Final

Survey Report

Surveys of Potential Wetland Sites on Tinian in Support of the Commonwealth of the Northern Mariana Islands Joint Military Training Environmental Impact Statement/ Overseas Environmental Impact Statement

Prepared for:

Department of the Navy
Naval Facilities Engineering Command, Pacific
258 Makalapa Drive, Suite 100
JBPHH HI 96860-3134

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Table of Contents

List of Figures

List of Tables

APPENDICES

Acronyms and Abbreviations

ac	acre(s)
CJMT	CNMI Joint Military Training
cm	centimeter(s)
CNMI	Commonwealth of the Northern Mariana Islands
CWA	Clean Water Act
DoN	Department of the Navy
EIS	Environmental Impact Statement
E-W	east-west
ft	feet
ft^2	square feet
ha	hectare(s)
in	inch(es)
m	meter(s)
m^2	square meter(s)
MES	Micronesian Environmental Services
MLA	Military Lease Area
N-S	north-south
NWI	National Wetlands Inventory
NAVFAC	Naval Facilities Engineering Command
NRCS	Natural Resources Conservation Service
OEIS	Overseas Environmental Impact Statement
U.S.	United States
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UXO	unexploded ordnance
WWII	World War II

CHAPTER 1
INTRODUCTION

1.1 OVERVIEW

The purpose of this report is to provide information regarding the identification of wetland habitats on Tinian in support of the Commonwealth of the Northern Mariana Islands (CNMI) Joint Military Training (CJMT) Environmental Impact Statement (EIS)/Overseas EIS (OEIS). Results of these surveys will be incorporated into an EIS/OEIS and Biological Assessment to assess the potential environmental impacts to wetland habitats from proposed Joint Military Training on Tinian.

1.2 PURPOSE

The purpose of the wetland surveys is to determine whether potential wetland sites within the Military Lease Area (MLA) on Tinian meet the definition of U.S. Army Corps of Engineers (USACE) jurisdictional waters under the Clean Water Act (CWA) (33 U.S. Code 1344 Section 328). While this report describes the wetland attributes of the surveyed sites relative to the CWA, it should be noted that the USACE must make the official determination of whether those sites fall under their regulatory program. Only after the USACE determines their jurisdictional authority over these sites would a wetland delineation become necessary. If applicable, results of the wetland surveys will be used in CWA Section 404 permitting processes.

1.3 SURVEY PERSONNEL

The lead personnel involved in performing the project tasks are listed in Table 1. Cardno was the prime contractor managing all survey efforts and report preparation. Subcontractors were Micronesian Environmental Services (MES) and Environet, which provided support for unexploded ordnance (UXO) detection and avoidance.

Table 1. Wetland Survey Team

Role	*Name*	*Organization*
Project Manager	Melanie Hernandez	Cardno
Task Manager	Rick Spaulding	Cardno
Principal Investigator	John Gourley	MES
Field Personnel	Dan Wooster, Lauren Ahillen	MES
UXO Escort	Josh Singleton	Environet

1.4 SURVEY AREAS

Wetland habitats on Tinian are discrete areas of impermeable clay that impound rainwater. There are three potential wetland areas within the MLA (Figures 1 and 2):

1. Mahalang Complex – an area consisting of a number of potential ephemeral wetlands in naturally low-lying areas, most of which are believed to be bomb craters.
2. Bateha Sites – consisting of two potential ephemeral depressional wetlands.
3. Hagoi Wetland – a permanent depressional wetland and open water complex of approximately 38 acres (ac) (15 hectares [ha]).

The specific Mahalang and Bateha sites that were surveyed for the current survey effort were selected based upon information from previous site visits and surveys (USFWS 1996; AECOS Inc. and Wil Chee Planning Inc. 2009; Department of the Navy [DoN] 2013, 2014).

