natural bottom, but there is a short area of rip-rap bottom as it crosses an electric transmission  
6 rights-of-way. At the base of the hill the stream bed and banks end and any intermittent flows infiltrate.  
7 During and following large storm events, it is likely this channel connects to S02 via overland flow.

8 **S02**

9 S02 is a small manmade ephemeral channel approximately 2 feet wide. The substrate mainly consisted of  
10 loose sediments, and it is likely S02 only flows during and shortly after rain events. Signs of recent  
11 construction activities and ground disturbance were evident in the area. S02 directly connects to S03A.

12 **S03A**

13 S03A is likely a manipulated intermittent channel that received inflow from the flight storm drain system.  
14 S03A originates from W02. The substrate was silt and sand mixed with gravel and the stream channel was  
15 nearly straight. The stream held water was receiving flow from W02 at the time of survey. S03A was  
16 approximately 8 feet wide at its origin at W02, but the channel narrowed and became dry near the  
17 transition to S03B, which occurred at a topographic low point.

1 **S03B**

2 Stream S03B was an ephemeral channel approximately 1 foot wide. The stream narrowed from 3 feet at the  
3 transition point from S03A to 1.5 feet wide where it connected with W01. The substrate consisted of sand  
4 and was dry. In addition, the stream bed contained a high point, which would restrict normal storm flow  
5 from reaching W01. However, the stream would likely connect with wetland W01 during large storm events.  
6 Depending on the nature and location of precipitation, W01 could receive flow from S03B or could  
7 contribute flow to S03B.

8 **S04**

9 S04 was an ephemeral channel that originated from a culvert that likely drains the airfield. At the culvert  
10 origin point, there was a large erosion/scour area that led to a culvert under the perimeter fence. The  
11 stream continued to the north of the perimeter fence, but remained within Otis ANGB, and narrowed to  
12 approximately 1.5 feet wide. The stream was straight at the culvert origin point but meandered outside of  
13 the perimeter fence before ending short of W01. The stream substrate was primarily silt and sand. The  
14 stream would likely connect with wetland W01 during large storm events through overland sheet flow.

15 **S05**

16 S05 was a small man-made, rip-rap-lined drainage feature approximately 1 foot wide that drains a portion of  
17 a grassed area of a wastewater treatment plant (WWTP). The stream began at the WWTP fence-line. The  
18 ephemeral stream showed signs of occasional flow, but flow is likely only during large storm events. The  
19 stream ends at a low point that contains rip-rap. There was no outlet to the low point or connection to any  
20 other surface water or drainage feature.

21 **S06**

22 S06 started at a culvert that conveys drainage from above the road. The ephemeral stream was  
23 approximately 2 feet wide and lacked bed and bank in areas. Much of the stream bed was lined with moss  
24 and some upland vegetation, such as apple trees, which also were growing in the bed of the stream. The  
25 stream was piped underneath a railroad track and then ended shortly past the railroad tracks in a patch of  
26 apple trees.

27 **S07**

28 S07 was an ephemeral channel that originates from a culvert that collects runoff from the military cemetery.  
29 The stream is located between the Otis ANGB entrance and exit roads with much of the channel occurring  
30 on steep slopes before flattening out and ending within an upland area. The meandering channel varied in  
31 width but averaged approximately 1.5 feet wide with no ordinary high water mark (OHWM). The substrate  
32 consisted of silts and sands with gravel.

33 **S08**

34 S08 had an average width of approximately 3 feet. The stream started at a concrete stormwater vault and  
35 was concrete lined and rip-rapped at the beginning. The stream formed a more natural channel as it moved  
36 south toward W06. The stream directly discharges to and ends at W06. The stream likely only receives flow  
37 during storm events that push water out of the concrete stormwater vault. The stream had a mix of  
38 substrates and was rockier in the northern portion and contained larger amounts of sediment near W06.  
39 The stream was fairly straight and could have been man-made, to aid in drainage. A good portion of the  
40 stream banks were dominated by thick stands of multiflora rose.

41 **S09**

42 S09 originates at what is likely an overflow culvert for the concrete stormwater vault, which was the same  
43 concrete vault that stream S08 originated at. S09 was approximately 2 feet wide on average and only  
44 traveled a short distance before converging with S08. The ephemeral stream is likely man-made. The bed  
45 consisted of loose sediments and placed rock.



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

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

**SECTION I: BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:  County/parish/borough:  City:   
Center coordinates of site (lat/long in degree decimal format): Lat.  ° N, Long.  ° W.  
Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows:

Name of watershed or Hydrologic Unit Code (HUC):

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

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

- Office (Desk) Determination. Date:   
 Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

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

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs  
 Non-RPWs that flow directly or indirectly into TNWs  
 Wetlands directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs  
 Impoundments of jurisdictional waters  
 Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters:  linear feet:  width (ft) and/or  acres.  
Wetlands:  acres.

c. Limits (boundaries) of jurisdiction based on:

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

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

1. **TNW**  
Identify TNW: [redacted].  
  
Summarize rationale supporting determination: [redacted].
2. **Wetland adjacent to TNW**  
Summarize rationale supporting conclusion that wetland is "adjacent": [redacted].

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

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

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

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

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

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

- (i) **General Area Conditions:**  
Watershed size: [redacted] Pick List  
Drainage area: [redacted] Pick List  
Average annual rainfall: [redacted] inches  
Average annual snowfall: [redacted] inches
- (ii) **Physical Characteristics:**
  - (a) **Relationship with TNW:**  
 Tributary flows directly into TNW.  
 Tributary flows through Pick List tributaries before entering TNW.  
  
Project waters are Pick List river miles from TNW.  
Project waters are Pick List river miles from RPW.  
Project waters are Pick List aerial (straight) miles from TNW.  
Project waters are Pick List aerial (straight) miles from RPW.  
Project waters cross or serve as state boundaries. Explain: [redacted].  
  
Identify flow route to TNW<sup>5</sup>: [redacted].  
Tributary stream order, if known: [redacted].

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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

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

- Tributary is:  Natural  
 Artificial (man-made). Explain: [redacted].  
 Manipulated (man-altered). Explain: [redacted].

Tributary properties with respect to top of bank (estimate):

Average width: [redacted] feet  
Average depth: [redacted] feet  
Average side slopes: Pick List.

Primary tributary substrate composition (check all that apply):

- |  |   |                                   |
|--|---|-----------------------------------|
| <input type="checkbox"/> Silts                       | <input type="checkbox"/> Sands                                | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles                     | <input type="checkbox"/> Gravel                               | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock                     | <input type="checkbox"/> Vegetation. Type/% cover: [redacted] |                                   |
| <input type="checkbox"/> Other. Explain: [redacted]. |   |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: [redacted].

Presence of run/riffle/pool complexes. Explain: [redacted].

Tributary geometry: Pick List.

Tributary gradient (approximate average slope): [redacted] %

(c) Flow:

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime: [redacted].

Other information on duration and volume: [redacted].

Surface flow is: Pick List. Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

Dye (or other) test performed: [redacted].

Tributary has (check all that apply):

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

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

- |  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list): [redacted]                  |  |

(iii) Chemical Characteristics:

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

Explain: [redacted].

Identify specific pollutants, if known: [redacted].

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

<sup>7</sup>Ibid.

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: [redacted] acres

Wetland type. Explain: [redacted].

Wetland quality. Explain: [redacted].

Project wetlands cross or serve as state boundaries. Explain: [redacted].

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain: [redacted].

Surface flow is: Pick List

Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

Dye (or other) test performed: [redacted].

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: [redacted].

Ecological connection. Explain: [redacted].

Separated by berm/barrier. Explain: [redacted].

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

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

Flow is from: Pick List.

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

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known: [redacted].

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

Riparian buffer. Characteristics (type, average width): [redacted].

Vegetation type/percent cover. Explain: [redacted].

Habitat for:

Federally Listed species. Explain findings: [redacted].

Fish/spawn areas. Explain findings: [redacted].

Other environmentally-sensitive species. Explain findings: [redacted].

Aquatic/wildlife diversity. Explain findings: [redacted].

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

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

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

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Summarize overall biological, chemical and physical functions being performed: [REDACTED]

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: [REDACTED].
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [REDACTED].
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [REDACTED].

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

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:
  - TNWs: [REDACTED] linear feet [REDACTED] width (ft), Or, [REDACTED] acres.
  - Wetlands adjacent to TNWs: [REDACTED] acres.
2. RPWs that flow directly or indirectly into TNWs.
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: [REDACTED].
  - Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: [REDACTED].

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
- Other non-wetland waters: [redacted] acres.  
Identify type(s) of waters: [redacted].

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
- Other non-wetland waters: [redacted] acres.  
Identify type(s) of waters: [redacted].

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

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

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

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

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

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

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

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

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

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

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

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

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

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

Identify water body and summarize rationale supporting determination: [redacted].

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

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

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

Tributary waters: [redacted] linear feet [redacted] width (ft).

Other non-wetland waters: [redacted] acres.

Identify type(s) of waters: [redacted].

Wetlands: [redacted] acres.

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

If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.

Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.

Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: The stream is a closed system located over 8,400 feet from the nearest body of water. The nexus has been cutoff from the distance between the stream and the nearest waterbody.

Other: (explain, if not covered above): [redacted].

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

Non-wetland waters (i.e., rivers, streams): [redacted] linear feet [redacted] width (ft).

Lakes/ponds: [redacted] acres.

Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].

Wetlands: [redacted] acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

Non-wetland waters (i.e., rivers, streams): 150 linear feet, 2 width (ft).

Lakes/ponds: [redacted] acres.

Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].

Wetlands: [redacted] acres.

**SECTION IV: DATA SOURCES.**

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

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Figure 4A.

Data sheets prepared/submitted by or on behalf of the applicant/consultant.

Office concurs with data sheets/delineation report.

Office does not concur with data sheets/delineation report.

Data sheets prepared by the Corps: [redacted].

Corps navigable waters' study: [redacted].

U.S. Geological Survey Hydrologic Atlas: [redacted].

USGS NHD data.

USGS 8 and 12 digit HUC maps.

U.S. Geological Survey map(s). Cite scale & quad name: POCASSET, MA. 1:25,000.

USDA Natural Resources Conservation Service Soil Survey. Citation: [redacted].

National wetlands inventory map(s). Cite name: 24k Quad Name: Pocasset.

State/Local wetland inventory map(s): [redacted].

FEMA/FIRM maps: [redacted].

100-year Floodplain Elevation is: [redacted] (National Geodetic Vertical Datum of 1929)

Photographs:  Aerial (Name & Date): Google Earth Image SO6 September 22, 2014.

or  Other (Name & Date): P19-SO6-US View of S06 (road culvert and road are in background) & P20 - S06 - DS

View of S06 near ANGB Boundary.

Previous determination(s). File no. and date of response letter: [redacted].

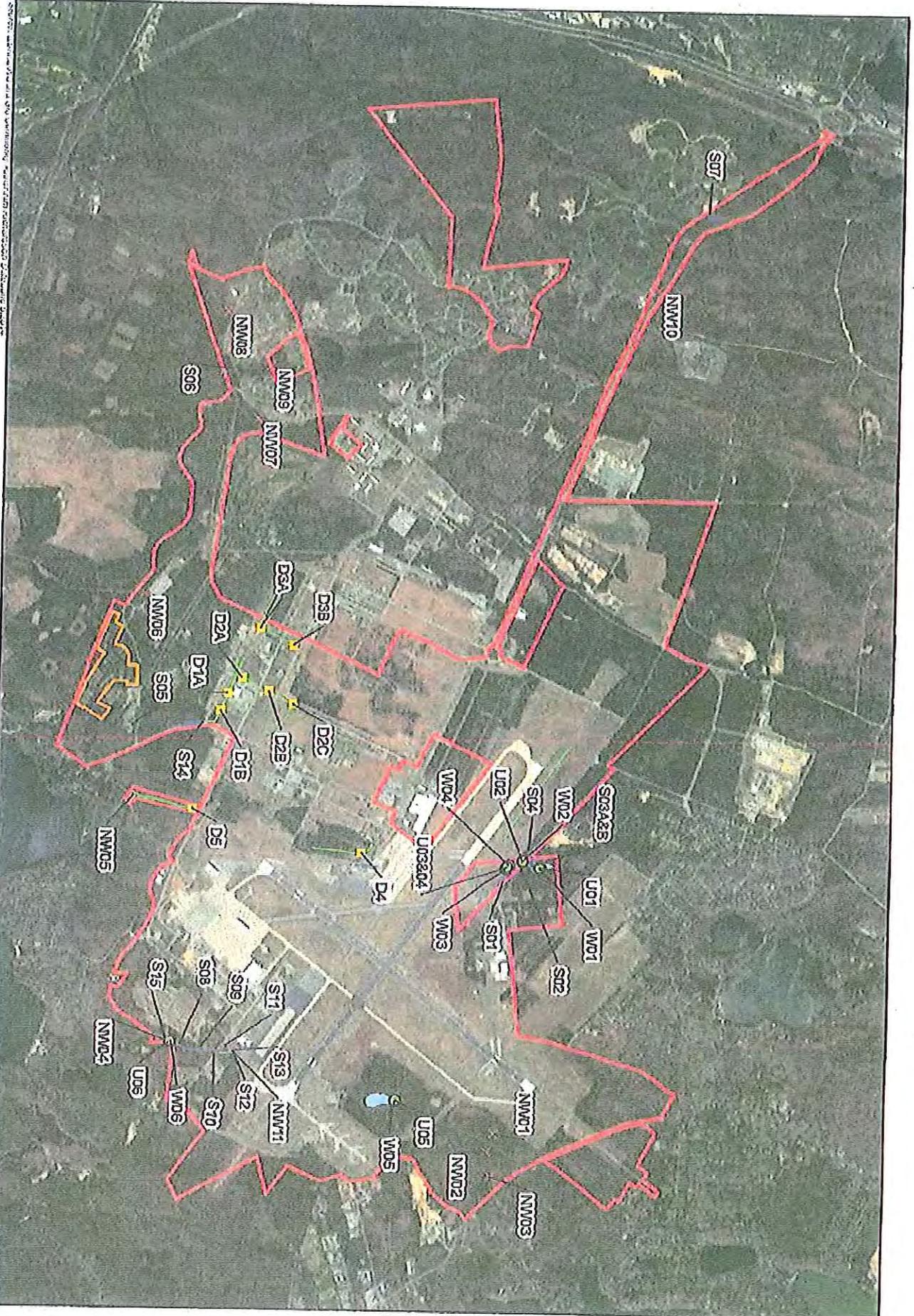
Applicable/supporting case law: [redacted].

Applicable/supporting scientific literature: [redacted].

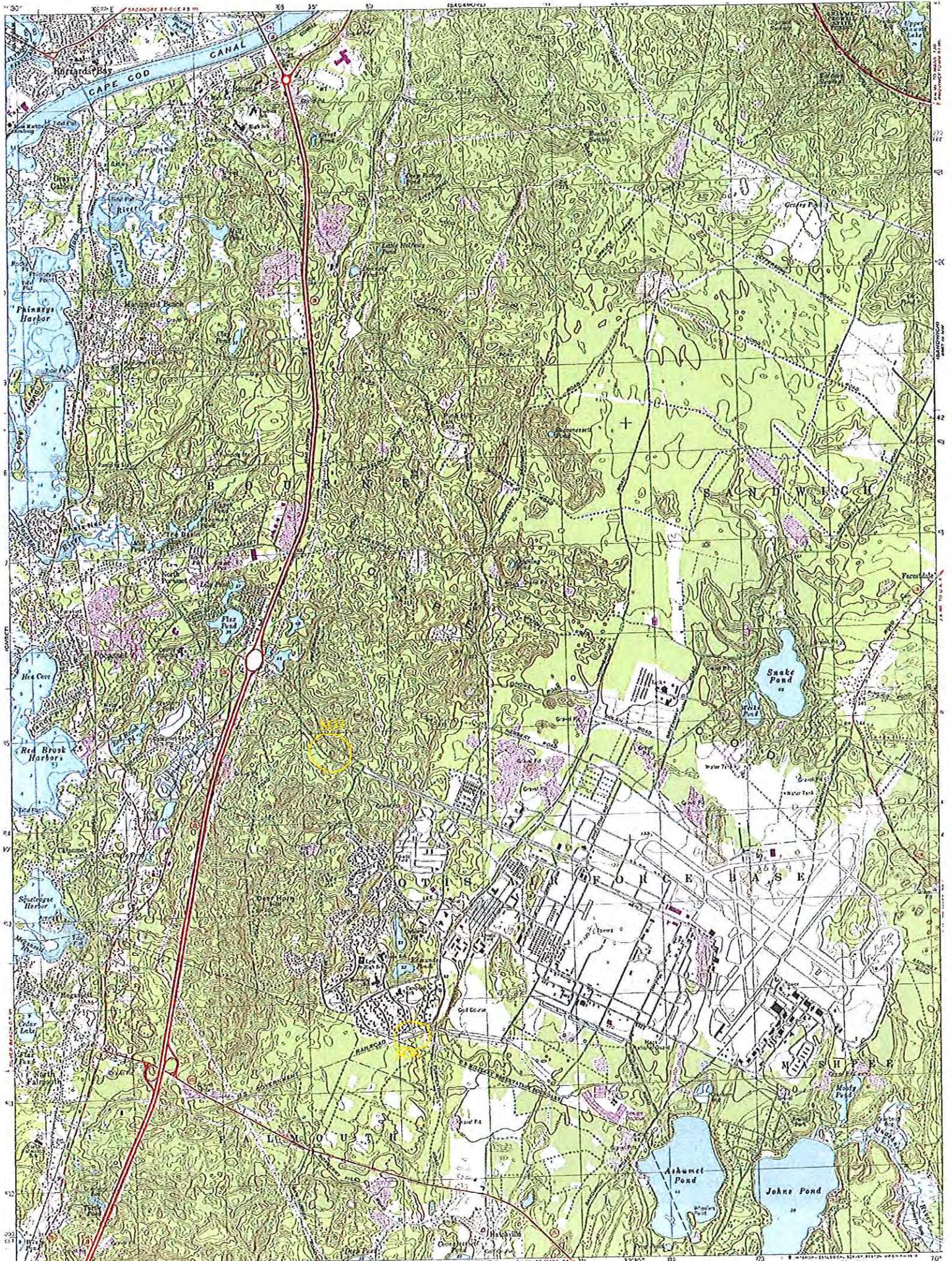
Other information (please specify): [redacted].