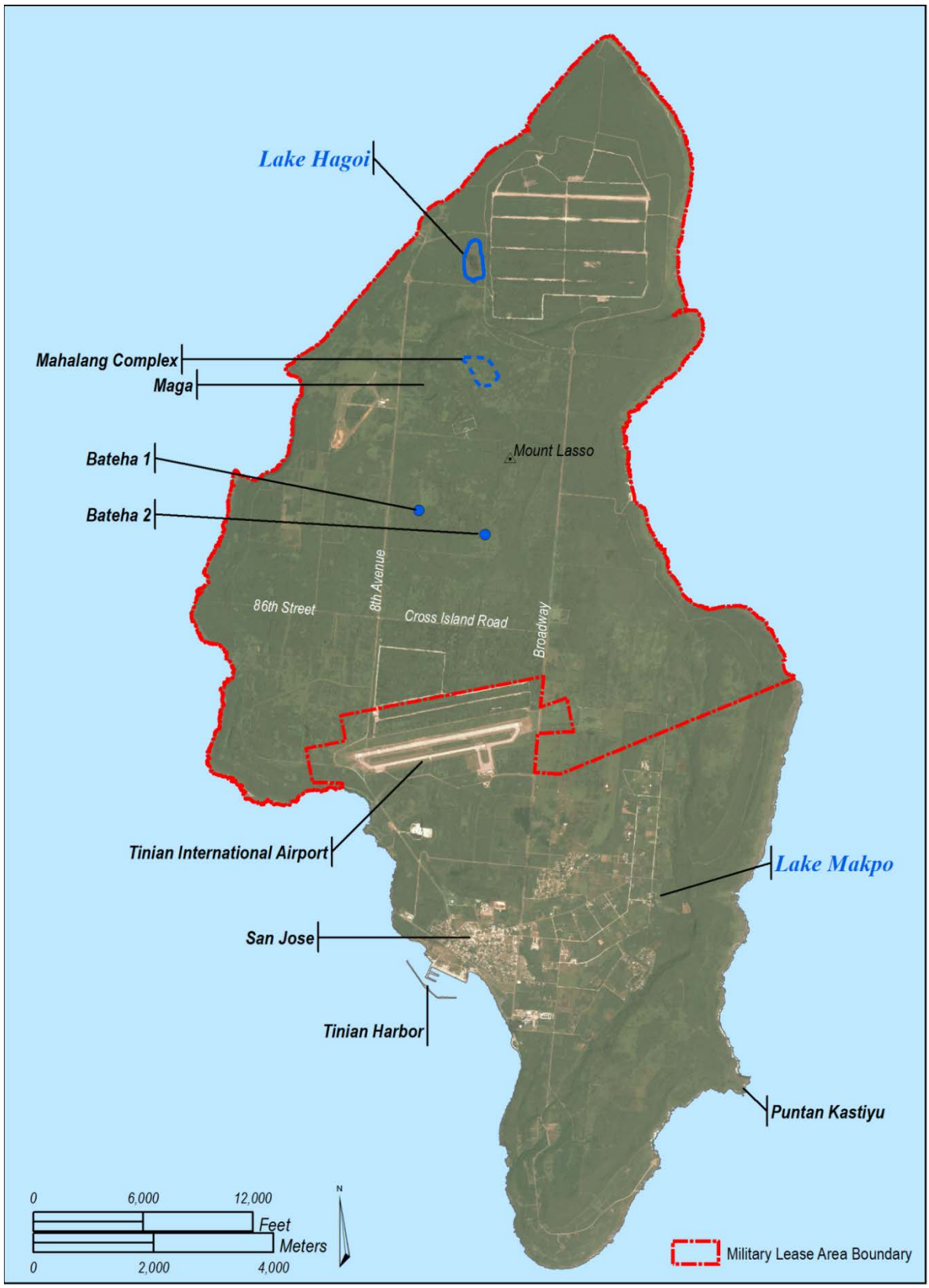


Figure 1. Tinian

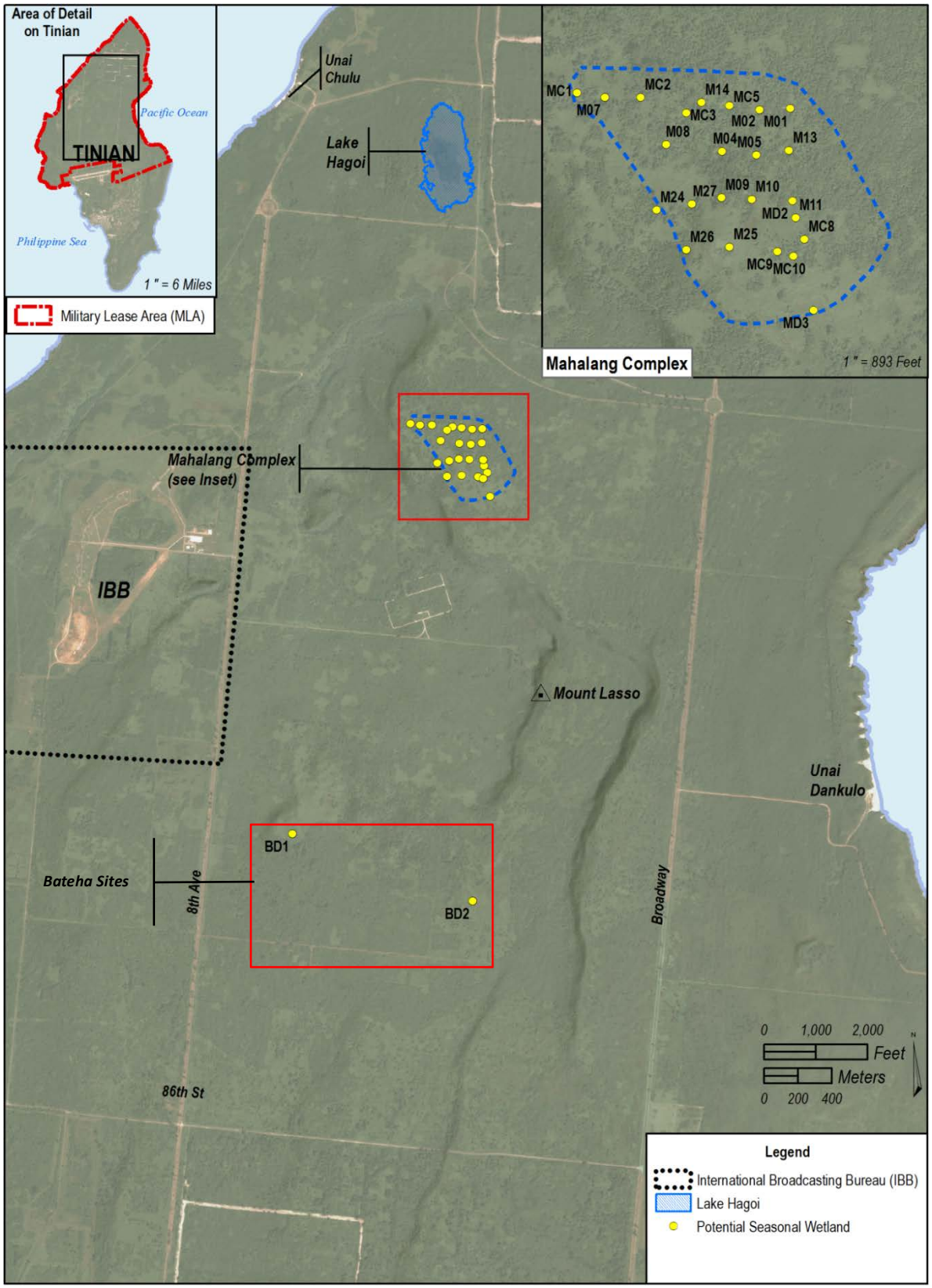


Figure 2. Potential Seasonal Wetlands within the MLA

1.5 TINIAN PRECIPITATION PATTERNS

The potential of low-lying areas in the Bateha and Mahalang areas of Tinian to pond water is based primarily on frequency and magnitude of rainfall events and percolation rates of the soils. Persistence of wetland-like conditions is governed by consistent above-average rainfall that occurs during the rainy season. Figure 3 shows the differing 'wet' and 'dry' seasons that are typically found on Tinian. The U.S. Geological Survey defines the wet season as occurring from July through October, which characteristically receives approximately 61% of the annual rainfall. The dry season usually occurs from February through May and receives approximately 12%. The remaining months of November, December, January, and June are transitional months when rainfall can be highly variable from year to year. Total annual rainfall is significantly influenced by tropical storms and typhoons; therefore, drought-like conditions are often attributed to a lack of storms (Gingerich 2002).

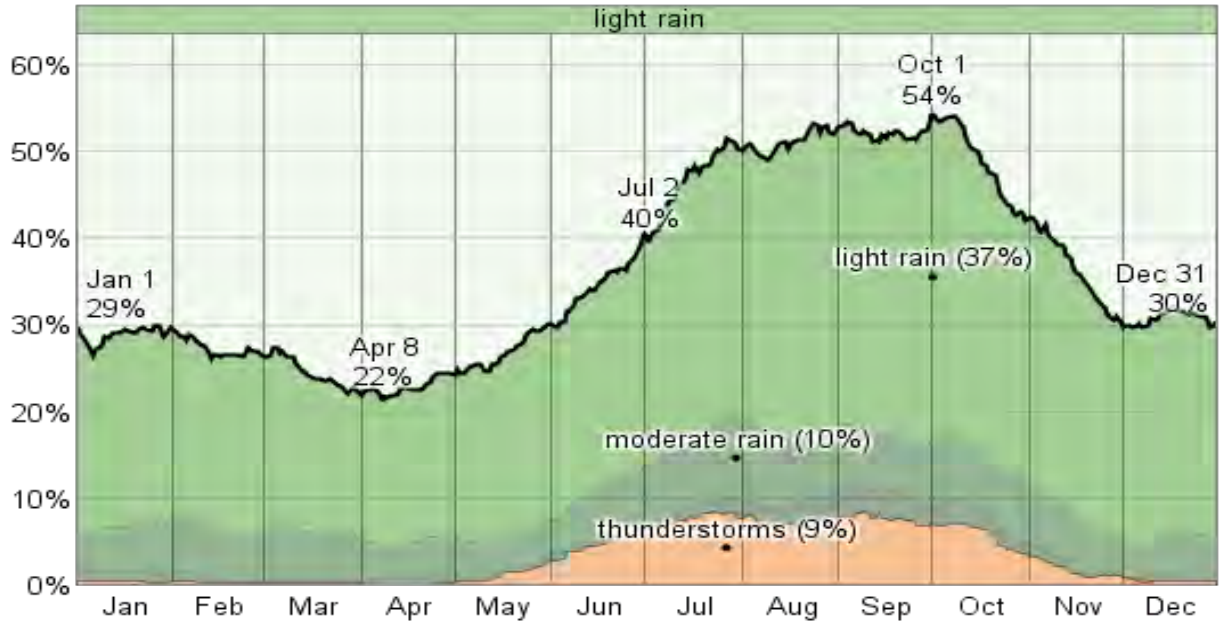
DoN (2014) reported the following characteristics of the Bateha and Mahalang sites:

- The Bateha sites were not connected to any stream or natural surface drainage systems.
- The 1999 Tinian U.S. Geological Survey topographical map did not show any connectivity to natural stream systems.
- These potential wetlands were not connected to groundwater sources during the 2012 and 2013 survey periods.
- The only water source supporting these potential wetlands was rainfall.

Although these characteristics were discussed in DoN (2014), they warrant repeating as the primary question being addressed in this report is whether certain sites in the Bateha and Mahalang areas are truly wetlands or simply ephemeral surface waters.

Figure 3 shows the probability of precipitation occurring at any given point in time during a typical year based on records from the Tinian International Airport. Historical precipitation values were averaged by month over time to provide a predication for the type and frequency of occurrence of precipitation that may occur on any given day. The graph plainly shows a distinct wet and dry season based on average precipitation. It should be cautioned that this data may not necessarily correlate with the amount of surface water at the Bateha and Mahalang sites during any specific point in time. For example, extremely high water levels were observed during field investigations conducted during the first week of December 2014 (Figure 4). Though precipitation was expected to be relatively low when examining historical average rainfall probabilities (Figure 3), there is a lag time between heavy rainfall events and when these potential wetland areas eventually dry out.

The annual 2014 rainfall value for the Tinian Airport was 92.56 inches or 11% above average. This was primarily due to the passage of several tropical cyclones in the vicinity of Tinian. The survey period was 1-6 December 2014 and the preceding months experienced above average rainfall levels. September rainfall was 69% above average while October was nearly normal at 91% of the average. With the grounds of the survey sites saturated and November rainfall 41% above average, the survey sites ponded water quickly and retained their high water levels throughout the survey period.



Data Interpretation: *"The fraction of days in which various types of precipitation are observed. If more than one type of precipitation is reported in a given day, the more severe precipitation is counted. For example, if light rain is observed in the same day as a thunderstorm, that day counts towards the thunderstorm totals. The order of severity is from the top down in this graph, with the most severe at the bottom."*
http://weatherspark.com/averages/33110/Tinian-Island-West-Island-Northern-Mariana-Islands

Figure 3. Probability of Precipitation at Some Point in the Day for Tinian

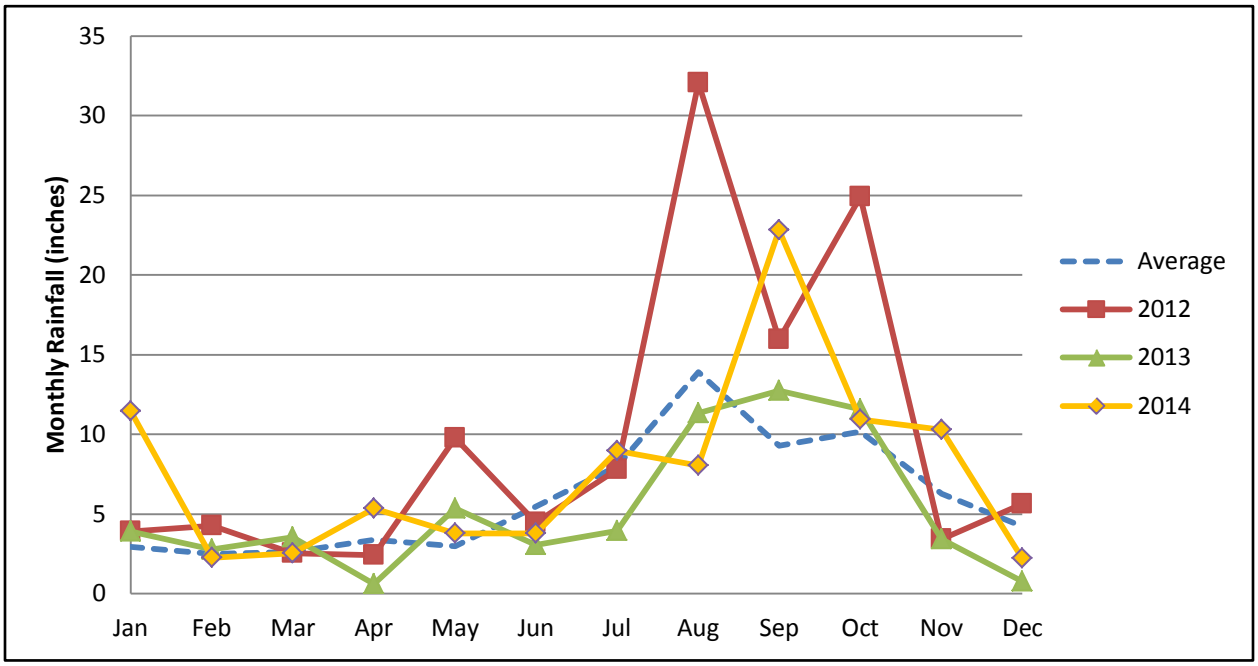


Figure 4. Monthly Rainfall Summaries from Tinian International Airport (2012, 2013, and 2014; average is from 2000 thru 2012)
(*Source*: WorldWeatherOnline 2015)

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CHAPTER 2
METHODS

2.1 GENERAL METHODS

Wetland surveys were undertaken during December 1-6, 2014 to determine if selected potential ephemeral surface water features within the MLA contain the wetland indicators as defined by the USACE: wetland hydrology, hydrophytic vegetation, and hydric soils. The 1987 USACE Wetland Delineation Manual (USACE 1987) and 2012 Regional Supplement for Hawai'i and Pacific Islands (USACE 2012) were used as the basis for evaluating the wetland indicators of each potential wetland site.