**B. ADDITIONAL COMMENTS TO SUPPORT JD:** According to the stream description submitted by the Consultant, SO6 originates at a culvert that conveys drainage from the above road. The stream is piped under a railroad track and ends at a patch of apple trees.

- Legend**
- Wetlands
  - Wetland Points
  - Upland Points
  - Streams
  - Stormwater Channels
  - Ditch Points
  - Non-Water Verification Points
  - Old Survey Boundary
  - Old Pond/Lagoon Area



**Figure 4A**  
**Overall View**  
 2014 Wetland Delineation  
 Olds ANG B, MA





Google Earth Imagery  
S06 September 22,  
2014



Underhill St

Lemay Ave

12200

12200

Rosemary Ave

Ebison St

Curt's Blvd

Edmunds Pond

Osborne Pond

Osborne Pond Rd

Hill St

Hunter Ave

Crispys Dr

Trooper Rd

Temple Rd

United Rd

Lee Rd

Almanac Rd

W Truck Rd

Coanther Rd

W Inner Rd

**P19 – S06 – US View of S06 (road culvert and road are in background)**



**P20 – S06 – DS View of S06 near ANGB Boundary**





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

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

**SECTION I: BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): [REDACTED]

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: NAE-2014-01934 Otis Air National Guard Base, SO7

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: MA County/parish/borough: Barnstable County City: Buzzards Bay  
Center coordinates of site (lat/long in degree decimal format): Lat. [REDACTED]° N, Long. [REDACTED]° W.  
Universal Transverse Mercator: [REDACTED]

Name of nearest waterbody: Flax Pond

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mashpee River

Name of watershed or Hydrologic Unit Code (HUC): Cape Cod

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

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

- Office (Desk) Determination. Date: [REDACTED]  
 Field Determination. Date(s): [REDACTED]

**SECTION II: SUMMARY OF FINDINGS**

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

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

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs  
 Non-RPWs that flow directly or indirectly into TNWs  
 Wetlands directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs  
 Impoundments of jurisdictional waters  
 Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: [REDACTED] linear feet; [REDACTED] width (ft) and/or [REDACTED] acres.  
Wetlands: [REDACTED] acres.

c. Limits (boundaries) of jurisdiction based on: Pick List

Elevation of established OHWM (if known): [REDACTED]

2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: The stream is isolated as it is a closed system. The closest Non-TNW waterway is 3,700 feet away (Flax Pond). The closest TNW waterbody is 1 mile and 3,100 feet away (Red Brook Harbor).

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

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

1. TNW  
Identify TNW: [redacted].

Summarize rationale supporting determination: [redacted].

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

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

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

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

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

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

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

(i) General Area Conditions:  
Watershed size: [redacted] Pick List  
Drainage area: [redacted] Pick List  
Average annual rainfall: [redacted] inches  
Average annual snowfall: [redacted] inches

(ii) Physical Characteristics:  
(a) Relationship with TNW:  
 Tributary flows directly into TNW.  
 Tributary flows through [redacted] tributaries before entering TNW.  
  
Project waters are [redacted] river miles from TNW.  
Project waters are [redacted] river miles from RPW.  
Project waters are [redacted] aerial (straight) miles from TNW.  
Project waters are [redacted] aerial (straight) miles from RPW.  
Project waters cross or serve as state boundaries. Explain: [redacted].

Identify flow route to TNW<sup>5</sup>: [redacted].  
Tributary stream order, if known: [redacted].

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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

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

- Tributary is:  Natural  
 Artificial (man-made). Explain: [redacted].  
 Manipulated (man-altered). Explain: [redacted].

Tributary properties with respect to top of bank (estimate):

Average width: [redacted] feet  
Average depth: [redacted] feet  
Average side slopes: Pick List.

Primary tributary substrate composition (check all that apply):

- |  |   |                                   |
|--|---|-----------------------------------|
| <input type="checkbox"/> Silts                       | <input type="checkbox"/> Sands                                | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles                     | <input type="checkbox"/> Gravel                               | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock                     | <input type="checkbox"/> Vegetation. Type/% cover: [redacted] |                                   |
| <input type="checkbox"/> Other. Explain: [redacted]. |   |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: [redacted].

Presence of run/riffle/pool complexes. Explain: [redacted].

Tributary geometry: Pick List

Tributary gradient (approximate average slope): [redacted] %

(c) Flow:

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime: [redacted].

Other information on duration and volume: [redacted].

Surface flow is: Pick List. Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

Dye (or other) test performed: [redacted].

Tributary has (check all that apply):

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

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

- |  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list): [redacted]                  |  |

(iii) Chemical Characteristics:

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

Explain: [redacted].

Identify specific pollutants, if known: [redacted].

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

<sup>7</sup>Ibid.

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: [redacted] acres

Wetland type. Explain: [redacted].

Wetland quality. Explain: [redacted].

Project wetlands cross or serve as state boundaries. Explain: [redacted].

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain: [redacted].

Surface flow is: Pick List

Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

Dye (or other) test performed: [redacted].

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: [redacted].

Ecological connection. Explain: [redacted].

Separated by berm/barrier. Explain: [redacted].

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

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

Flow is from: Pick List.

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

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known: [redacted].

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

Riparian buffer. Characteristics (type, average width): [redacted].

Vegetation type/percent cover. Explain: [redacted].

Habitat for:

Federally Listed species. Explain findings: [redacted].

Fish/spawn areas. Explain findings: [redacted].

Other environmentally-sensitive species. Explain findings: [redacted].

Aquatic/wildlife diversity. Explain findings: [redacted].

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

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

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

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: [REDACTED].
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [REDACTED].
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [REDACTED].

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

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:
  - TNWs: [REDACTED] linear feet [REDACTED] width (ft), Or, [REDACTED] acres.
  - Wetlands adjacent to TNWs: [REDACTED] acres.
2. RPWs that flow directly or indirectly into TNWs.
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: [REDACTED].
  - Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: [REDACTED].

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
- Other non-wetland waters: [redacted] acres.  
Identify type(s) of waters: [redacted].

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
- Other non-wetland waters: [redacted] acres.  
Identify type(s) of waters: [redacted].

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

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

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

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

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

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

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

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

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

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

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

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

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

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

Identify water body and summarize rationale supporting determination: [redacted].

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
- Other non-wetland waters: [redacted] acres.  
Identify type(s) of waters: [redacted].
- Wetlands: [redacted] acres.

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

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **The stream is a closed system located over 3,700 feet from the nearest body of water. The nexus has been cutoff from the distance between the stream and the nearest waterbody.**
- Other: (explain, if not covered above): [redacted].

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): [redacted] linear feet [redacted] width (ft).
- Lakes/ponds: [redacted] acres.
- Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].
- Wetlands: [redacted] acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): **300** linear feet, **1.5** width (ft).
- Lakes/ponds: [redacted] acres.
- Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].
- Wetlands: [redacted] acres.

**SECTION IV: DATA SOURCES.**

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

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Figure 4A.**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: [redacted].
- Corps navigable waters' study: [redacted].
- U.S. Geological Survey Hydrologic Atlas: [redacted].
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: **POCASSET, MA. 1:25,000.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: [redacted].
- National wetlands inventory map(s). Cite name: **24k Quad Name: Pocasset.**
- State/Local wetland inventory map(s): [redacted].
- FEMA/FIRM maps: [redacted].
- 100-year Floodplain Elevation is: [redacted] (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth September 22, 2014 S07.**  
or  Other (Name & Date): **P21—S07 – US View of the DS end of S07, P22—S07 –Facing US near middle of reach, P23—S07 – On-base cemetery – Catch basin is likely origin point of S07 before it crosses the road..**
- Previous determination(s). File no. and date of response letter: [redacted].
- Applicable/supporting case law: [redacted].
- Applicable/supporting scientific literature: [redacted].
- Other information (please specify): [redacted].

**B. ADDITIONAL COMMENTS TO SUPPORT JD:** According to the stream description submitted by the Consultant, SO7 originated from a culvert that collects runoff from the military cemetery. The channel flattens out and ends within an upland area.

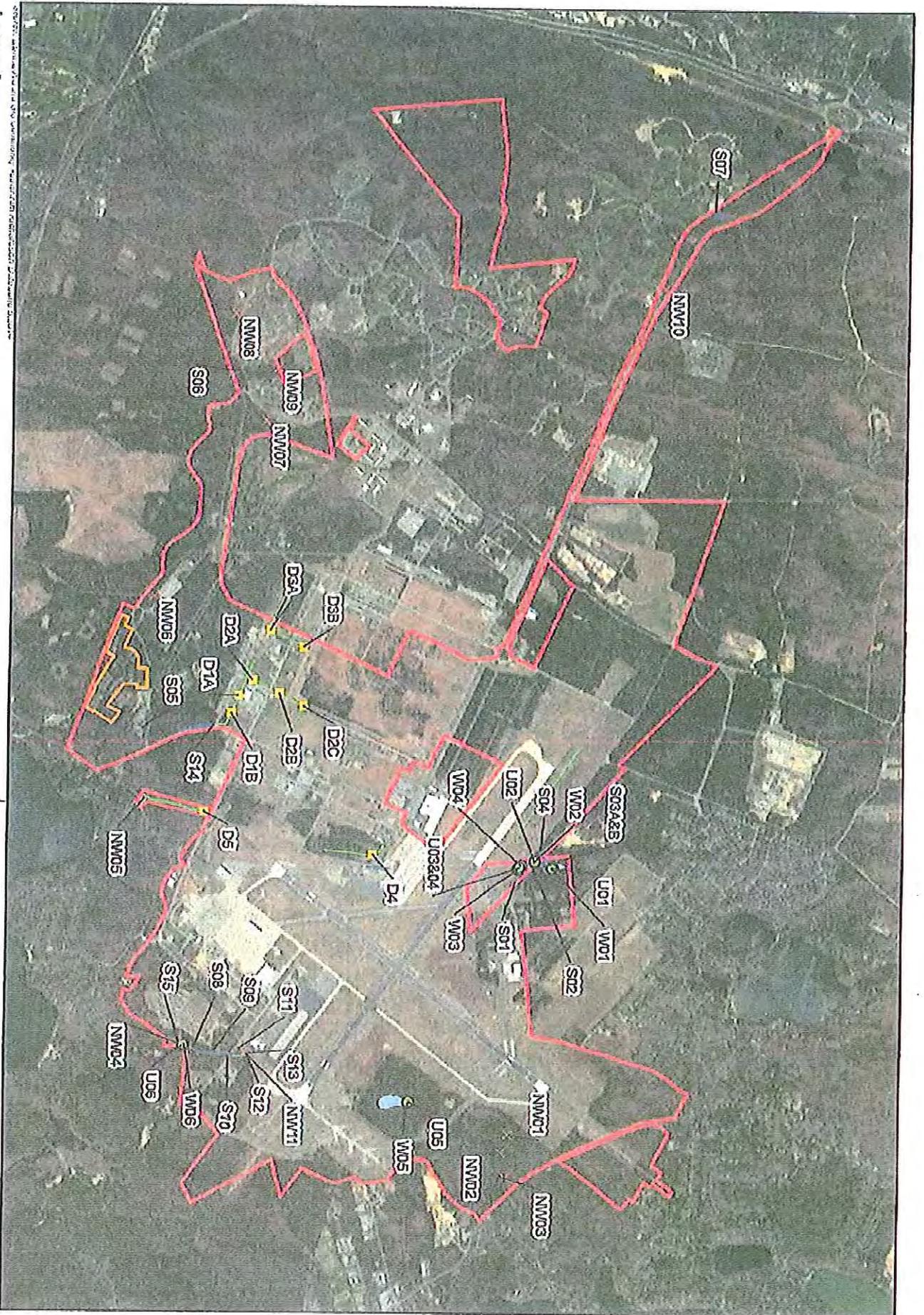
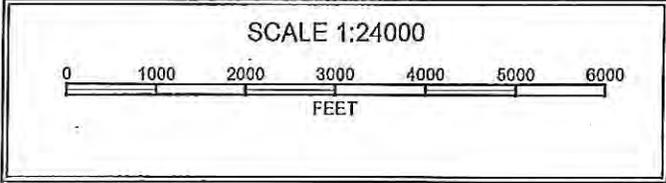
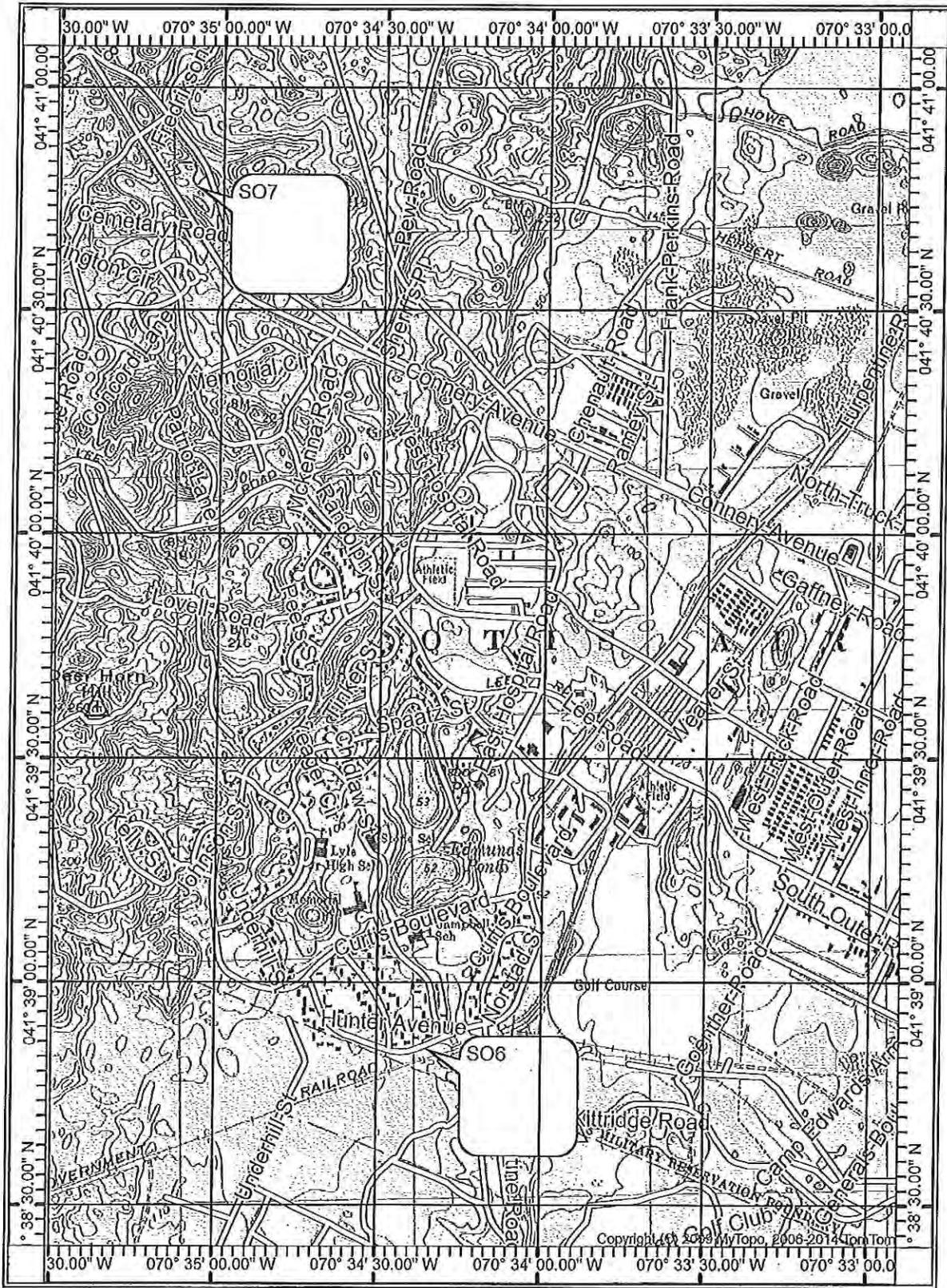
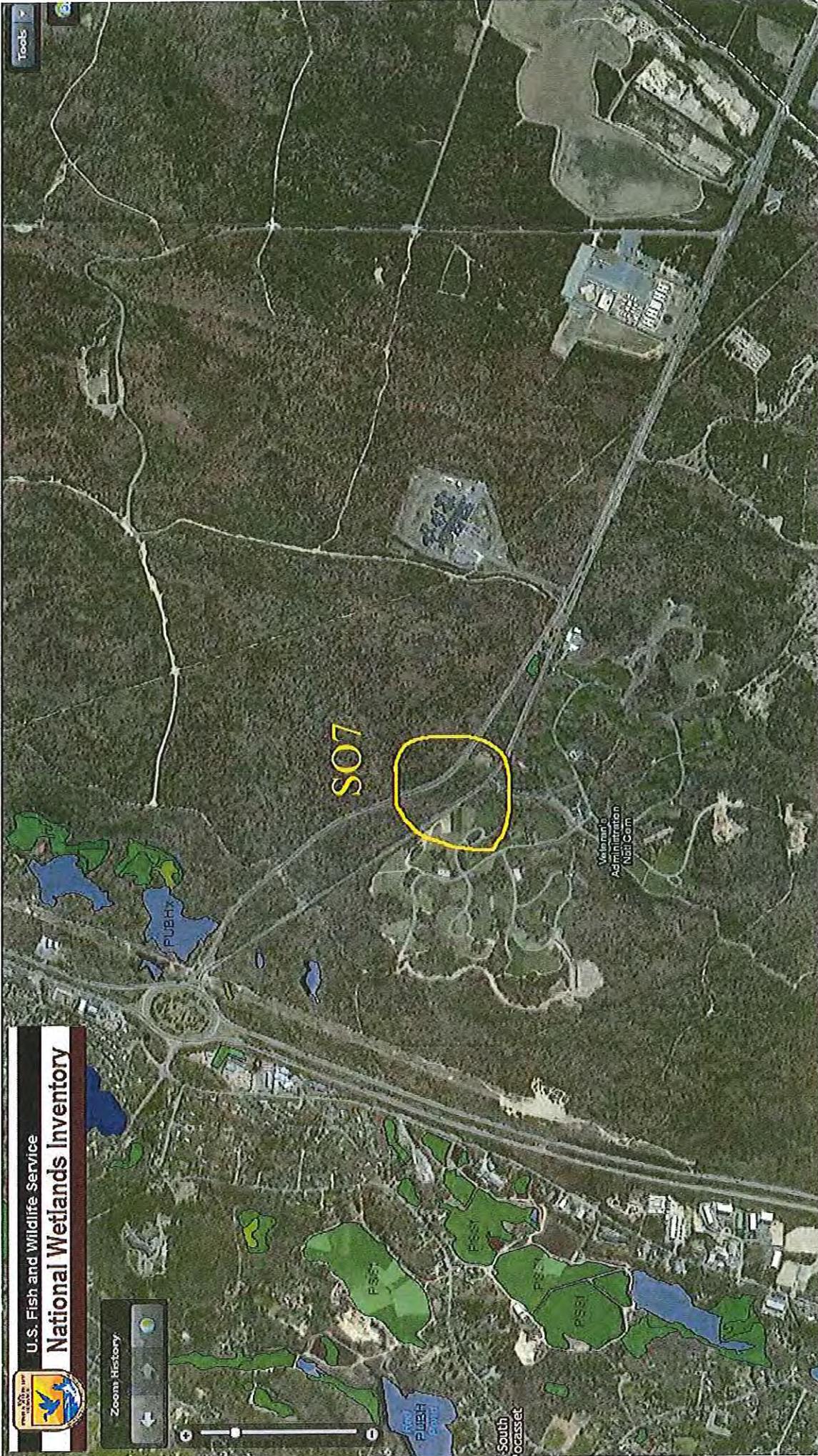


Figure 4A  
Overall View  
2014 Wetland Delineation  
Otis ANGB, MA



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Tools

U.S. Fish and Wildlife Service  
National Wetlands Inventory

Zoom History

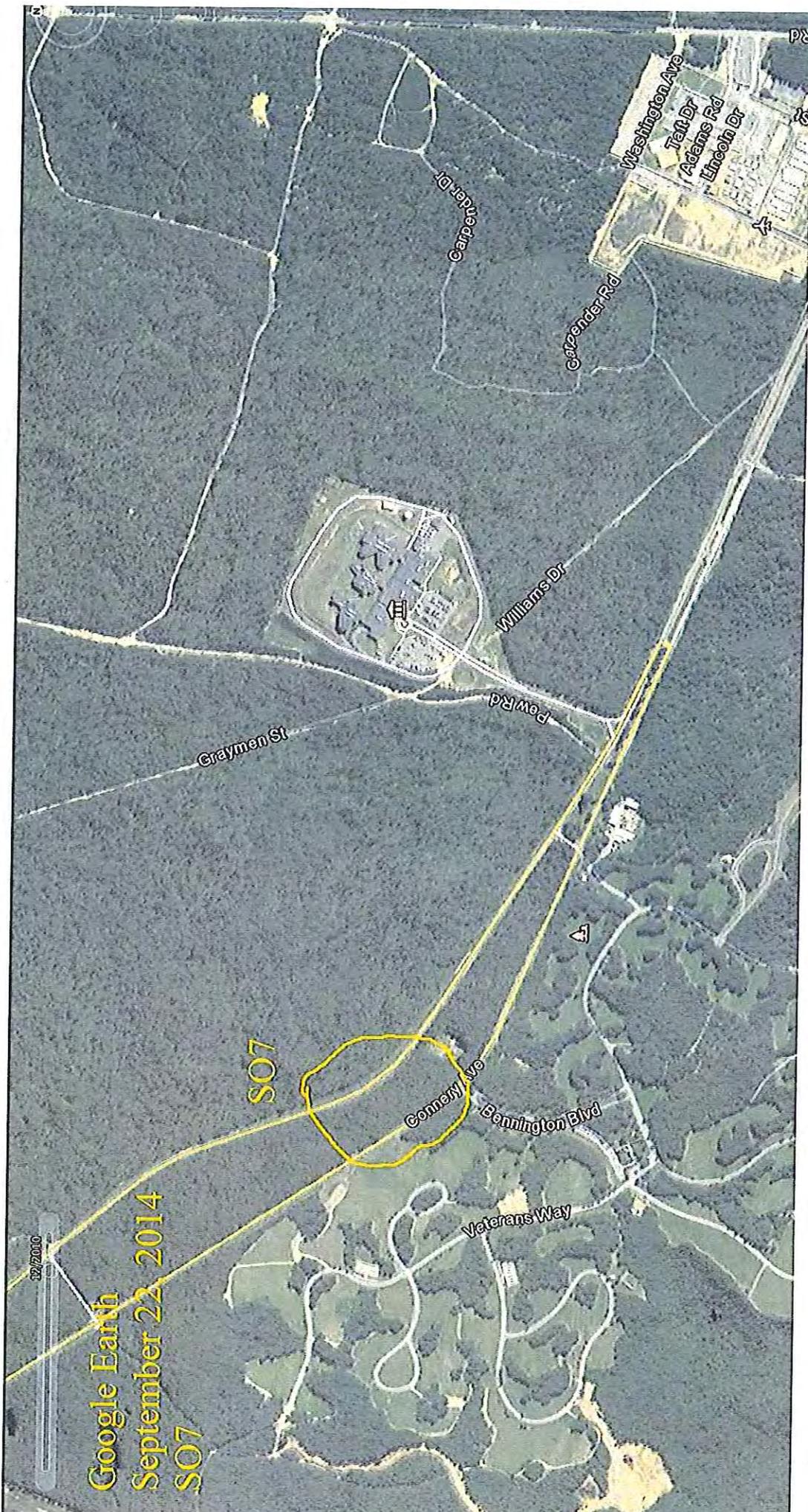


S07

Veteran's  
Administration  
Natl Cem

South  
Occasset

PUBHAY



32/2010

Google Earth  
September 22, 2014  
S07

P21—S07 – US View of the DS end of S07



P22—S07 –Facing US near middle of reach



P23—S07 – On-base cemetery – Catch basin is likely origin point of S07 before it crosses the road.



P24 – S08 – US View of S08



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

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

**SECTION I: BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): [REDACTED]

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: NAE-2014-01934 Otis Air National Guard Base, WO1

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: MA County/parish/borough: Barnstable County City: Buzzards Bay  
Center coordinates of site (lat/long in degree decimal format): Lat. 41d 40m 04.41s° N, Long. 070d 31m 47.76s° W.  
Universal Transverse Mercator: [REDACTED]

Name of nearest waterbody: Weeks Pond

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mashpee River

Name of watershed or Hydrologic Unit Code (HUC): Cape Cod

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

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

- Office (Desk) Determination. Date: July 31, 2014  
 Field Determination. Date(s): [REDACTED]

**SECTION II: SUMMARY OF FINDINGS**

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

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

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>

- TNWs, including territorial seas  
 Wetlands adjacent to TNWs  
 Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs  
 Non-RPWs that flow directly or indirectly into TNWs  
 Wetlands directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs  
 Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs  
 Impoundments of jurisdictional waters  
 Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: [REDACTED] linear feet: [REDACTED] width (ft) and/or [REDACTED] acres.  
Wetlands: [REDACTED] acres.

c. Limits (boundaries) of jurisdiction based on: Pick List

Elevation of established OHWM (if known): [REDACTED]

2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: Wetland is isolated as it is a closed system. The closest Non-TNW waterway is 3600 feet away (Weeks Pond).  
The closest Non-TNW flowing waterbody is 14,000 feet away (Mashpee River).

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

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

1. TNW  
Identify TNW: [redacted].  
  
Summarize rationale supporting determination: [redacted].
2. Wetland adjacent to TNW  
Summarize rationale supporting conclusion that wetland is "adjacent": [redacted].

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

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

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

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

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

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

- (i) General Area Conditions:  
Watershed size: [redacted] Pick List  
Drainage area: [redacted] Pick List  
Average annual rainfall: [redacted] inches  
Average annual snowfall: [redacted] inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

- Tributary flows directly into TNW.
- Tributary flows through Pick List tributaries before entering TNW.

Project waters are [redacted] river miles from TNW.  
Project waters are [redacted] river miles from RPW.  
Project waters are [redacted] aerial (straight) miles from TNW.  
Project waters are [redacted] aerial (straight) miles from RPW.  
Project waters cross or serve as state boundaries. Explain: [redacted].

Identify flow route to TNW<sup>5</sup>: [redacted].  
Tributary stream order, if known: [redacted].

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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

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

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

**Tributary properties with respect to top of bank (estimate):**

Average width:  feet  
Average depth:  feet  
Average side slopes: **Pick List**.

**Primary tributary substrate composition (check all that apply):**

- |   |   |                                   |
|---|---|-----------------------------------|
| <input type="checkbox"/> Silts                                | <input type="checkbox"/> Sands  | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles                              | <input type="checkbox"/> Gravel   | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock                              | <input type="checkbox"/> Vegetation. Type/% cover: <input type="text"/> |                                   |
| <input type="checkbox"/> Other. Explain: <input type="text"/> |   |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope):  %

(c) **Flow:**

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

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

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

Dye (or other) test performed:

**Tributary has (check all that apply):**

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

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

- |  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list): <input type="text"/>        |  |

(iii) **Chemical Characteristics:**

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

Explain:

Identify specific pollutants, if known:

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

<sup>7</sup>Ibid.

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: [redacted] acres

Wetland type. Explain: [redacted].

Wetland quality. Explain: [redacted].

Project wetlands cross or serve as state boundaries. Explain: [redacted].

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain: [redacted].

Surface flow is: Pick List

Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

Dye (or other) test performed: [redacted].

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: [redacted].

Ecological connection. Explain: [redacted].

Separated by berm/barrier. Explain: [redacted].

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

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

Flow is from: Pick List.

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

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known: [redacted].

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

Riparian buffer. Characteristics (type, average width): [redacted].

Vegetation type/percent cover. Explain: [redacted].

Habitat for:

Federally Listed species. Explain findings: [redacted].

Fish/spawn areas. Explain findings: [redacted].

Other environmentally-sensitive species. Explain findings: [redacted].

Aquatic/wildlife diversity. Explain findings: [redacted].

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

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

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

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

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

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: [redacted].
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [redacted].
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [redacted].

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

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:  
 TNWs: [redacted] linear feet [redacted] width (ft), Or, [redacted] acres.  
 Wetlands adjacent to TNWs: [redacted] acres.
2. RPWs that flow directly or indirectly into TNWs.  
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: [redacted].  
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: [redacted].

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
  - Other non-wetland waters: [redacted] acres.
- Identify type(s) of waters: [redacted].

3. **Non-RPW<sup>8</sup> that flow directly or indirectly into TNWs.**

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
  - Other non-wetland waters: [redacted] acres.
- Identify type(s) of waters: [redacted].

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

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

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

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

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

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

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

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

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

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

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

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

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

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

Identify water body and summarize rationale supporting determination: [redacted].

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
- Other non-wetland waters: [redacted] acres.  
Identify type(s) of waters: [redacted].
- Wetlands: [redacted] acres.

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

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **The wetland is a closed system located over 3,600 feet from the nearest body of water. The nexus has been cutoff from the distance between the wetland and the waterbody.**
- Other: (explain, if not covered above): [redacted].

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): [redacted] linear feet [redacted] width (ft).
- Lakes/ponds: [redacted] acres.
- Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].
- Wetlands: [redacted] acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): [redacted] linear feet, [redacted] width (ft).
- Lakes/ponds: [redacted] acres.
- Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].
- Wetlands: 0.92 acres.

**SECTION IV: DATA SOURCES.**

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

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Figure 4A.**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: [redacted].
- Corps navigable waters' study: [redacted].
- U.S. Geological Survey Hydrologic Atlas: [redacted].
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: **POCASSET, MA. & COTUIT, MASS. 1:25,000.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: [redacted].
- National wetlands inventory map(s). Cite name: **24k Quad Name: Pocasset.**
- State/Local wetland inventory map(s): [redacted].
- FEMA/FIRM maps: [redacted].
- 100-year Floodplain Elevation is: [redacted] (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Aerial View From Google Earth 3/2012.**  
or  Other (Name & Date): [redacted].
- Previous determination(s). File no. and date of response letter: [redacted].
- Applicable/supporting case law: [redacted].
- Applicable/supporting scientific literature: [redacted].
- Other information (please specify): [redacted].

**B. ADDITIONAL COMMENTS TO SUPPORT JD: There are minor mistakes in the delineation reports submitted by the Applicant however the errors do not change the outcome.**



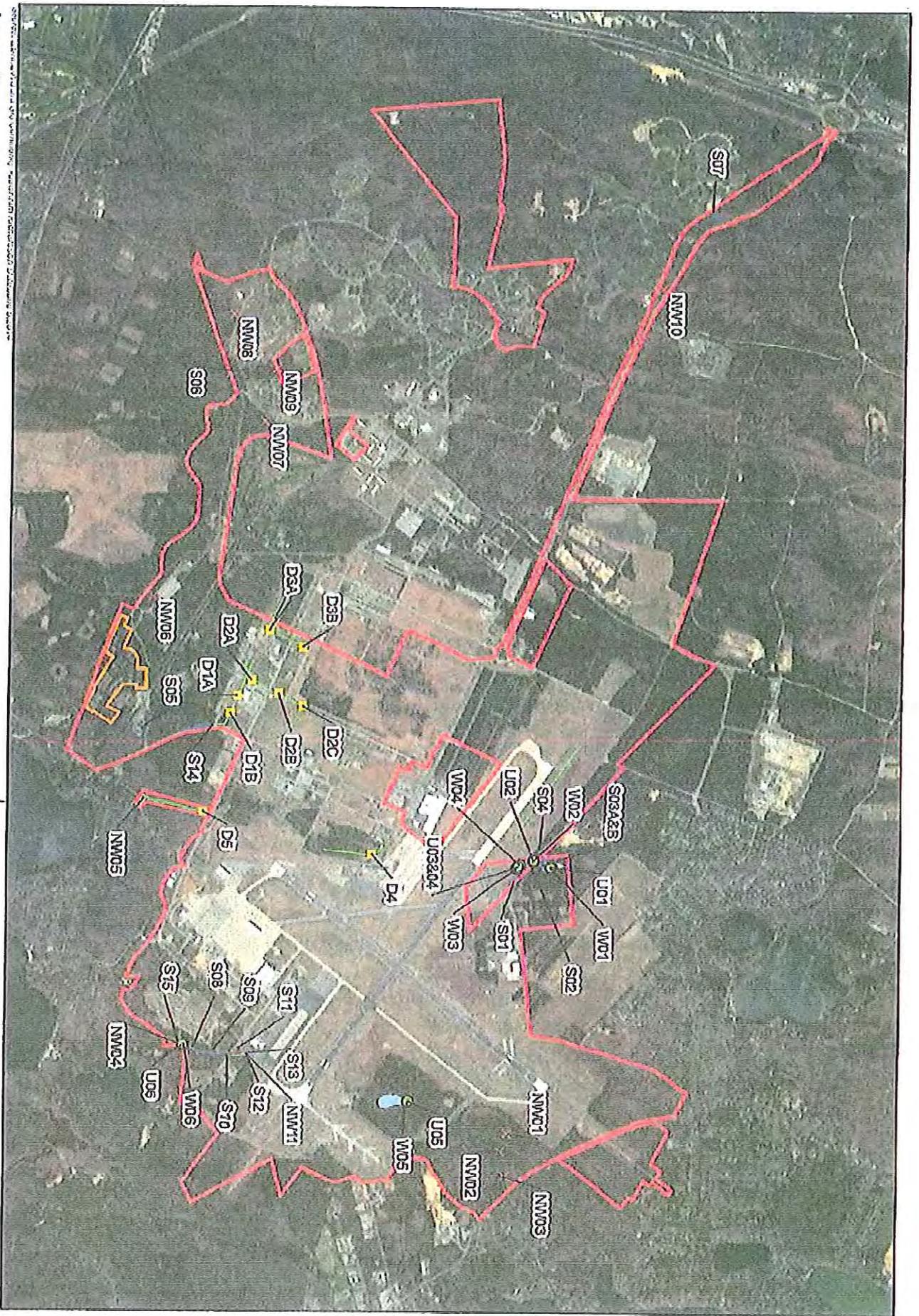


Figure 4A  
 Overall View  
 2014 Wetland Delineation  
 Otis ANGB, MA

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Otis ANGB City/County: Barnstable Sampling Date: May 16, 2014

Applicant/Owner: USACE Mobile District State: Massachusetts Sampling Point: W01

Investigator(s): Reaves/Jorgensen Section, Township, Range: \_\_\_\_\_

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

Slope (%): 2 Lat: 41° 40' 3.203" N Long: 70° 31' 46.928" W Datum: Lat/Long WGS 1984

Soil Map Unit Name: Hinckley gravelly sandy loam, 15 to 35 percent slopes NWI Classification: PEM/OW

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

Are Vegetation \_\_\_\_, Soil \_\_\_\_, or Hydrology \_\_\_\_ significantly disturbed? N Are "Normal Circumstances" present? Yes X No \_\_\_\_

Are Vegetation \_\_\_\_, Soil \_\_\_\_, or Hydrology \_\_\_\_ naturally problematic? N (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 <u>X</u> No ____ Hydric Soil Present? Yes <u>X</u> No ____ Wetland Hydrology Present? Yes <u>X</u> No ____	Is the Sampled Area within a Wetland? Yes <u>X</u> No ____ If yes, optional Wetland Site ID: _____
Remarks:   	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ____ Surface Water (A1)      ____ Water-Stained Leaves (B9) <u>X</u> High Water Table (A2)      ____ Aquatic Fauna (B13) <u>X</u> Saturation (A3)              ____ Marl Deposits (B15) ____ Water Marks (B1)          ____ Hydrogen Sulfide Odor (C1) ____ Sediment Deposits (B2)    ____ Oxidized Rhizospheres on Living Roots (C3) <u>X</u> Drift Deposits (B3)          ____ Presence of Reduced Iron (C4) ____ Algal Mat or Crust (B4)      ____ Recent Iron Reduction in Tilled Soils (C6) ____ Iron Deposits (B5)          ____ Thin Muck Surface (C7) ____ Inundation Visible on Aerial Imagery (B7)    ____ Other (Explain in Remarks) <u>X</u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ____ Surface Soil Cracks (B6) <u>X</u> Drainage Patterns (B10) <u>X</u> Moss Trim Lines (B16) ____ Dry-Season Water Table (C2) ____ Crayfish Burrows (C8) ____ Saturation Visible on Aerial Imagery (C9) ____ Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) ____ Shallow Aquitard (D3) <u>X</u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes ____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No ____ Depth (inches): <u>8</u> Saturation Present? Yes <u>X</u> No ____ Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No ____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  	
Remarks: Area in center of wetland contains open water and some aquatic vegetation.	