- *Hydrology*: Hydrology was characterized based upon the presence of surface water or saturated soils and connection to any stream or natural surface drainage systems.
- *Hydrophytic Vegetation*: The occurrence of obligate wetland species was assessed to characterize the presence of hydrophytic vegetation.
- *Hydric Soils*: Determination of the presence of hydric soils was conducted by digging test pits as close to the ponded water level as possible and classifying soils via a Munsell Color Chart. Sampling of paired soil test pits was not conducted as the goal of the current survey effort was to determine if hydric soils were present at each site, not delineate wetland boundaries.

The potential wetland sites were either shallow depressions (Sites BD1, BD2, MD3, and M11) or steeply sloped inverted cones (MC1, M07, MC2, and M10) which are believed to have been created from exploding ordnance after World War II (DoN 2013).

For comparison purposes only, the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps were reviewed (USFWS 2014) and are provided in this report. However, the conclusions arrived at in this report were based on field data collected during the survey period.

2.2 MAHALANG COMPLEX

The Mahalang Complex is located on a flat area south of Lake Hagoi (see Figure 2). More than 20 individual potential wetlands form the complex and are located within a matrix of grasslands, herbaceous scrub, tangantangan, and mixed secondary forest. Although sizes of these sites were not given in previous reports, AECOS and Wil Chee Planning (2009) estimated the two largest features as approximately 1.2 ac (0.5 ha) each. The majority of the potential wetlands are characterized as likely bomb craters resulting from the detonation of stored munitions after WWII. The introduced grass Pennisetum polystachion, mixed with various species of weedy vines, dominates the sides of the craters. Other potential wetlands in the complex consist of shallow depressions with weedy vines and herbs. One of these potential wetlands, site MD3, had been found to support a dense growth of the obligate wetland plant species *Ipomoea aquatica* (DoN 2014).

Potential wetland sites that are known to have ponded water during previous 2012 and/or 2013 studies (DoN 2014) are shown in Figure 5. Of these, six sites were sampled for this study: four craters (MC1, MC2, M07, and M10) and two depressional sites (M11 and MD3). The crater sites are assumed to be representative of other craters within the Mahalang area. In addition to recording general observations and mapping wetland features, a minimum of two soil test pits were dug at each site close to the water's edge (if ponded water was present) to determine presence/absence of hydric soils.

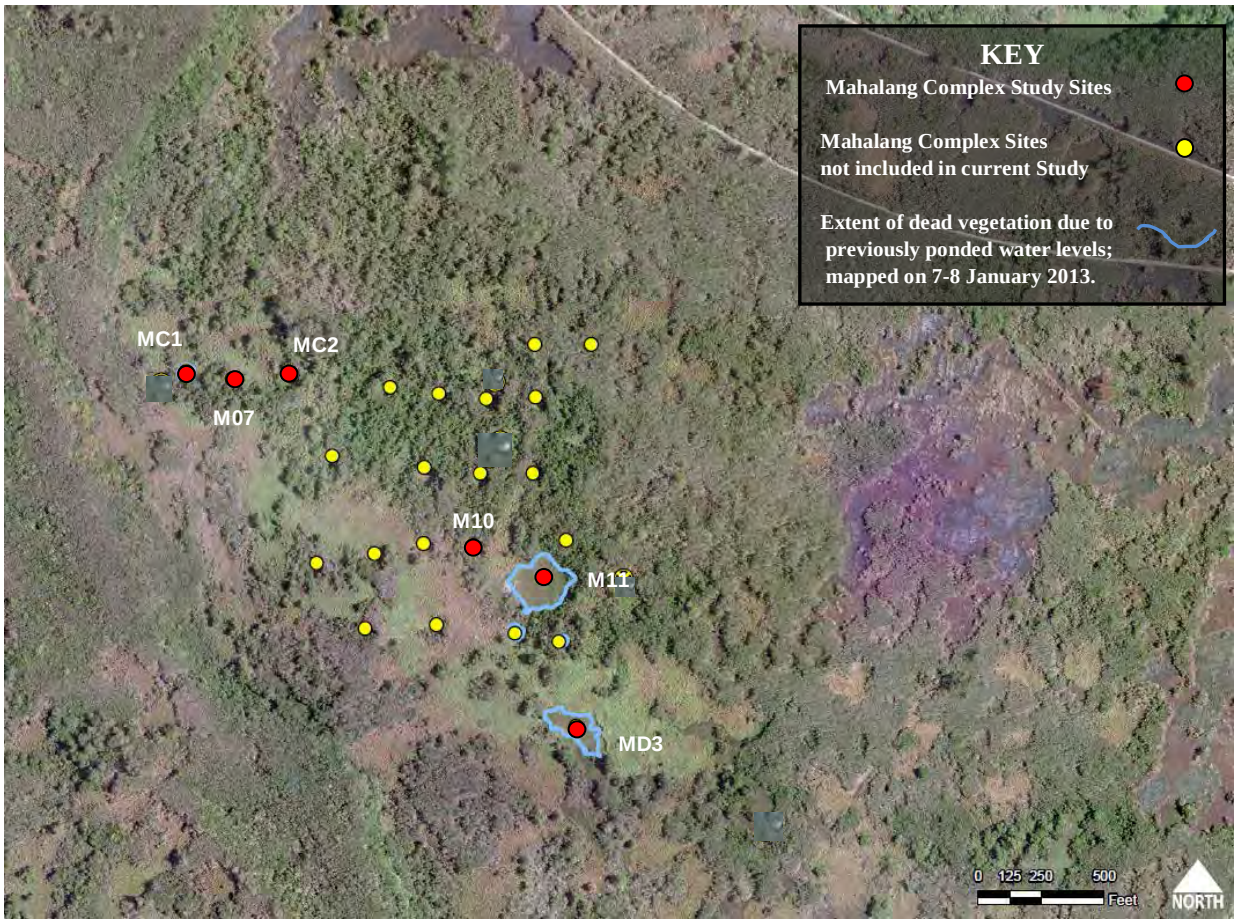

Figure 5. Locations of Mahalang Potential Wetland Sites That Had Documented Ponded Water during at Least One season during the Previous DoN (2014) Study

(*Notes*: Potential wetland sites addressed in this study are labeled. Location data are superimposed on an undated aerial photograph; figure modified from DoN [2014].)

2.2.1 NWI – Mahalang Complex

The U.S. Fish and Wildlife Service (USFWS) NWI program documented only 12 wetlands in the central Mahalang area (Figure 6) (USFWS 2014). The size of many of the Mahalang sites are shown on the NWI map. Without having the full array of wetlands currently known from this area included on the NWI map, it is not possible to establish a direct correlation between the depicted NWI wetlands and those being assessed in the current study. Based on examining the general distribution of wetlands, it is assumed that five of the targeted Mahalang wetlands are included on the NWI map. Although the NWI classifies all the Mahalang wetlands as marshes (e.g., palustrine), based on recent field investigations, they appear to function more like ephemeral ponds (e.g., lacustrine).

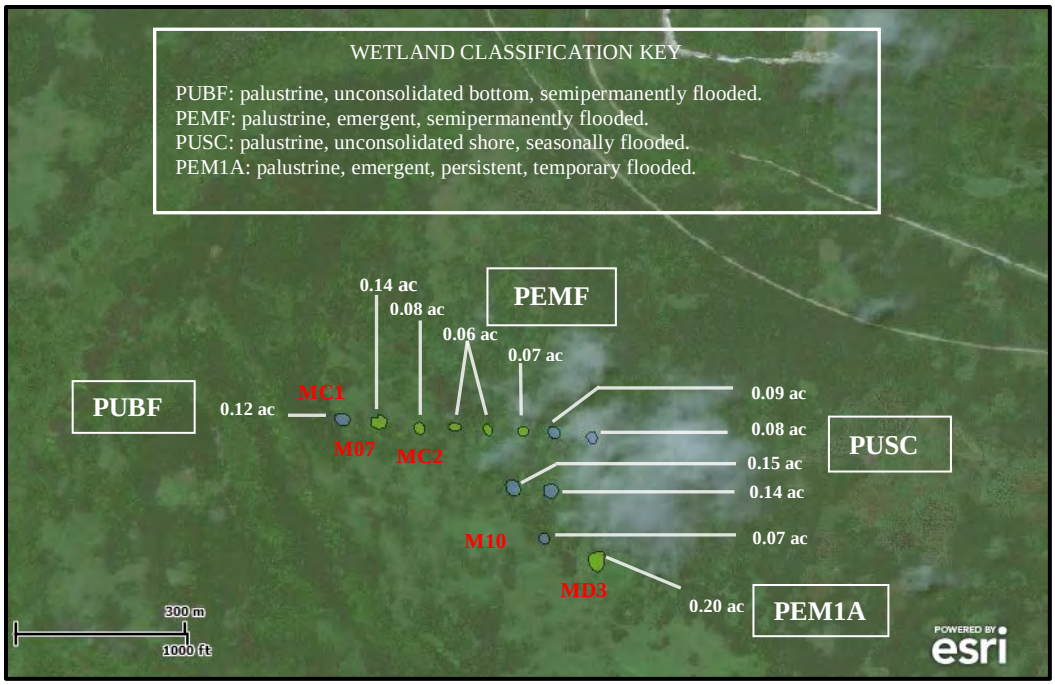

Figure 6. Mahalang Wetland Sites Based on the USFWS NWI (USFWS 2014)

2.3 BATEHA SITES

Two potential depressional wetland sites in the Bateha area were identified for assessment and are addressed in this report: BD1 and BD2 (Figure 7). These sites were documented as ponding water during previous 2012 and 2013 DoN studies. In addition to recording general observations and mapping wetland features, four soil test pits were excavated for BD1 and five soil test pits for BD2.

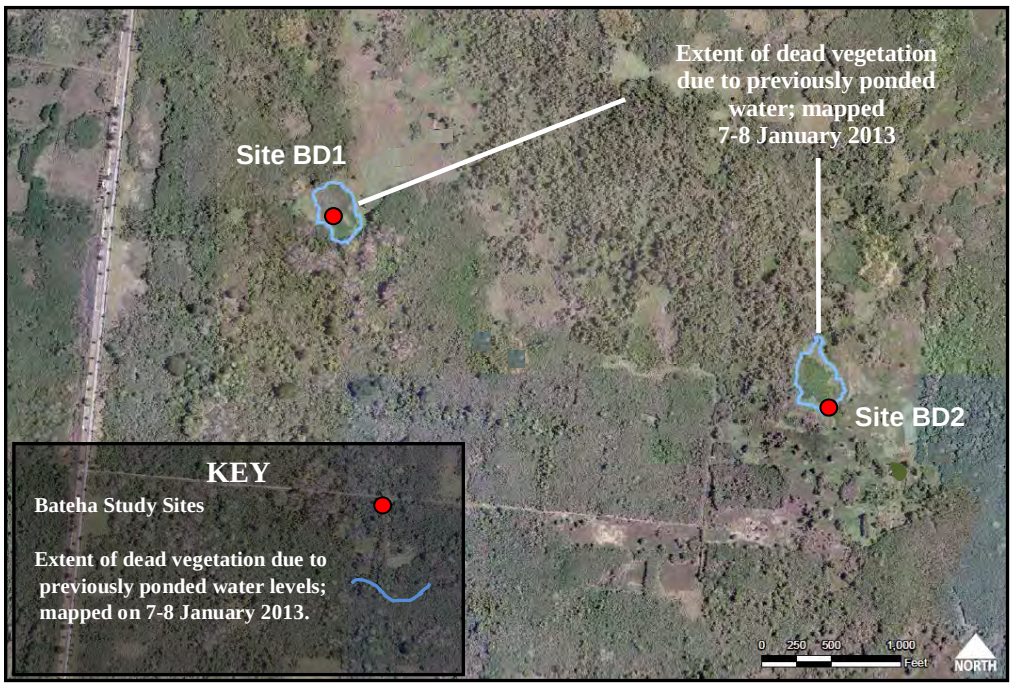

Figure 7. Bateha Sites BD1 and BD2
(*Notes*: Depicted on an undated aerial photograph; figure modified from DoN [2014].)

2.3.1 NWI – Bateha Sites

Bateha Site BD1 is the larger of the two Bateha sites. The USFWS NWI lists BD1 as a 7.1-acre (2.9-ha) roughly circular depression that is classified as *palustrine, emergent, persistent, temporary flooded* (PEM1A) (Figure 8). Based on local history, this area was once used as a racetrack.

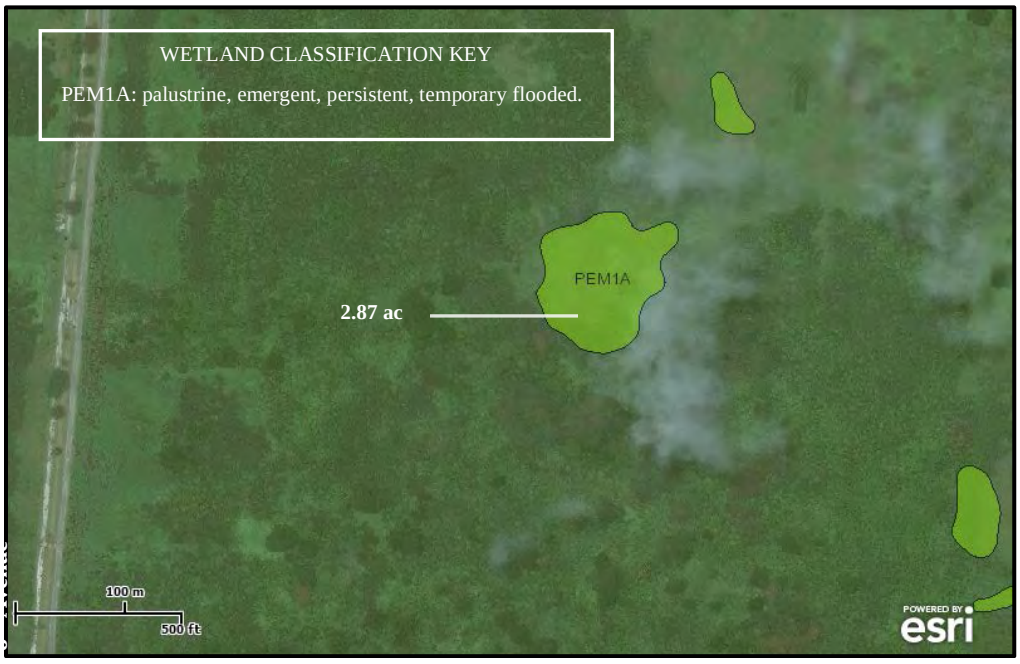

Figure 8. Bateha Site BD1 Based on the USFWS NWI (USFWS 2014)