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

Sampling Point: W01

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____)				
1. <u>Salix bebbiana</u> (Bebb's willow)	50	Y	FACW	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
50	= Total Cover			
<b>Sapling/Shrub Stratum</b> (Plot size: 0 _____)				
1. <u>Vaccinium corymbosum</u> (high bush blueberry)	15	Y	FACW	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ X 2 = _____ FAC species _____ X 3 = _____ FACU species _____ X 4 = _____ UPL species _____ X 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
2. <u>Viburnum dentatum</u> (arrow-wood)	5		FAC	
3. <u>Spiraea alba</u> (white meadowsweet)	10	Y	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
30	= Total Cover			
<b>Herb Stratum</b> (Plot size: _____)				
1. <u>Unknown herbaceous plant</u>	2			<b>Hydrophytic Vegetation Indicators:</b> ___ Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% ___ Prevalence Test is ≤ 3.0 <sup>1</sup> <input checked="" type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Lonicera japonica</u> (Japanese honeysuckle)	4	Y	FAC	
3. <u>Rosa multiflora</u>	4	Y	FACU	
4. <u>Carex bicknellii</u>	5	Y	FAC	
5. <u>Potentilla canadensis</u>	2		NL	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
17	= Total Cover			
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
0	= Total Cover			

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

Dense adventitious roots on trees - 1-2 ft from ground surface.

**SOIL**

Sampling Point: W01

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
								Organic duff
0-4	7.5YR 3/1	100						Loamy sand
4-22	7.5YR 6/3	50						Loose sand
4-22	7.5YR 6/6	50						Loose sand

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>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<sup>3</sup>:**

- 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)

<sup>3</sup>Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?      Yes  No

**Remarks:**

Note soils in the inner part of the wetland (~40 feet into the wetland from sample point) were also problematic and consisted of:  
 Organic duff  
 0-16 10YR 4/2 40% - sand with gravel  
 0-16 10YR 4/4 60% - sand with gravel

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Otis ANGB City/County: Barnstable Sampling Date: May 16, 2014  
 Applicant/Owner: USACE Mobile District State: Massachusetts Sampling Point: U01  
 Investigator(s): Reaves/Jorgensen Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.) Hillslope Local relief (concave, convex, none): none  
 Slope (%): 2 Lat: 41° 40' 2.879" N Long: 70° 31' 47.069" W Datum: Lat/Long WGS 1984  
 Soil Map Unit Name: Hinckley gravelly sandy loam, 15 to 35 percent slopes NWI Classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? N Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? N (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 <u>X</u> Hydric Soil Present?                      Yes _____ No <u>X</u> Wetland Hydrology Present?            Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland?      Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1)                      _____ Water-Stained Leaves (B9) _____ High Water Table (A2)                    _____ Aquatic Fauna (B13) _____ Saturation (A3)                                _____ Marl Deposits (B15) _____ Water Marks (B1)                              _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2)                    _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3)                            _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4)                      _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5)                             _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<b>Secondary Indicators (minimum of two required)</b> _____ 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)
<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: U01

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Quercus alba</i> (white oak)	30	Y	FACU
2. <i>Pinus rigida</i> (pitch pine)	40	Y	FACU
3. <i>Quercus coccinea</i>	10		NR
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 0 _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Virburnum dentatum</i> (arrow-wood)	10	Y	FAC
2. <i>Prunus pennsylvanica</i> (fire cherry)	5	Y	FACU
3. <i>Lonicera morrowii</i> (Morrow's honeysuckle)	8	Y	FACU
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	_____	= Total Cover	

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	_____	= Total Cover	

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Toxicodendron radicans</i> (Poison ivy)	10	Y	FAC
2. <i>Parthenocissus quinquefolia</i> (Va creeper)	2		FACU
3. <i>Smilax glauca</i> (cat greenbrier)	2		FACU
4. _____	_____	_____	_____
	0	= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>87</u>	x 4 = <u>348</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>107</u>	(A) <u>408</u> (B)

Prevalence Index = B/A = 3.8

**Hydrophytic Vegetation Indicators:**

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Test is ≤ 3.0<sup>1</sup>

Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes  No

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

**SOIL**

Sampling Point: U01

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	7.5YR 6/2	50			N/A	N/A	Loamy sand	
0-4	7.5YR 5/6	50			N/A	N/A	Loamy sand	
4-14	7.5YR 6/6	100					Loose sand	
14-16	10YR 4/3	95	7.5YR 5/8	5	C	PL, M	Silty clay (no sand) – potential restrictive layer	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>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<sup>3</sup>:**

- 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)

<sup>3</sup>Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

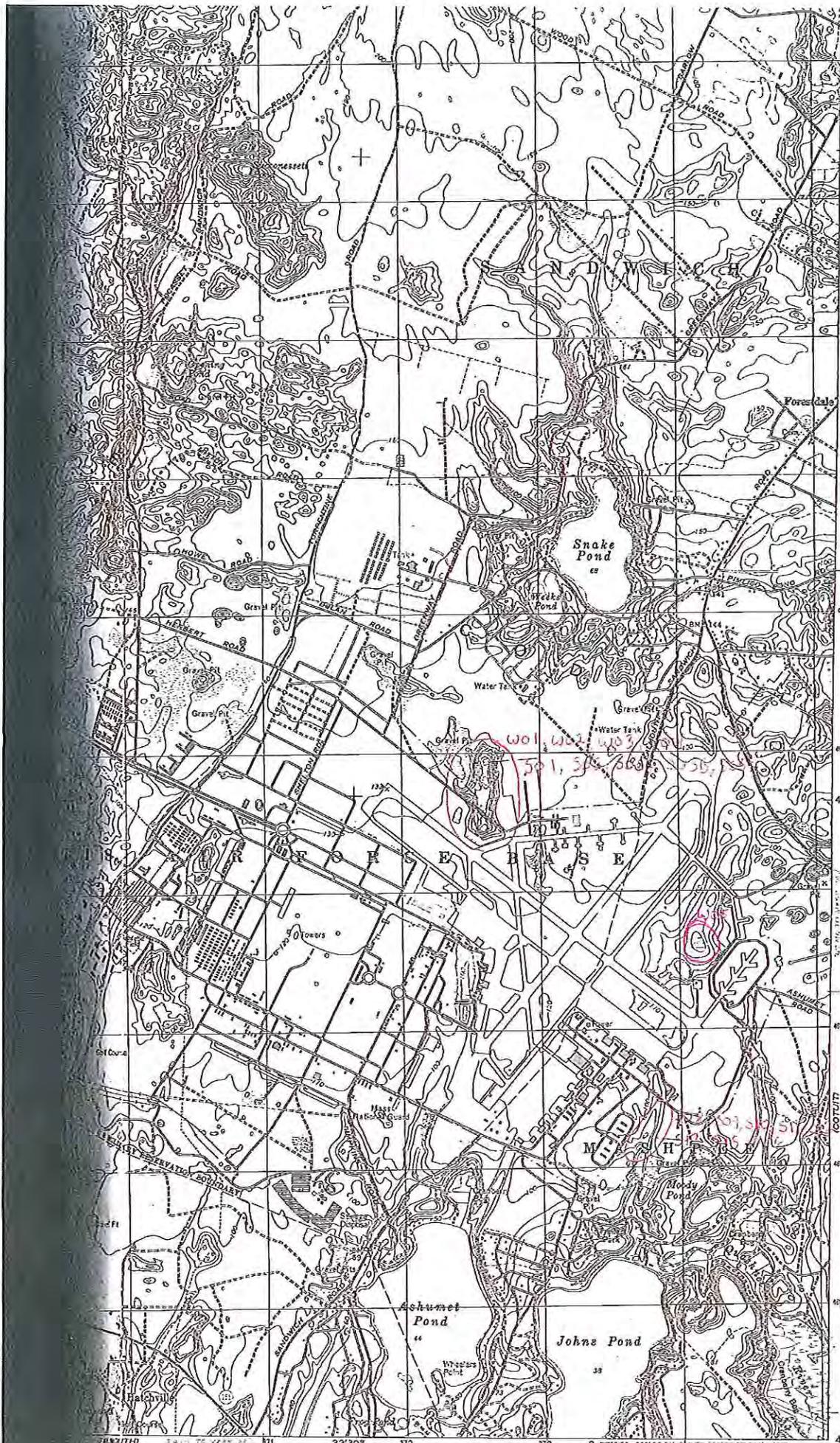
Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?

Yes \_\_\_\_\_ No   X  

**Remarks:**

14-16 inch layer has a thin red boundary/line (maybe redox) at both the top and bottom of the layer.



Feet	Meters
1	3048
2	6096
3	9144
4	12192
5	15240
6	18288
7	21286
8	24284
9	27282
10	30280

To convert feet to meters multiply by 30.48  
 To convert meters to feet multiply by 3.2808



U.S. Fish and Wildlife Service  
National Wetlands Inventory

Zoom History



Wetland

Zoom To Feature

Opacity:

Classification Code: PSS1E ( [Legend](#) )  
Wetland Type: Freshwater Forested/Shrub Wetland  
Acres: 1.58  
Status: Digital  
Image Date(s): 04/91, 04/92, 00/99  
Source Type: CIR  
Image Scale: 40000  
24k Quad Name: Pocasset  
100k Quad Name: NEW BEDFORD  
Project Metadata: [click here](#)  
Historic Map Info: [click here](#)  
FGDC Metadata: [click here](#)

W01

Sandwich  
Mashpee



Aerial View From Google Earth 3/2012

Click to travel back in time.  
1991 2012

Country Rd

WO1

Herbert Rd



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

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

**SECTION I: BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:  County/parish/borough:  City:   
Center coordinates of site (lat/long in degree decimal format): Lat.  N, Long.  W.  
Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows:

Name of watershed or Hydrologic Unit Code (HUC):

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

Office (Desk) Determination. Date:

Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters:  linear feet:  width (ft) and/or  acres.

Wetlands:  acres.

c. Limits (boundaries) of jurisdiction based on:

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain:

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

### SECTION III: CWA ANALYSIS

#### A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. TNW  
Identify TNW: [REDACTED].  
  
Summarize rationale supporting determination: [REDACTED].
2. Wetland adjacent to TNW  
Summarize rationale supporting conclusion that wetland is "adjacent": [REDACTED].

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

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

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

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

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

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

###### (i) General Area Conditions:

Watershed size: [REDACTED] Pick List  
Drainage area: [REDACTED] Pick List  
Average annual rainfall: [REDACTED] inches  
Average annual snowfall: [REDACTED] inches

###### (ii) Physical Characteristics:

###### (a) Relationship with TNW:

- Tributary flows directly into TNW.  
 Tributary flows through Pick List tributaries before entering TNW.

Project waters are [REDACTED] river miles from TNW.  
Project waters are [REDACTED] river miles from RPW.  
Project waters are [REDACTED] aerial (straight) miles from TNW.  
Project waters are [REDACTED] aerial (straight) miles from RPW.  
Project waters cross or serve as state boundaries. Explain: [REDACTED].

Identify flow route to TNW<sup>5</sup>: [REDACTED].  
Tributary stream order, if known: [REDACTED].

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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

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

- Tributary is:  Natural  
 Artificial (man-made). Explain: [redacted]  
 Manipulated (man-altered). Explain: [redacted]

Tributary properties with respect to top of bank (estimate):

- Average width: [redacted] feet  
Average depth: [redacted] feet  
Average side slopes: Pick List.

Primary tributary substrate composition (check all that apply):

- |   |   |                                   |
|---|---|-----------------------------------|
| <input type="checkbox"/> Silts                      | <input type="checkbox"/> Sands                                | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles                    | <input type="checkbox"/> Gravel                               | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock                    | <input type="checkbox"/> Vegetation. Type/% cover: [redacted] |                                   |
| <input type="checkbox"/> Other. Explain: [redacted] |   |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: [redacted]

Presence of run/riffle/pool complexes. Explain: [redacted]

Tributary geometry: Pick List

Tributary gradient (approximate average slope): [redacted] %

(c) Flow:

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime: [redacted]

Other information on duration and volume: [redacted]

Surface flow is: Pick List. Characteristics: [redacted]

Subsurface flow: Pick List. Explain findings: [redacted]

Dye (or other) test performed: [redacted]

Tributary has (check all that apply):

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

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

- |  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list): [redacted]                  |  |

(iii) Chemical Characteristics:

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

Explain: [redacted]

Identify specific pollutants, if known: [redacted]

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

<sup>7</sup>Ibid.

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: [redacted] acres

Wetland type. Explain: [redacted].

Wetland quality. Explain: [redacted].

Project wetlands cross or serve as state boundaries. Explain: [redacted].

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain: [redacted].

Surface flow is: Pick List

Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

Dye (or other) test performed: [redacted].

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: [redacted].

Ecological connection. Explain: [redacted].

Separated by berm/barrier. Explain: [redacted].

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

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

Flow is from: Pick List.

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

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known: [redacted].

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

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

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

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

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

For each wetland, specify the following:

Directly abuts? (Y/N)

[Redacted]

Size (in acres)

[Redacted]

Directly abuts? (Y/N)

[Redacted]

Size (in acres)

[Redacted]

Summarize overall biological, chemical and physical functions being performed: [Redacted]

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: [Redacted].
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [Redacted].
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [Redacted].

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

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:
  - TNWs: [Redacted] linear feet [Redacted] width (ft), Or, [Redacted] acres.
  - Wetlands adjacent to TNWs: [Redacted] acres.
2. RPWs that flow directly or indirectly into TNWs.
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: [Redacted].
  - Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: [Redacted].

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
  - Other non-wetland waters: [redacted] acres.
- Identify type(s) of waters: [redacted].

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
  - Other non-wetland waters: [redacted] acres.
- Identify type(s) of waters: [redacted].

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

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

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

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

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

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

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

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

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

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

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

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

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

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

Identify water body and summarize rationale supporting determination: [redacted].

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

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

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

- Tributary waters: \_\_\_\_\_ linear feet \_\_\_\_\_ width (ft).
- Other non-wetland waters: \_\_\_\_\_ acres.  
Identify type(s) of waters: \_\_\_\_\_.
- Wetlands: \_\_\_\_\_ acres.

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

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
  - Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: The wetland is a closed system located over 4,500 feet from the nearest body of water. The nexus has been cutoff from the distance between the wetland and the waterbody.
- Other: (explain, if not covered above): \_\_\_\_\_.

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): \_\_\_\_\_ linear feet \_\_\_\_\_ width (ft).
- Lakes/ponds: \_\_\_\_\_ acres.
- Other non-wetland waters: \_\_\_\_\_ acres. List type of aquatic resource: \_\_\_\_\_.
- Wetlands: \_\_\_\_\_ acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): \_\_\_\_\_ linear feet, \_\_\_\_\_ width (ft).
- Lakes/ponds: \_\_\_\_\_ acres.
- Other non-wetland waters: \_\_\_\_\_ acres. List type of aquatic resource: \_\_\_\_\_.
- Wetlands: 0.02 acres.