Bateha Site BD2 is irregularly shaped and is a relatively deeper depressional basin compared to BD1. The USFWS NWI lists BD2 as a 5.8-acre (2.3-ha) wetland site that is classified as *palustrine, emergent, persistent, temporary flooded* (PEM1A); *palustrine, emergent, persistent, seasonally flooded* (PEM1C), and *palustrine, emergent, persistent, semipermanently flooded* (PEM1F) (Figure 9).

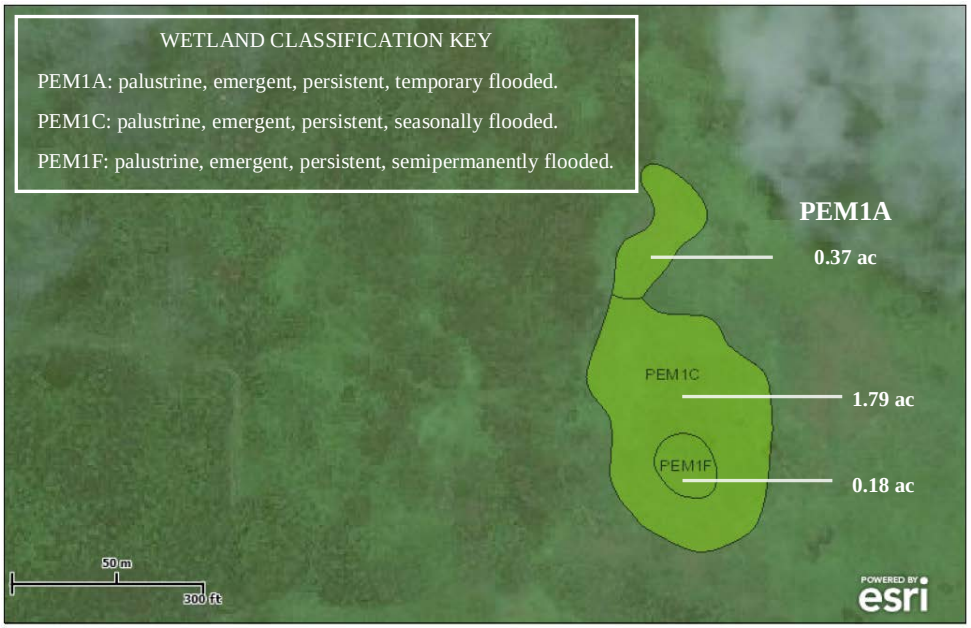

Figure 9. Bateha Site BD2 Based on the USFWS NWI (USFWS 2014)

2.4 HAGOI WETLAND

Although Hagoi has not been identified by the USACE as a jurisdictional wetland, it is generally assumed to meet the definition of a jurisdictional wetland under the CWA. Hagoi wetland is surrounded on three sides by WWII-era paved roads (Figures 2 and 10). The area of interest is immediately adjacent to a road approximately 2,800 ft (853 m) in length and runs in a N-S direction along the eastern side of the Hagoi wetland. For purposes of this report, this particular road section is designated Hagoi Road. The road bed is raised approximately 5 ft (1.5 m) above surrounding terrain.

The survey area includes the narrow strip of upland which is located between Hagoi Road and the Hagoi wetland. In order to determine the potential wetland/upland interface to the east of the Hagoi wetland and west of Hagoi Road, six soil test pits were dug approximately 50 ft (15 m) west of Hagoi Road at approximate 400-ft (120-m) intervals (Figure 11). The site is level with a slight <1% slope towards the Hagoi wetland. Test pits were dug to a depth of 16-20 in (41-51 cm) until hard, compacted material was encountered. At one location (soil test pit #2) concrete was found within a few inches of the soil surface so the test pit was relocated further away from the roadway.

Figure 10. Hagoi Wetland and the Eastern Survey Area

Figure 11. Hagoi Wetland Complex Depicting the Soil Test Pits adjacent to the Western Side of Hagoi Road

(*Note*: Data are superimposed onto an undated aerial photograph.)

A 1995 USFWS vegetation map of the Hagoi wetland (USFWS 1996) showed a band of *Phragmites karka* and large patches of *Shoenoplectus subulatus* (=*Scirpus litoralis*) around the perimeter of Lake Hagoi. There were also patches of *Acrostichum aureum* and the grass *Paspalum distichum*. All of these species are indigenous to Tinian (Raulerson 2006). As of 2012, vegetation appears to have changed relative to that mapped in 1995 with the occurrence of additional species, such as the indigenous *Hibiscus tiliaceus*, and the expansion of existing species into previously open water areas of the lake, particularly *Shoenoplectus*. The expansion of *Shoenoplectus* into the interior of Hagoi has resulted in a reduction of open water, with particularly rapid changes documented between 2001 and 2013 (DoN 2013).

2.4.1 NWI – Hagoi Wetland

Although the USFWS NWI map (Figure 12) shows the edge of the Hagoi wetland encroaching to within approximately 330 ft (100 m) of Hagoi Road, field investigations were needed to determine the proximity of wetland/upland interface between the road and the wetland proper.

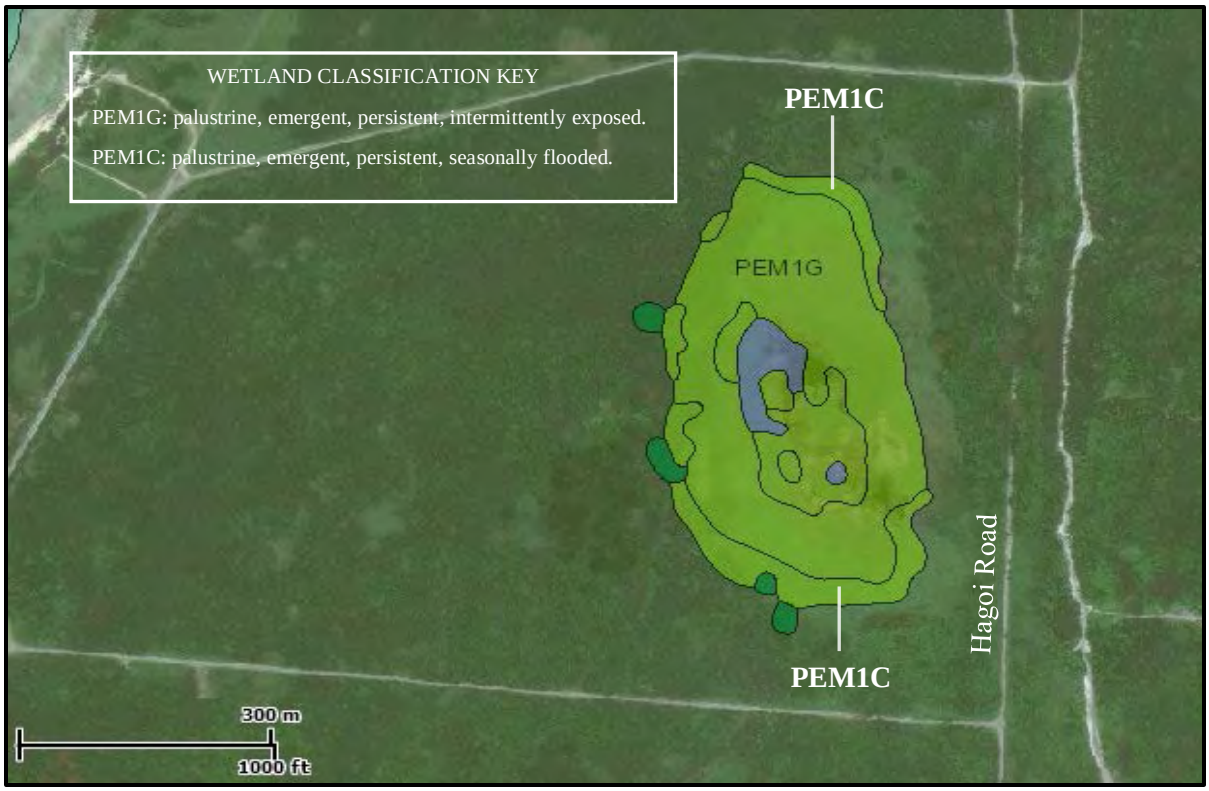

Figure 12. Hagoi Wetland Complex Based on the USFWS NWI (USFWS 2014)

2.5 UXO CONSIDERATIONS

Wetland surveys require subsurface soil testing which includes digging a hole by hand shovel approximately 2 ft (0.6 m) deep and 2 ft (0.6 m) in diameter. This proposed soil disturbance necessitates detection of munitions and explosives of concern (MEC)/material potentially presenting an explosive hazard (MPPEH) by a UXO Technician using a DGM or magnetometer prior to digging. If UXO were determined to be present at the site of a proposed soil test pit, another site would be chosen that avoided MEC/MPPEH. Mr. Joshua Singleton was the UXO Technician who accompanied the field personnel for this project.

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CHAPTER 3
RESULTS

3.1 MAHALANG COMPLEX

Using data collected during previous studies (DoN 2013, 2014) and the current study, Table 2 summarizes various physical and ponding characteristics for the six Mahalang sites under study. Appendix A provides a photograph of each site during the 2014 survey and a representative dry season.

Table 2. Select Physical and Ponding Characteristics of the Mahalang Sites

Site	*Crater Diameter at Rim (N-S/E-W)*	*Crater Area at Rim*	*Length of Surface Water Feature*	*Area of Previously Ponded Waters*			*Area of Existing Ponded Waters*		
				7-8 Jan 2013	*30-31 Dec 2013*	*3-4 Dec 2014*	*7-8 Jan 2013*	*30-31 Dec 2013*	*3-4 Dec 2014*
MC1	No data	No data	None observed	No data	194 m^2	317 m^2	No data	132 m^2	277 m^2
MC2	34.7 / 39.5 m	998 m^2	None observed	No data	No data	176 m^2	No data	No data	54 m^2
MD3	n/a – depressional basin	n/a	None observed	1,879 m^2	nm	nm	Dry	Dry	nm
M07	32.6 / 30.1 m	867 m^2	1 feature – 26.1 m	No data	127 m^2	265 m^2	No data	Dry	191 m^2
M10	37.0 / 34.4 m	964 m^2	1 feature – 6.1 m	No data	217 m^2	609 m^2	No data	91 m^2	609 m^2
M11	n/a – depressional basin	n/a	None observed	3,332 m^2	nm	4,630 m^2	Dry	Dry	Dry

Notes: m^2 = square meters; n/a = not applicable; nm = not measureable. All measurements were made with a Trimble Geoxh and Tornado antenna. Historical comparison data from January and December 2013 are from DoN (2014).

3.1.1 Mahalang Site MC1

This crater site is a roundish steeply sloped tree-less conical depression. Table 2 shows select physical and ponding characteristics for this crater site and Figure 13 depicts the perimeters of the previously ponded water line and existing water line as of December 4, 2014. Water levels were the highest observed during the current field investigation with previously ponded waters covering an area of 3,412 square feet (ft^2) (317 square meters [m^2]) while ponded waters were 2,982 ft^2 (277 m^2). On December 30-31, 2013, the area of previously ponded waters was estimated at 2,088 ft^2 (194 m^2) while ponded waters covered 1,421 ft^2 (132 m^2) (Table 2).

Although the site exhibited the hydrology and hydric soils criteria, due to the absence of wetland vegetation and lack of connection to surface drainage features or waters of the U.S., this site is not considered a wetland. Based on multiple site visits since 2012, there is no reason to suspect that wetland vegetation was growing below the water's surface.

Summary of Site Characteristics for Mahalang Site MC1
(see Appendix B, *Field Data Sheets*, for details)

Hydrology

The typical crater site meets the hydrology criteria as an inverted cone-shaped depression with steep sloping sides containing ponded water.

Vegetation

No obligate or facultative wet wetland plant species were recorded from this site.

Soils

Both soil test pits showed indications of hydric soils. The "unconsolidated bottom" designation by the USFWS NWI (USFWS 2014) may refer to a layer of viscous muck consisting of partially decomposed organic material at the bottom of the site.

Connectivity to waters of the U.S.

No surface drainage features were observed leading into/from this crater site or connecting this site with other surface water bodies.

Wetland Classification Type – USFWS NWI

NWI mapped as PUBF (palustrine, unconsolidated bottom, semi permanently flooded) (Figure 6) (USFWS 2014).

Figure 13. Mahalang Site MC1 Depicting Soil Test Pits and Perimeters of the Previously Ponded Water Line and Existing Water Line as of December 4, 2014

(*Notes*: Perimeter of previously ponded waters was defined by the demarcation line of dead vegetation. Locations of the two soil test pits are also noted. Data are superimposed onto an undated aerial photograph.)