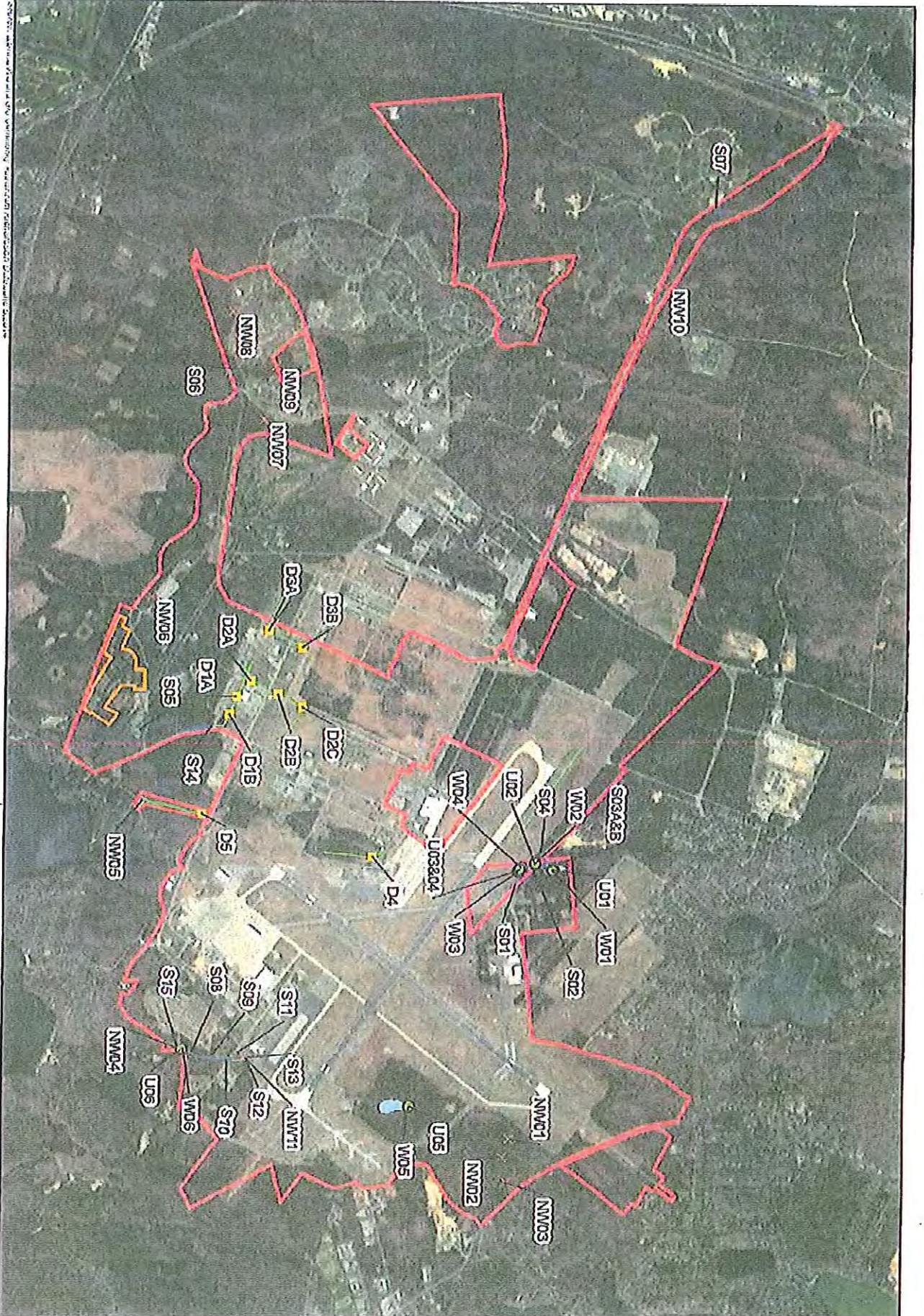
**SECTION IV: DATA SOURCES.**

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

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Figure 4B.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: \_\_\_\_\_.
- Corps navigable waters' study: \_\_\_\_\_.
- U.S. Geological Survey Hydrologic Atlas: \_\_\_\_\_.
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: POCASSET, MA. 1:25,000.
- USDA Natural Resources Conservation Service Soil Survey. Citation: \_\_\_\_\_.
- National wetlands inventory map(s). Cite name: 24k Quad Name: Pocasset.
- State/Local wetland inventory map(s): \_\_\_\_\_.
- FEMA/FIRM maps: \_\_\_\_\_.
- 100-year Floodplain Elevation is: \_\_\_\_\_ (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): Aerial View From Google Earth 3/2012.  
or  Other (Name & Date): \_\_\_\_\_.
- Previous determination(s). File no. and date of response letter: \_\_\_\_\_.
- Applicable/supporting case law: \_\_\_\_\_.
- Applicable/supporting scientific literature: \_\_\_\_\_.
- Other information (please specify): \_\_\_\_\_.

**B. ADDITIONAL COMMENTS TO SUPPORT JD:** There are minor mistakes in the delineation reports submitted by the Applicant however the errors do not change the outcome.

- Legend**
- Wetlands
  - Streams
  - Stormwater Channels
  - Wetland Points
  - Upland Points
  - Non-Water Verification Points
  - Otis Survey Boundary
  - Old Pond/Lagoon Area
  - Ditch Points



**Figure 4A**  
 Overall View  
 2014 Wetland Delineation  
 Otis ANGB, MA





Aerial View From Google Earth 3/2012

W02

W03 & W04

3/2012

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Olis ANGB City/County: Barnstable Sampling Date: May 14, 2014  
 Applicant/Owner: USACE Mobile District State: Massachusetts Sampling Point: W02  
 Investigator(s): Reaves/Jorgensen Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.) Valley bottom Local relief (concave, convex, none): concave  
 Slope (%): 2 Lat: 41° 39' 58.998" N Long: 70° 31' 48.938" W Datum: Lat/Long WGS 1984  
 Soil Map Unit Name: Hinckley gravelly sandy loam, 15 to 35 percent slopes NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? N Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  naturally problematic? N (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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
---	--

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	--

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

Remarks:  
 Fed by culvert draining airfield, actively flowing <1cfs. Flow appears seasonal.

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

Sampling Point: W02

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>0</u>	= Total Cover	

Sapling/Shrub Stratum (Plot size: <u>0</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	_____	= Total Cover	

Herb Stratum (Plot size: 30' x 8')	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Typha latifolia (broad-leaf cattail)</u>	<u>70</u>	<u>Y</u>	<u>OBL</u>
2. <u>Onoclea sensibilis (sensitive fern)</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>110</u>	= Total Cover	

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	<u>0</u>	= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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 _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

\_\_\_\_ Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

\_\_\_\_ Prevalence Test is ≤ 3.0<sup>1</sup>

\_\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes	No
	<u>X</u>	_____

Remarks: (Include photo numbers here or on a separate sheet.)  
 Equisetum fluviatile (Water Horsetail, OBL) occurs outside sample plot.

**SOIL**

Sampling Point: W02

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-20+	Gley 1 2.5 10Y	100			N/A	N/A	Loamy Sand	

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

- |   |  |  |  |
|---|--|--|--|
| <b>Hydric Soil Indicators:</b>                                |  | <b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>          |  |
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |  |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |  |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |  |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        | <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |  |
| <input type="checkbox"/> Stratified Layers (A5)               | <input type="checkbox"/> Depleted Matrix (F3)                            | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |  |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |  |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)   |  |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)             | <input type="checkbox"/> Redox Depressions (F8)                          | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |  |
| <input checked="" type="checkbox"/> Sandy Gleyed Matrix (S4)  |  | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  | <input type="checkbox"/> Red Parent Material (TF2)                   |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  | <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  | <input type="checkbox"/> Other (Explain in Remarks)                  |  |

<sup>3</sup>Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Otis ANGB City/County: Barnstable Sampling Date: May 14, 2014  
 Applicant/Owner: USACE Mobile District State: Massachusetts Sampling Point: U02  
 Investigator(s): Reaves/Jorgensen Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.) Hillslope/terrace Local relief (concave, convex, none): none  
 Slope (%): 4 Lat: 41° 39' 59.145" N Long: 70° 31' 49.040" W Datum: Lat/Long WGS 1984  
 Soil Map Unit Name: Hinckley gravelly sandy loam, 15 to 35 percent slopes NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_, Soil \_\_\_\_, or Hydrology \_\_\_\_ significantly disturbed? N Are "Normal Circumstances" present? Yes X No \_\_\_\_  
 Are Vegetation \_\_\_\_, Soil \_\_\_\_, or Hydrology \_\_\_\_ naturally problematic? N (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 <u>X</u> Hydric Soil Present?                      Yes ____ No <u>X</u> Wetland Hydrology Present?            Yes ____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes ____ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ____ Surface Water (A1)                      ____ Water-Stained Leaves (B9) ____ High Water Table (A2)                  ____ Aquatic Fauna (B13) ____ Saturation (A3)                              ____ Marl Deposits (B15) ____ Water Marks (B1)                            ____ Hydrogen Sulfide Odor (C1) ____ Sediment Deposits (B2)                  ____ Oxidized Rhizospheres on Living Roots (C3) ____ Drift Deposits (B3)                          ____ Presence of Reduced Iron (C4) ____ Algal Mat or Crust (B4)                      ____ Recent Iron Reduction in Tilled Soils (C6) ____ Iron Deposits (B5)                            ____ Thin Muck Surface (C7) ____ Inundation Visible on Aerial Imagery (B7)    ____ Other (Explain in Remarks) ____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ____ 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)
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<b>Field Observations:</b> Surface Water Present?    Yes ____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes ____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes ____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes ____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: U02

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>0</u>	= Total Cover	

Sapling/Shrub Stratum (Plot size: <u>0</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	_____	= Total Cover	

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Andropogon virginicus</i> (Broom-sedge)	20	Y	FACU
2. <i>Pinus rigida</i> (pitch pine)	10	Y	FACU
3. <i>Potentilla simplex</i> (old field cinquefoil)	10	Y	FACU
4. <i>Trifolium repens</i> (white clover)	5		FACU
5. <i>Rubus argutus</i> (serrate-leaf blackberry)	3		FACU
6. <i>Betula lenta</i> (sweet birch)	1		FACU
7. <i>Vaccinium angustifolium</i> (lowbush blueberry)	1		FACU
8. <i>Solidago</i> sp.	5		Unk
9. <i>Potentilla canadensis</i>	2		NR
10. <i>Mnium</i> sp. (unknown moss)	30		NR
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>87</u>	= Total Cover	

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	<u>0</u>	= 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: 3 (B)

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

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>50</u>	(A) <u>200</u> (B)

Prevalence Index = B/A = 4

**Hydrophytic Vegetation Indicators:**

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Test is ≤ 3.0<sup>1</sup>

Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

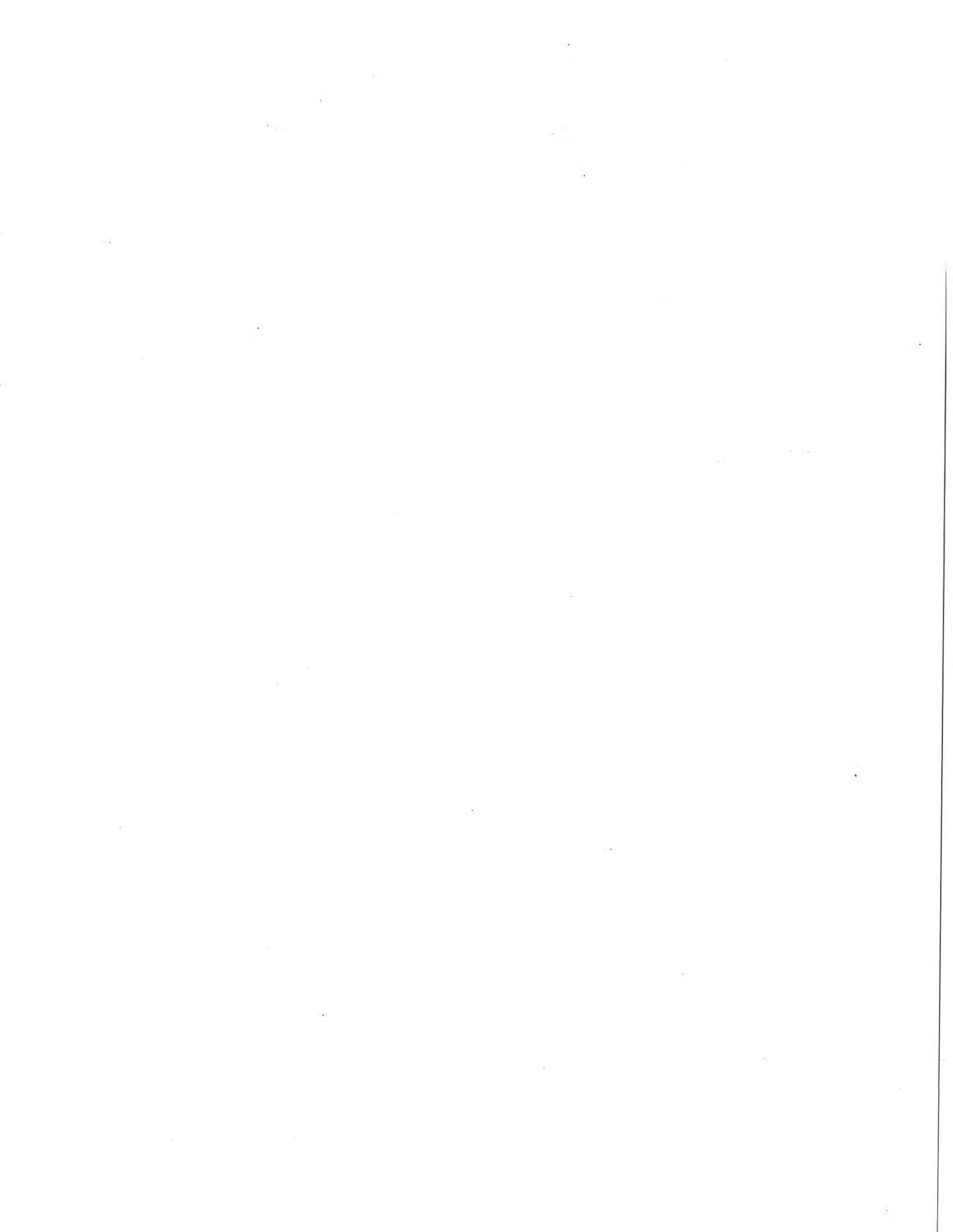
Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

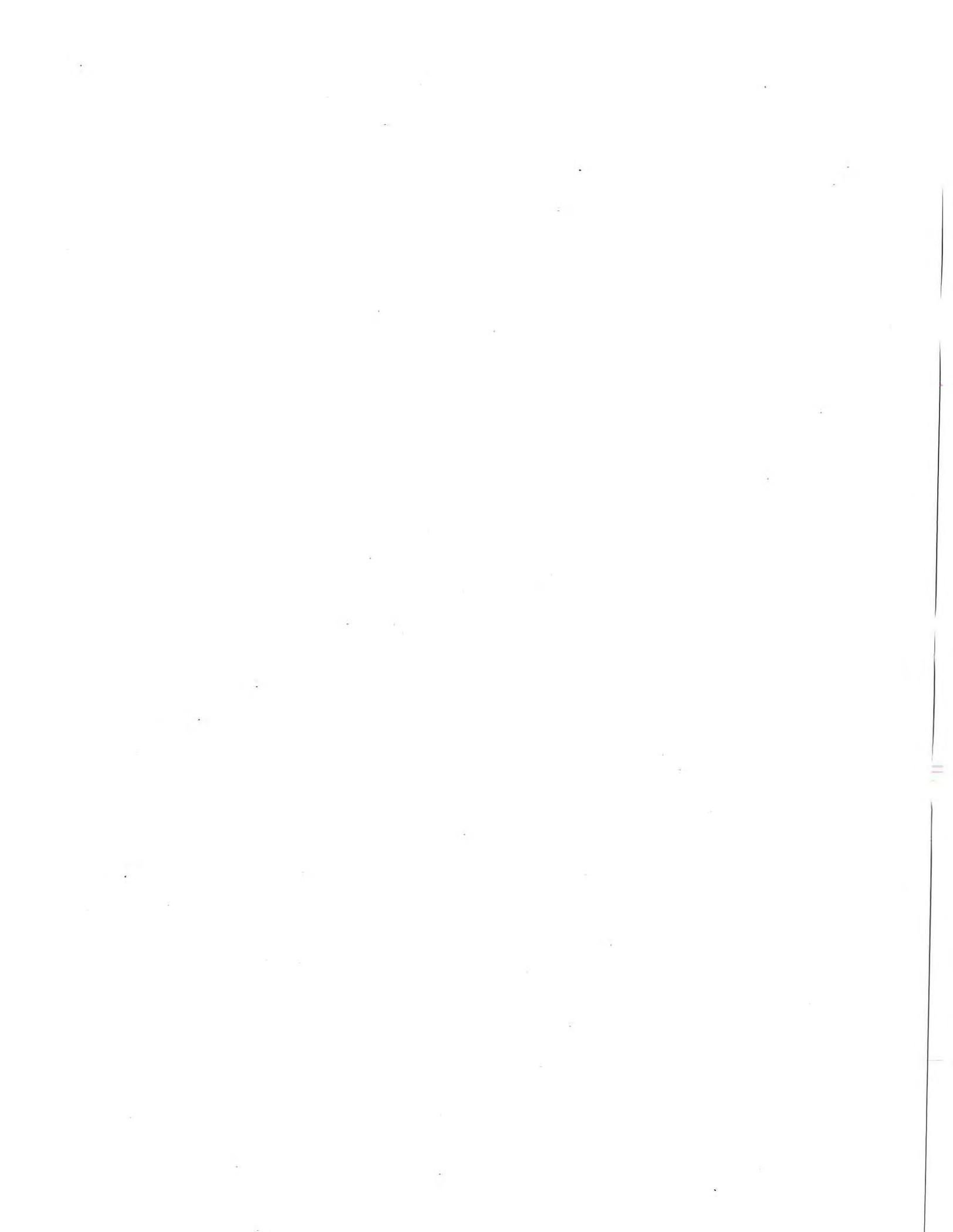
**Hydrophytic Vegetation Present?**

Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)  
 Upland point taken in the perimeter controlled area (maintained as herbaceous).







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

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

**SECTION I: BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):  Dec 23, 2014

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: NAE-2014-01934 Otis Air National Guard Base, WO3

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: MA County/parish/borough: Barnstable County City: Buzzards Bay  
Center coordinates of site (lat/long in degree decimal format): Lat. 41d 39m 55.15s° N, Long. 070d 31m 46.75s° W.  
Universal Transverse Mercator:

Name of nearest waterbody: Weeks Pond

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mashpee River

Name of watershed or Hydrologic Unit Code (HUC): Cape Cod

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

Office (Desk) Determination. Date: August 5, 2014

Field Determination. Date(s): August 13, 2014

**SECTION II: SUMMARY OF FINDINGS**

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters:  linear feet:  width (ft) and/or  acres.

Wetlands:  acres.

c. Limits (boundaries) of jurisdiction based on: Pick List

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain: Wetland is isolated as it is a closed system. The closest Non-TNW waterway is 4850 feet away (Weeks Pond).  
The closest Non-TNW flowing waterbody is 13,550 feet away (Mashpee River).

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

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

- 1. TNW  
Identify TNW: [redacted].  
  
Summarize rationale supporting determination: [redacted].
- 2. Wetland adjacent to TNW  
Summarize rationale supporting conclusion that wetland is "adjacent": [redacted].

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

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

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

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

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

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

- (i) General Area Conditions:  
Watershed size: [redacted] Pick List  
Drainage area: [redacted] Pick List  
Average annual rainfall: [redacted] inches  
Average annual snowfall: [redacted] inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

- Tributary flows directly into TNW.
- Tributary flows through Pick List tributaries before entering TNW.

Project waters are [redacted] river miles from TNW.  
Project waters are [redacted] river miles from RPW.  
Project waters are [redacted] aerial (straight) miles from TNW.  
Project waters are [redacted] aerial (straight) miles from RPW.  
Project waters cross or serve as state boundaries. Explain: [redacted].

Identify flow route to TNW<sup>5</sup>: [redacted].  
Tributary stream order, if known: [redacted].

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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

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

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

Tributary properties with respect to top of bank (estimate):

- Average width:  feet  
Average depth:  feet  
Average side slopes: Pick List.

Primary tributary substrate composition (check all that apply):

- |   |   |                                   |
|---|---|-----------------------------------|
| <input type="checkbox"/> Silts                                | <input type="checkbox"/> Sands  | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles                              | <input type="checkbox"/> Gravel   | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock                              | <input type="checkbox"/> Vegetation. Type/% cover: <input type="text"/> |                                   |
| <input type="checkbox"/> Other. Explain: <input type="text"/> |   |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: Pick List

Tributary gradient (approximate average slope):  %

(c) Flow:

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime:

Other information on duration and volume:

Surface flow is: Pick List. Characteristics:

Subsurface flow: Pick List. Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

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

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

- |  |  |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by:              | <input type="checkbox"/> Mean High Water Mark indicated by:            |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list): <input type="text"/>        |  |

(iii) Chemical Characteristics:

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

Explain:

Identify specific pollutants, if known:

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

<sup>7</sup>ibid.

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

- Wetland size: [redacted] acres
- Wetland type. Explain: [redacted].
- Wetland quality. Explain: [redacted].

Project wetlands cross or serve as state boundaries. Explain: [redacted].

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain: [redacted].

Surface flow is: Pick List  
Characteristics: [redacted].

Subsurface flow: Pick List. Explain findings: [redacted].

- Dye (or other) test performed: [redacted].

(c) Wetland Adjacency Determination with Non-TNW:

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

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.  
Project waters are Pick List aerial (straight) miles from TNW.  
Flow is from: Pick List.  
Estimate approximate location of wetland as within the Pick List floodplain.

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known: [redacted].

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

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

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

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

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

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: [REDACTED].
2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [REDACTED].
3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: [REDACTED].

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

1. TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:
  - TNWs: [REDACTED] linear feet [REDACTED] width (ft), Or, [REDACTED] acres.
  - Wetlands adjacent to TNWs: [REDACTED] acres.
2. RPWs that flow directly or indirectly into TNWs.
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: [REDACTED].
  - Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: [REDACTED].

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
  - Other non-wetland waters: [redacted] acres.
- Identify type(s) of waters: [redacted].

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
  - Other non-wetland waters: [redacted] acres.
- Identify type(s) of waters: [redacted].

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

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

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

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

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

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

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

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

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

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

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

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

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

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

Identify water body and summarize rationale supporting determination: [redacted].

<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

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

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

- Tributary waters: [redacted] linear feet [redacted] width (ft).
- Other non-wetland waters: [redacted] acres.  
Identify type(s) of waters: [redacted].
- Wetlands: [redacted] acres.

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

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
  - Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **The wetland is a closed system located over 4,850 feet from the nearest body of water. The nexus has been cutoff from the distance between the wetland and the waterbody.**
  - Other: (explain, if not covered above): [redacted].

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): [redacted] linear feet [redacted] width (ft).
- Lakes/ponds: [redacted] acres.
- Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].
- Wetlands: [redacted] acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): [redacted] linear feet, [redacted] width (ft).
- Lakes/ponds: [redacted] acres.
- Other non-wetland waters: [redacted] acres. List type of aquatic resource: [redacted].
- Wetlands: 0.05 acres.

**SECTION IV: DATA SOURCES.**

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

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Figure 4A.**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: [redacted].
- Corps navigable waters' study: [redacted].
- U.S. Geological Survey Hydrologic Atlas: [redacted].
- USGS NHD data.
- USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: **POCASSET, MA. 1:25,000.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: [redacted].
- National wetlands inventory map(s). Cite name: **24k Quad Name: Pocasset.**
- State/Local wetland inventory map(s): [redacted].
- FEMA/FIRM maps: [redacted].
- 100-year Floodplain Elevation is: [redacted] (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Aerial View From Google Earth 3/2012.**  
or  Other (Name & Date): [redacted].
- Previous determination(s). File no. and date of response letter: [redacted].
- Applicable/supporting case law: [redacted].
- Applicable/supporting scientific literature: [redacted].
- Other information (please specify): [redacted].

**B. ADDITIONAL COMMENTS TO SUPPORT JD:** There are minor mistakes in the delineation reports submitted by the Applicant however the errors do not change the outcome.

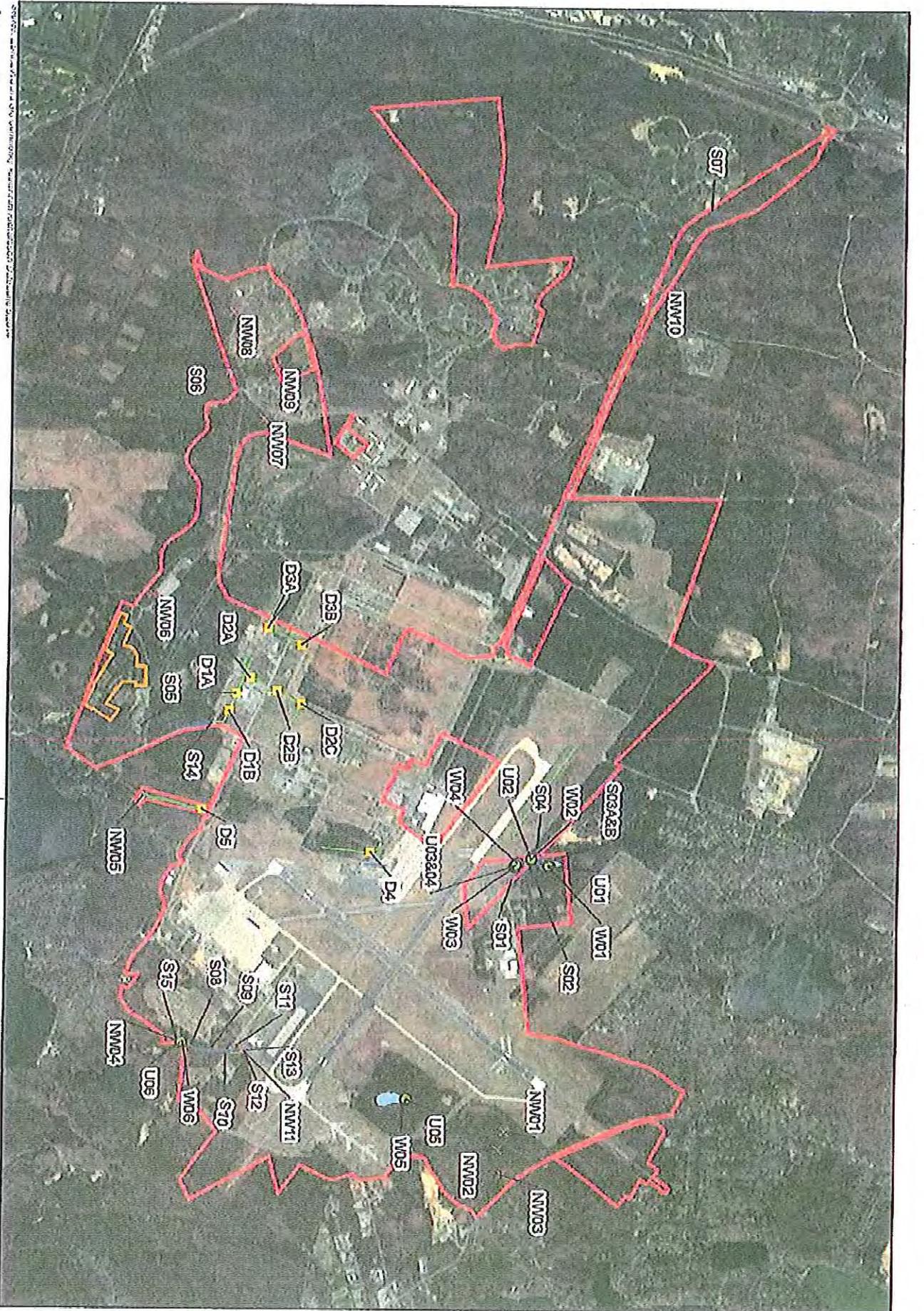


Figure 4A  
 Overall View  
 2014 Wetland Delineation  
 Ois ANGB, MA

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Otis ANGB City/County: Barnstable Sampling Date: May 15, 2014

Applicant/Owner: USACE Mobile District State: Massachusetts Sampling Point: W03

Investigator(s): Reaves/Jorgensen Section, Township, Range: \_\_\_\_\_

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

Slope (%): 2 Lat: 41° 39' 55.283" N Long: 70° 31' 46.761" W Datum: Lat/Long WGS 1984

Soil Map Unit Name: Hinckley sandy loam, 3 to 8 percent slopes NWI Classification: None

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

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

Are Vegetation , Soil , or Hydrology  naturally problematic? N (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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks:   	

### HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<b>Primary Indicators (minimum of one is required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	--

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

Remarks:

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

Sampling Point: W03

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>0</u>	= Total Cover	

Sapling/Shrub Stratum (Plot size: <u>0</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	_____	= Total Cover	

Herb Stratum (Plot size: <u>30' x 8'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Eleocharis palustris</u>	<u>70</u>	<u>Y</u>	<u>OBL</u>
2. <u>Carex crawfordii</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>110</u>	= Total Cover	

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	<u>0</u>	= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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 _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

Rapid Test for Hydrophytic Vegetation

Dominance Test is > 50%

Prevalence Test is ≤ 3.0<sup>1</sup>

Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?**

Yes  No

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



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Otis ANGB City/County: Barnstable Sampling Date: May 15, 2014  
 Applicant/Owner: USACE Mobile District State: Massachusetts Sampling Point: U03  
 Investigator(s): Reaves/Jorgensen Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.) Drainage swale Local relief (concave, convex, none): concave  
 Slope (%): 2 Lat: 41° 39' 55.635" N Long: 70° 31' 47.360" W Datum: Lat/Long WGS 1984  
 Soil Map Unit Name: Hinckley gravelly sandy loam, 15 to 35 percent slopes NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_, Soil \_\_\_\_, or Hydrology \_\_\_\_ significantly disturbed? N Are "Normal Circumstances" present? Yes X No \_\_\_  
 Are Vegetation \_\_\_\_, Soil \_\_\_\_, or Hydrology \_\_\_\_ naturally problematic? N (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 <u>X</u> Hydric Soil Present?                      Yes ___ No <u>X</u> Wetland Hydrology Present?            Yes ___ No <u>X</u>	Is the Sampled Area within a Wetland?      Yes ___ No <u>X</u> If yes, optional Wetland Site ID: _____
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)                      ___ Water-Stained Leaves (B9) ___ High Water Table (A2)                  ___ Aquatic Fauna (B13) ___ Saturation (A3)                            ___ Marl Deposits (B15) ___ Water Marks (B1)                         ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2)                ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3)                        ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4)                  ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5)                        ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7)    ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ___ 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)
<b>Field Observations:</b> Surface Water Present?    Yes ___ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes ___ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes ___ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes ___ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

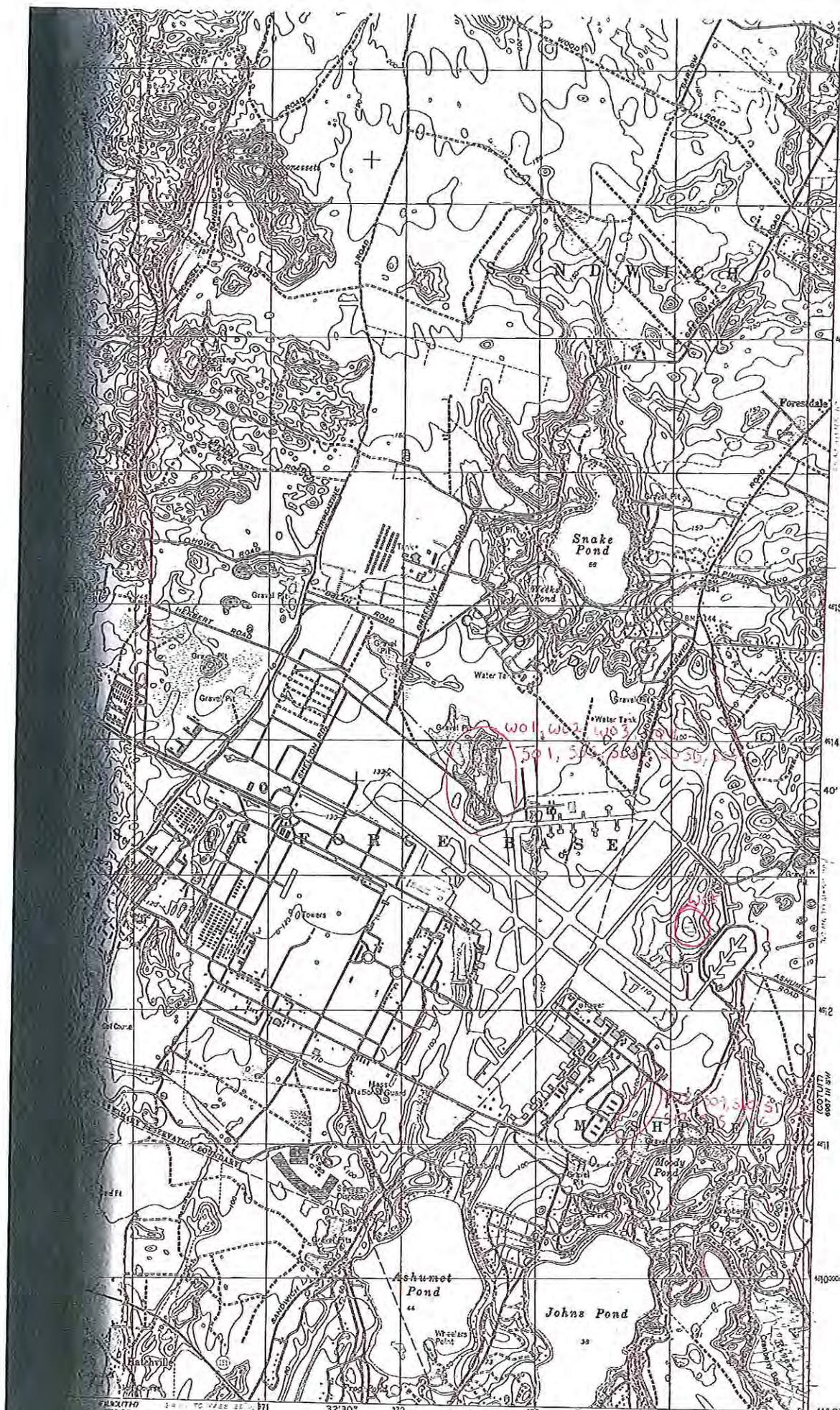
Sampling Point: U03

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>0</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
		= Total Cover		
<b>Herb Stratum</b> (Plot size: _____)				
1. <u>Andropogon virginicus (broom-sedge)</u>	<u>15</u>		<u>FACU</u>	
2. <u>Fragaria virginiana (Virginia strawberry)</u>	<u>15</u>		<u>FACU</u>	
3. <u>Plantago lanceolata (English plantain)</u>	<u>5</u>		<u>UPL</u>	
4. <u>Solidago altissima (tall goldenrod)</u>	<u>10</u>		<u>FACU</u>	
5. <u>Dichanthelium clandestinum (deer tongue witchgrass)</u>	<u>5</u>		<u>FAC</u>	
6. <u>Carex sp.</u>	<u>2</u>		<u>NI</u>	
7. <u>Upland Seed Mix (mix of grasses)</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>112</u>	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		

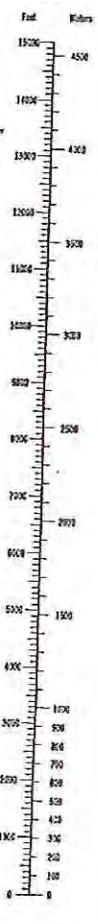
  

<b>Dominance Test worksheet:</b>	
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A)
Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
<b>Prevalence Index worksheet:</b>	
Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>7</u>	x 3 = <u>21</u>
FACU species <u>100</u>	x 4 = <u>400</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>112</u>	(A) <u>446</u> (B)
Prevalence Index = B/A = <u>3.98</u>	
<b>Hydrophytic Vegetation Indicators:</b>	
<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
<input type="checkbox"/> Dominance Test is > 50%	
<input type="checkbox"/> Prevalence Test is ≤ 3.0 <sup>1</sup>	
<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Hydrophytic Vegetation Present?</b>	
Yes	No <u>X</u>

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



CONVERSION SCALES



Feet	Meters
1	0.305
2	0.610
3	0.914
4	1.219
5	1.524
6	1.829
7	2.134
8	2.438
9	2.743
10	3.048

In correct feet to meters multiply by 0.305  
 In correct meters to feet multiply by 3.281

SCALE 1:25 000

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 374000 E

ROAD CLASSIFICATION

c.c.





Aerial View From Google Earth 3/2012

W02

W03 & W04

Pinecone

Hickory Rd

3/2012

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

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

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** Dec 23, 2014

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** NAE-2014-01934, Otis Air National Guard Base, WO6

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: MA County/parish/borough: Barnstable County City: Buzzards Bay  
Center coordinates of site (lat/long in degree decimal format): Lat. 41d 38m 40.39s° N, Long. 070d 30m 56.60s° W.  
Universal Transverse Mercator:

Name of nearest waterbody: Moody Pond

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mashpee River

Name of watershed or Hydrologic Unit Code (HUC): Cape Cod

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

Office (Desk) Determination. Date: August 5, 2014

Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

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

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

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

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet: width (ft) and/or acres.

Wetlands: acres.

**c. Limits (boundaries) of jurisdiction based on: Pick List**

Elevation of established OHWM (if known):

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: Wetland is isolated as it is a closed system. The closest Non-TNW waterway is 1,200 feet away (Moody Pond).  
The closest Non-TNW flowing waterbody is 9,400 feet away (Mashpee River).

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

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

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

Tributary properties with respect to top of bank (estimate):

- Average width: feet  
Average depth: feet  
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

- |  |  |                                   |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts           | <input type="checkbox"/> Sands                     | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles         | <input type="checkbox"/> Gravel                    | <input type="checkbox"/> Muck     |
| <input type="checkbox"/> Bedrock         | <input type="checkbox"/> Vegetation. Type/% cover: |                                   |
| <input type="checkbox"/> Other. Explain: |  |                                   |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

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

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

- Dye (or other) test performed:

Tributary has (check all that apply):

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

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

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> High Tide Line indicated by:   | <input checked="" type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects      | <input type="checkbox"/> survey to available datum;                    |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings;                            |
| <input type="checkbox"/> physical markings/characteristics         | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges                              |  |
| <input type="checkbox"/> other (list):                             |  |

(iii) Chemical Characteristics:

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

Explain:

Identify specific pollutants, if known:

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

<sup>7</sup>Ibid.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
  - TNWs: linear feet width (ft), Or, acres.
  - Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
  - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
  - Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

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

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
- Identify type(s) of waters: .
- Wetlands: acres.

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

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
  - Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **The wetland is a closed system located over 1,200 feet from the nearest body of water. The nexus has been cutoff from the distance between the wetland and the waterbody.**
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: 0.16 acres.

**SECTION IV: DATA SOURCES.**

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

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Figure 4D.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: POCASSET, MA. & COTUIT, MASS. 1:25,000.
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: 24k Quad Name: Pocasset.
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): Aerial View From Google Earth 3/2012.
  - or  Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

**B. ADDITIONAL COMMENTS TO SUPPORT JD:** There are minor mistakes in the delineation reports submitted by the Applicant however the errors do not change the outcome.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Otis ANGB City/County: Barnstable Sampling Date: 05/14/2014  
 Applicant/Owner: USACE Mobile District State: Massachusetts Sampling Point: W06  
 Investigator(s): Jamell/Davanzo Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): concave  
 Slope (%): 2 Lat: 40°38'40.627"N Long: 70°30'56.046" W Datum: Lat/Long WGS 1984  
 Soil Map Unit Name: Carver loamy coarse sand, 3 to 8 percent slopes NWI Classification: PEM  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? N Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? N (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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks:	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>10"</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>10"</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>7"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Surface water in wetland varied from 0 to up to 24". The sampling point location had a high water table and saturation at 7". The wetland receives runoff from Storm Drains 4 and 5 during large storm events. A contamination plume of jet fuel could be contributing the fuel odor. However, there were live frogs in the water.	

**SOIL**

Sampling Point: W06

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	7.5 2/1	100					Silt loamy	Fuel odor – possibly contaminated
6-7	7.5 3/2	100					Loamy Silt	Fuel odor mixed with H <sub>2</sub> S odor
7-14	7.5 4/1	100					Silty Clay	Saturated

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

- |   |  |  |  |
|---|--|--|--|
| <b>Hydric Soil Indicators:</b>                                |  | <b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>          |  |
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |  |
| <input type="checkbox"/> Histic Epipedon (A2)                 |  | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |  |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |  |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4)     | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             | <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |  |
| <input type="checkbox"/> Stratified Layers (A5)               | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |  |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Depleted Matrix (F3)                            | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |  |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Redox Dark Surface (F6)                         | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)   |  |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |  |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             | <input type="checkbox"/> Redox Depressions (F8)                          | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  | <input type="checkbox"/> Red Parent Material (TF2)                   |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  | <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  | <input type="checkbox"/> Other (Explain in Remarks)                  |  |

<sup>3</sup>Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b>                  Type: _____                  Depth (inches): _____</p>	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
--	---

Remarks:  
 Smell of Hydrogen Sulfide in wetland. Soils also maintained a petroleum/grease odor - possible contamination from flight line. Storm Drain 4 and 5 drains into wetland.

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

Sampling Point: U06

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>0</u>	= Total Cover	

Sapling/Shrub Stratum (Plot size: <u>0</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Sambucus Canadensis</u>	<u>5</u>	<u>N</u>	<u>NI</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>5</u>	= Total Cover	

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rumex crispus</u>	<u>4</u>	<u>N</u>	<u>FAC</u>
2. <u>Artemisia vulgaris</u>	<u>80</u>	<u>Y</u>	<u>UPL</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>84</u>	= Total Cover	

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rosa multiflora</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>
2. <u>Vitis sp.</u>	<u>5</u>	<u>N</u>	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	<u>55</u>	= 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: 2 (B)

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

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = _____
FACW species <u>0</u>	X 2 = _____
FAC species <u>4</u>	X 3 = <u>12</u>
FACU species <u>50</u>	X 4 = <u>200</u>
UPL species <u>80</u>	X 5 = <u>400</u>
Column Totals: <u>134</u>	(A) <u>612</u> (B)

Prevalence Index = B/A = 4.57

**Hydrophytic Vegetation Indicators:**

\_\_\_ Rapid Test for Hydrophytic Vegetation

\_\_\_ Dominance Test is > 50%

\_\_\_ Prevalence Test is ≤ 3.0<sup>1</sup>

\_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

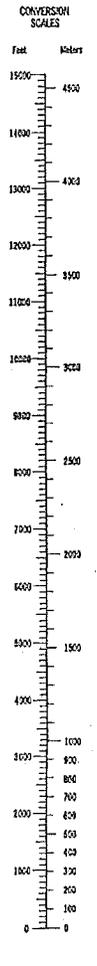
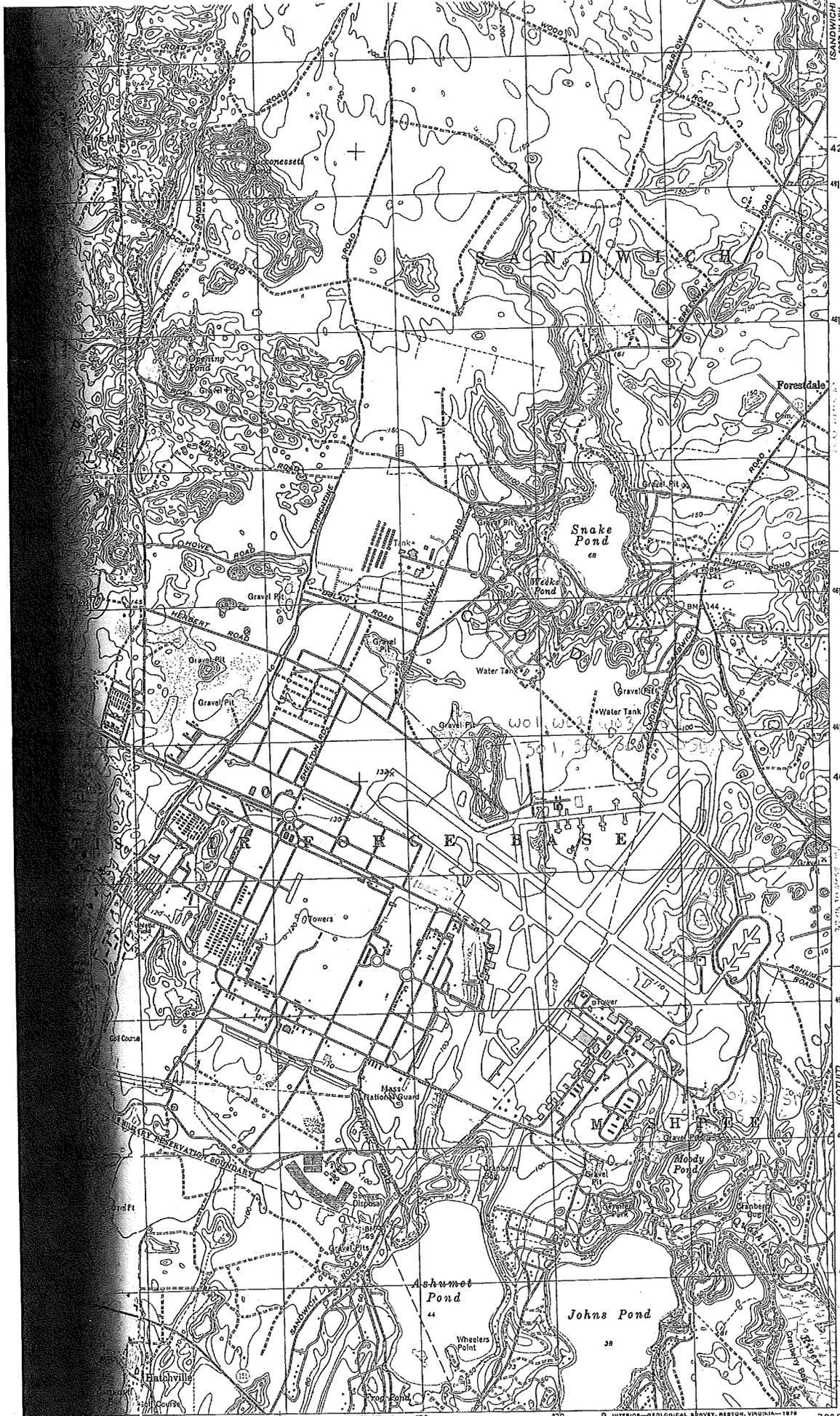
\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?**

Yes \_\_\_ No X

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



To convert feet to meters multiply by 3048  
To convert meters to feet multiply by 3.2808

MASSACHUSETTS  
SCALE 1:25 000

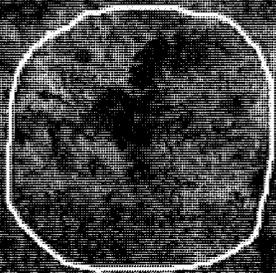
© INTERIOR-GEOLOGICAL SURVEY, WASHINGTON, VIRGINIA—1978  
3740000 E  
ROAD CLASSIFICATION



Venus Hollows

Aerial View From Google Earth 3/2012

W06



Carter Rd

3/2012
   
 1991

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

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

**SECTION I: BACKGROUND INFORMATION**

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

Dec 23, 2014

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: NAE-2014-01934, Otis Air National Guard Base, SO8, SO9, S10, S11, S12, S13, S15

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: MA County/parish/borough: Barnstable County City: Buzzards Bay  
Center coordinates of site (lat/long in degree decimal format): Lat. 41d 38m 38.61s° N, Long. 70d 30m 58.37s° W.  
Universal Transverse Mercator:

Name of nearest waterbody: Moody Pond

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mashpee River

Name of watershed or Hydrologic Unit Code (HUC): Cape Cod

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

Office (Desk) Determination. Date:

Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.  
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: linear feet: width (ft) and/or acres.

Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: Pick List

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: The streams are within a closed system and are isolated from waters of the United States. The closest Non-

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

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

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

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

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

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

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

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

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

**(i) General Area Conditions:**

Watershed size: Pick List  
Drainage area: Pick List  
Average annual rainfall: \_\_\_\_\_ inches  
Average annual snowfall: \_\_\_\_\_ inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

- Tributary flows directly into TNW.
- Tributary flows through Pick List tributaries before entering TNW.

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

Identify flow route to TNW<sup>5</sup>:  
Tributary stream order, if known:

<sup>4</sup> Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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

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

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

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

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: \_\_\_\_\_ acres

Wetland type. Explain: \_\_\_\_\_

Wetland quality. Explain: \_\_\_\_\_

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

(b) General Flow Relationship with Non-TNW:

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

Surface flow is: **Pick List**

Characteristics: \_\_\_\_\_

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

Dye (or other) test performed: \_\_\_\_\_

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: \_\_\_\_\_

Ecological connection. Explain: \_\_\_\_\_

Separated by berm/barrier. Explain: \_\_\_\_\_

(d) Proximity (Relationship) to TNW

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

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

Flow is from: **Pick List**.

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

(ii) **Chemical Characteristics:**

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

Identify specific pollutants, if known: \_\_\_\_\_

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

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

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

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

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

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

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters: .

3. **Non-RPWs<sup>8</sup> that flow directly or indirectly into TNWs.**

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

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

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters: .

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

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

Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

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

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

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

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

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

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

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

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

7. **Impoundments of jurisdictional waters.<sup>9</sup>**

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

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

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

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

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

which are or could be used by interstate or foreign travelers for recreational or other purposes.

from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

which are or could be used for industrial purposes by industries in interstate commerce.

Interstate isolated waters. Explain: .

Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

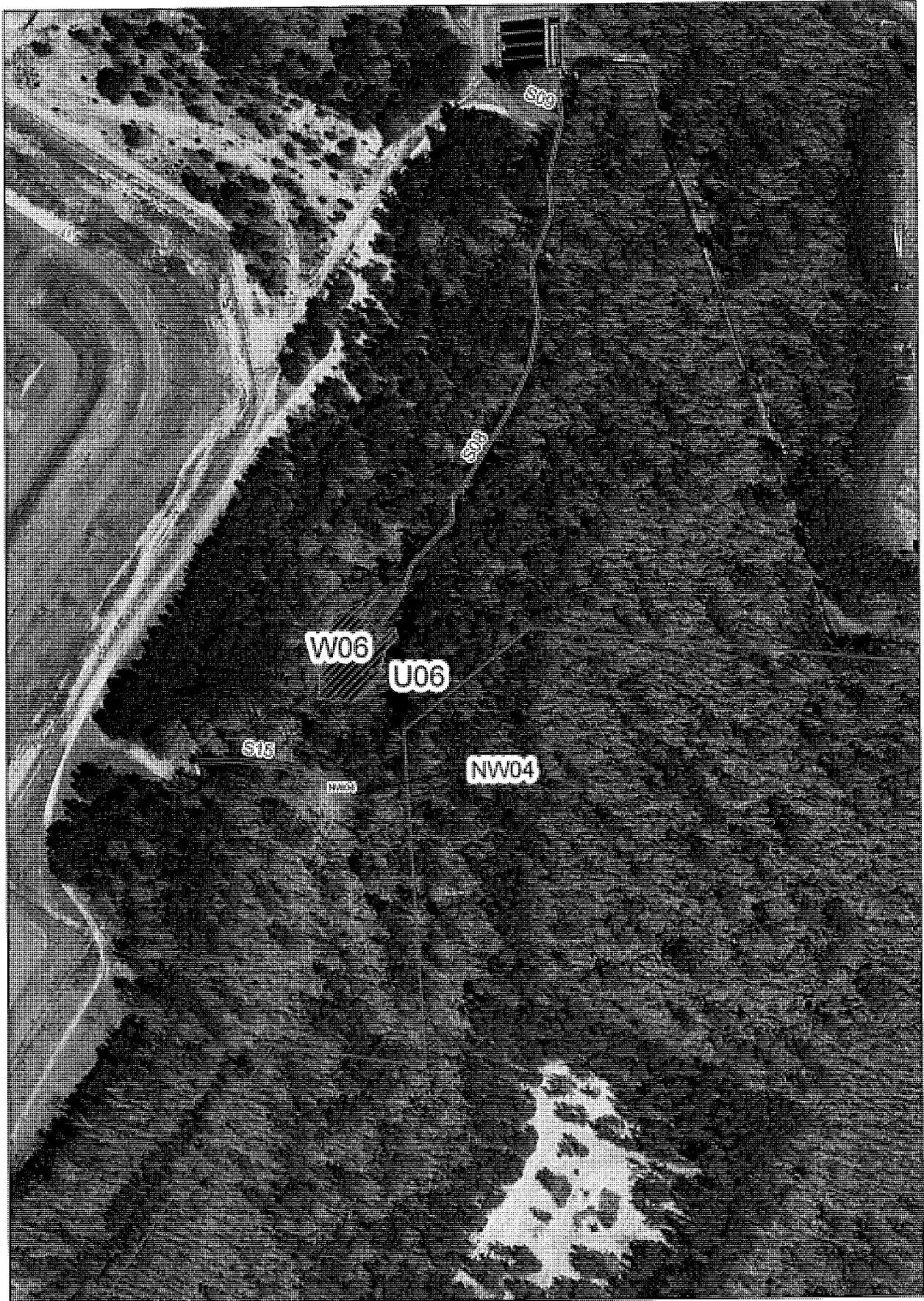
<sup>8</sup>See Footnote # 3.

<sup>9</sup>To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

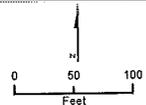
<sup>10</sup>Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Other information (please specify):

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**



- Legend**
- |  |                      |  |                               |
|--|----------------------|--|-------------------------------|
|  | POW/PEM/PFO          |  | Upland Points                 |
|  | PEM                  |  | Wetland Points                |
|  | POW/PEM/PSS/PFO      |  | Ditch Points                  |
|  | POW/PEM              |  | Non-Water Verification Points |
|  | Otis Survey Boundary |  | Streams                       |
|  | Old Pond/Lagoon Area |  | Stormwater Channels           |



**Figure 4D**  
 NW04, S08-S09 and S15, U06 and W06  
 2014 Wetland Delineation  
 Otis ANGB, MA

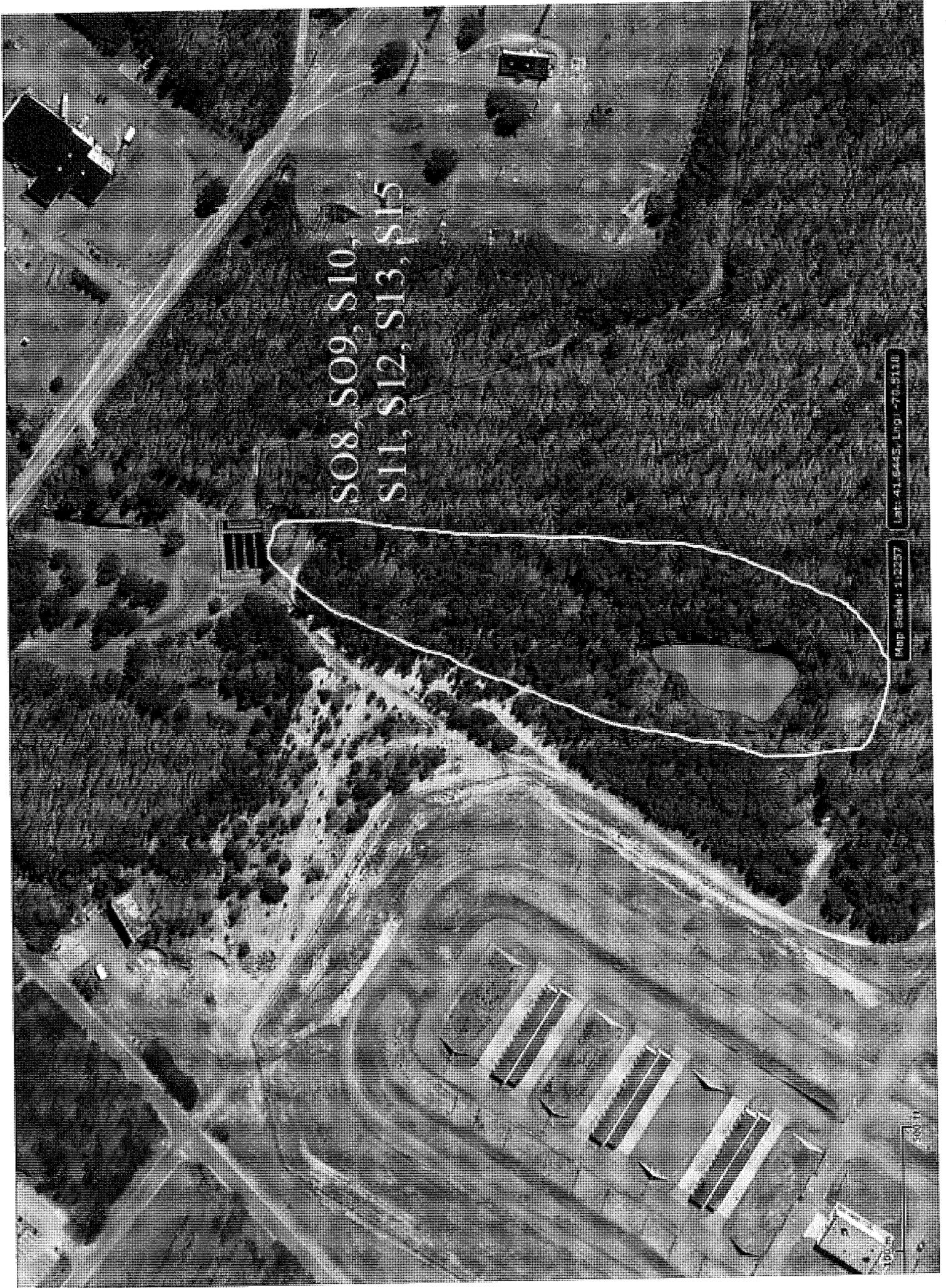
S08, S09, S10, S11, S12, S13, S15

Lot: 41, 644E, LVP - 70, 5130

Map Scale: 1:2257

500 ft

1000



**P23—S07 – On-base cemetery – Catch basin is likely origin point of S07 before it crosses the road.**



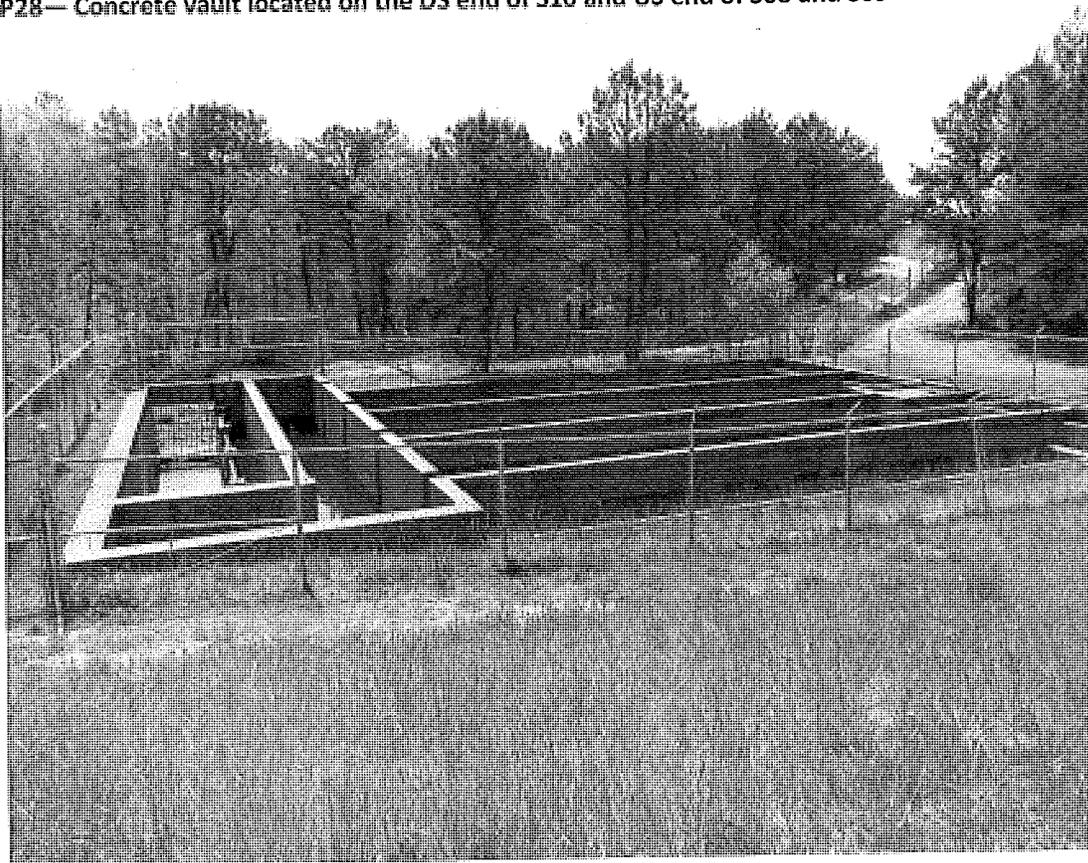
**P24 – S08 – US View of S08**



**P27 – S09 – DS View before convergence with S08**



**P28— Concrete vault located on the DS end of S10 and US end of S08 and S09**



**P31 – S14 – Facing DS (back to culvert)**



**P32 – S14 – Facing US near middle of reach**



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

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

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** Dec 23, 2014

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** NAE-2014-01934, Otis Air National Guard Base, S14

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: MA County/parish/borough: Barnstable County City: Buzzards Bay  
Center coordinates of site (lat/long in degree decimal format): Lat. ° N, Long. ° W.  
Universal Transverse Mercator:

Name of nearest waterbody: Ashumet Pond

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Mashpee River

Name of watershed or Hydrologic Unit Code (HUC): Cape Cod

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

Office (Desk) Determination. Date: September 22, 2014

Field Determination. Date(s):

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

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

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

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

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply):<sup>1</sup>**

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet: width (ft) and/or acres.

Wetlands: acres.

**c. Limits (boundaries) of jurisdiction based on: Pick List**

Elevation of established OHWM (if known):

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.  
Explain: Wetland is isolated as it is a closed system. The closest Non-TNW waterway is 2,874 feet away (Ashumet Pond). The closest Non-TNW flowing waterbody is 3.1 miles away (Mashpee River).

<sup>1</sup> Boxes checked below shall be supported by completing the appropriate sections in Section III below.

<sup>2</sup> For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

<sup>3</sup> Supporting documentation is presented in Section III.F.

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

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

Tributary properties with respect to top of bank (estimate):

Average width:        feet  
Average depth:        feet  
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

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

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope):        %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

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

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

Dye (or other) test performed:

Tributary has (check all that apply):

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

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

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

(iii) Chemical Characteristics:

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

Explain:

Identify specific pollutants, if known:

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

<sup>7</sup>Ibid.

For each wetland, specify the following:

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

Summarize overall biological, chemical and physical functions being performed:

### C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

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

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

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

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

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

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

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.  
Identify type(s) of waters:
- Wetlands: acres.

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

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **The stream is within a closed system located over 2,8750 feet from the nearest body of water. The nexus has been cutoff from the distance between the streams and the waterbody.**
- Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

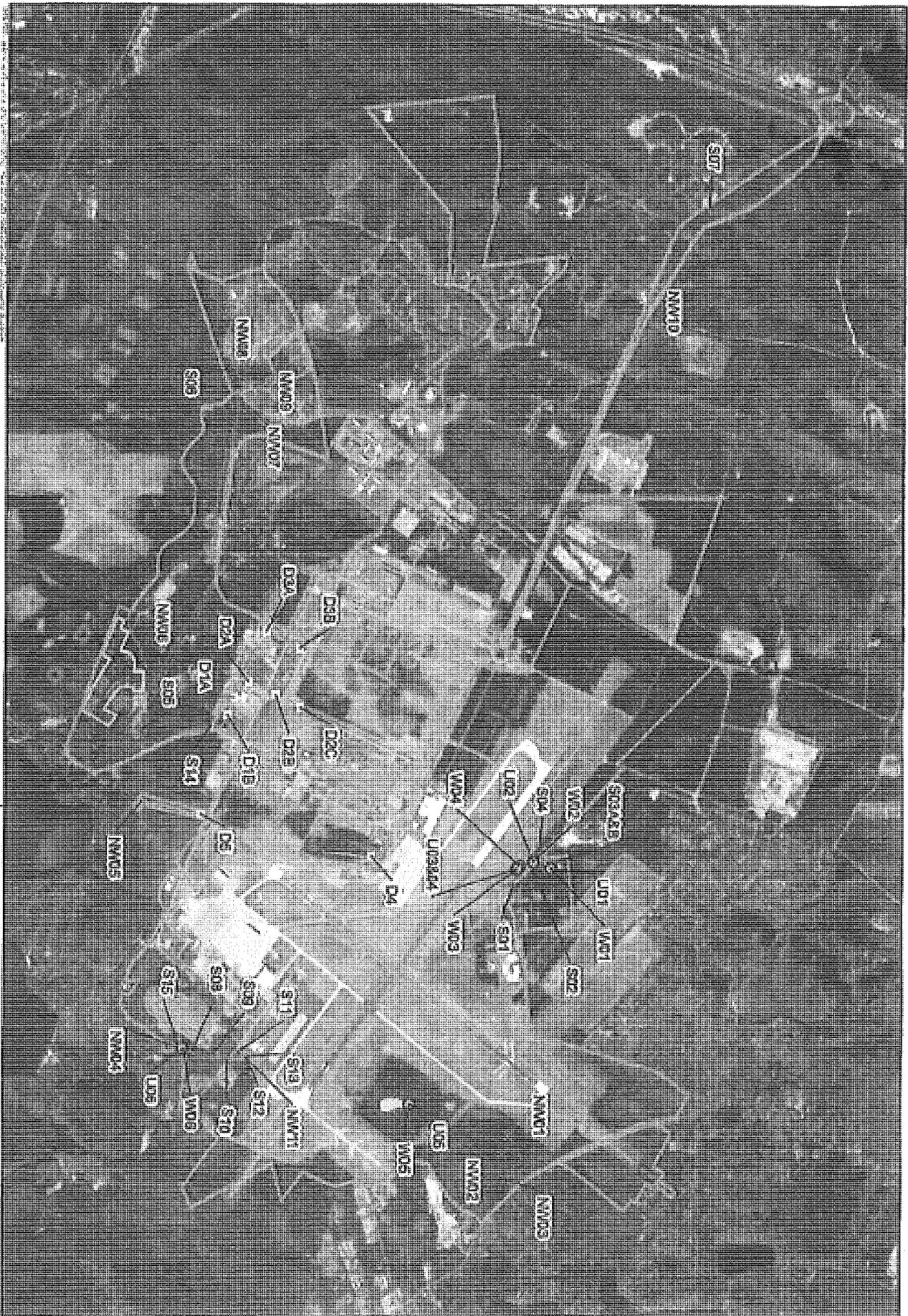
- Non-wetland waters (i.e., rivers, streams): 1320 linear feet, 2 width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

**SECTION IV: DATA SOURCES.**

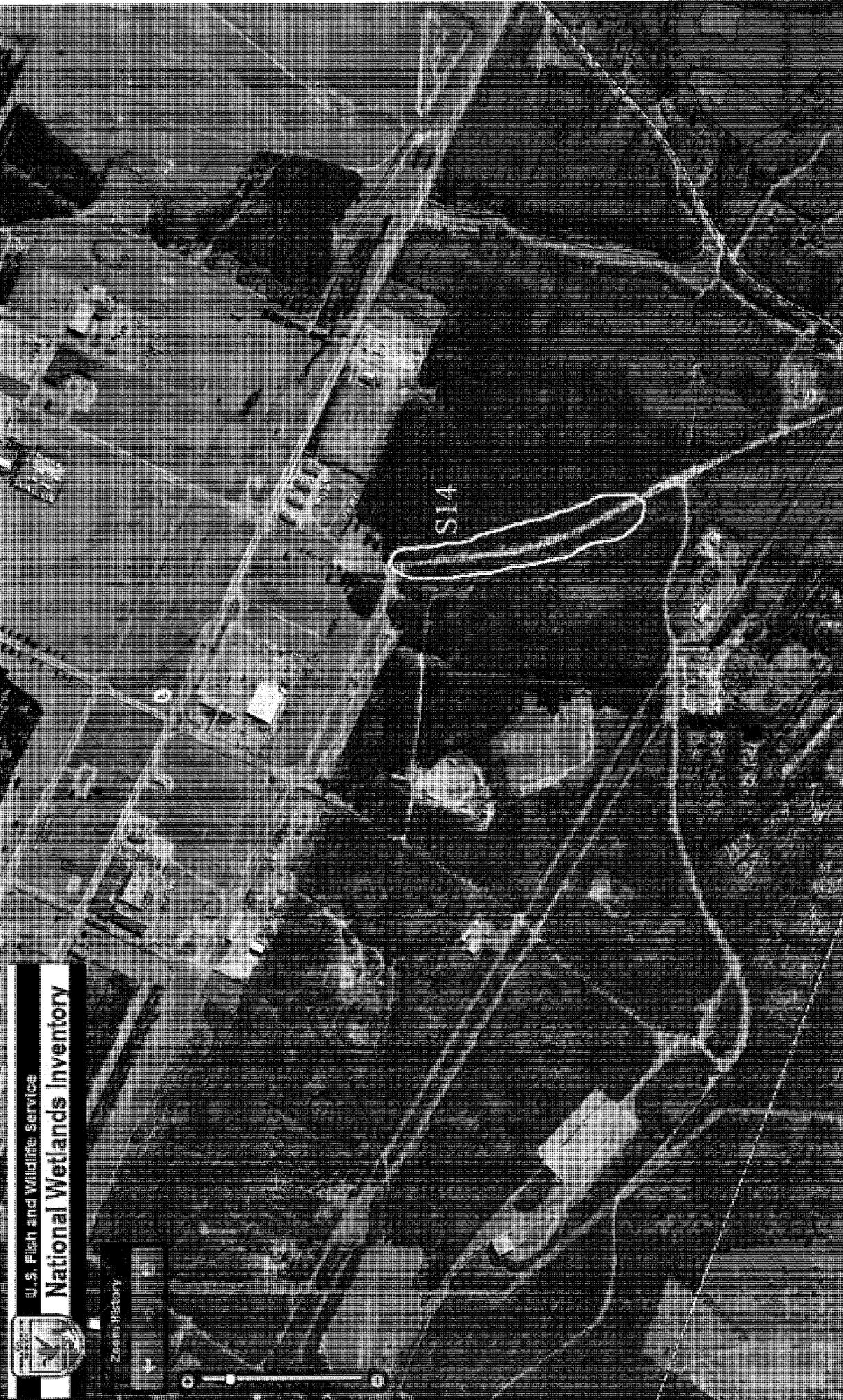
**A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Figure 4A.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: POCASSET, MA. 1:25,000.
- USDA Natural Resources Conservation Service Soil Survey. Citation:
- National wetlands inventory map(s). Cite name: 24k Quad Name: Pocasset.
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): Aerial View From Google Earth S14.  
or  Other (Name & Date): End of S14 Facing South.
- Previous determination(s). File no. and date of response letter:
- Applicable/supporting case law:
- Applicable/supporting scientific literature:
- Other information (please specify):

- Legend**
-  Wetlands
  -  Wetland Points
  -  Upland Points
  -  Stormwater Channels
  -  Ditch Points
  -  Non-Military Verification Points
  -  Old Pond/Lagoon Area



**Figure 4A**  
 Overall View  
 2014 Wetland Delineation  
 Otis ANGB, MA



U.S. Fish and Wildlife Service  
**National Wetlands Inventory**



Zoom History