3.1.2 Mahalang Site MC2

This site is typical of the other crater sites: a roundish, steeply sloped tree-less conical depression. Table 2 shows select physical and ponding characteristics for this crater site and Figure 14 depicts the perimeters of the previously ponded water line and existing water line as of December 4, 2014. The north-south (N-S) diameter at the crater rim was 114 ft (34.7 m) while the east-west (E-W) diameter was 130 ft (39.5 m). The vertical depth of this crater was estimated to be 17 ft (5.2 m). The area of this site at the crater rim is 10,742 ft^2 (998 m^2).

During this field investigation, ponded waters covered an area of 581 ft^2 (54 m^2) while the area of previously ponded waters measured 1,894 ft^2 (176 m^2). There are no historical data to compare with these findings.

Although the site exhibited the hydrology and hydric soils criteria, due to the absence of wetland vegetation and lack of connection to surface drainage features or waters of the U.S., this site is not considered a wetland.

Summary of Site Characteristics for Mahalang Site MC2
(see Appendix B, *Field Data Sheets*, for details)

Hydrology

The typical crater site meets the hydrology criteria as an inverted cone-shaped depression with steep sloping sides containing ponded water.

Vegetation

No obligate or facultative wet wetland plant species were recorded from this site.

Soils

Both soil test pits showed indications of hydric soils.

Connectivity to Waters of the U.S.

A short non-distinct surface drainage feature was found along the west side of the crater. No other surface drainage features were observed leading into/from this crater site or connecting this site with other surface water bodies.

Wetland Classification Type as Shown on the USFWS NWI Map:

NWI mapped as PEMF (palustrine, emergent, semipermanently flooded) (Figure 6) (USFWS 2014).

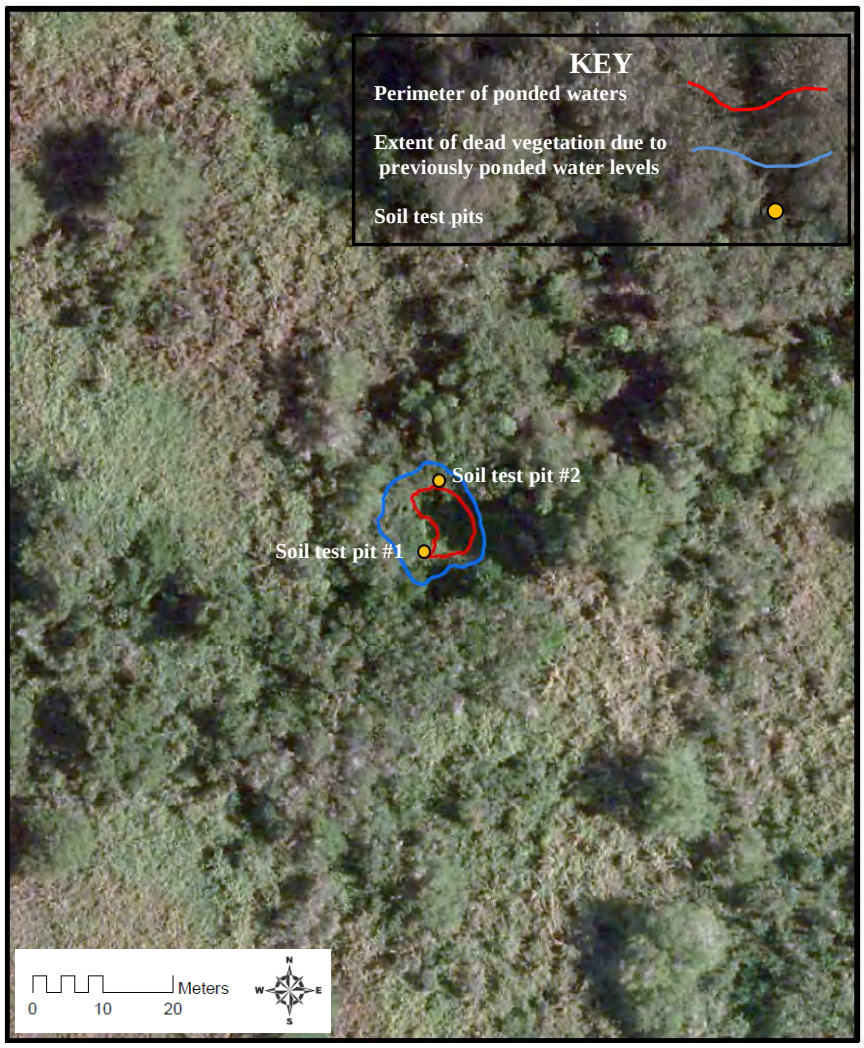

Figure 14. Mahalang Site MC2 Depicting the Soil Test Pits and Perimeters of the Previously Ponded Water Line and Existing Water Line as Mapped on December 4, 2014

(*Notes*: Perimeter of previously ponded waters was defined by the demarcation line of dead vegetation. Locations of the two soil test pits are also noted. Data are superimposed onto an undated aerial photograph.)

3.1.3 Mahalang Site MD3

Mahalang Site MD3 is a relatively small oval-shaped depression basin that ponded water during the 2012 and 2013 survey periods; it is surrounded by extensive *Pennisetum* fields DoN (2014). Table 2 shows select physical and ponding characteristics for this depressional site.

This site is different from all other surveyed depression sites, including Bateha, as the site transforms from a dominant growth of a facultative wet wetland grass species during periods of low rainfall to a dominant obligate wetland plant species during periods of high rainfall. As rainfall increases and water starts to pond, *Ipomoea aquatica* gradually becomes the dominant plant species at this site. This obligate wetland plant species (Stemmermann 1981) creates a dense entwining vegetative mat that covers all evidence of ponded water. As rainfall decreases and the wetland starts to dry, *Paspalum conjugatum* increases its dominance. *Paspalum* is a grass that has a high tolerance for saturated soils (Stemmermann 1981) but not standing water. *Ipomoea* survived the 2013 dry season as undergrowth at the base of dominant *Paspalum* grass. However, once water started ponding, *Ipomoea* out-competed the grasses and the cycle was completed.

In the fall of 2012, the water was approximately 4-5 inches (in) (10-12.7 centimeters [cm]) deep. The previously ponded water line was distinct and measured on January 8, 2013, and the area was estimated to be 0.46 ac (0.19 ha) in size. This site was surveyed on December 3, 2014 and found to be flooded with a maximum depth of approximately 4 ft (1.2 m). Lateral expansion of ponded waters was so extensive that the edge was not distinguishable under the thick mat of dead *Pennisetum*. In addition, the previously ponded water line was not visible. While open water was not visually observed at this site in December 2014 due to the dense mats of *Ipomoea*, ponded water was found under the *Ipomoea*. Figure 15 depicts the perimeter of the *Ipomoea* field as of December 3, 2014.

Due to the presence of suitable hydrology, wetland vegetation, and hydric soils and lack of connection to surface drainage features or waters of the U.S., this site may be considered an isolated wetland.

Summary of Site Characteristics for Mahalang Site MD3
(see Appendix B, *Field Data Sheets*, for details)

Hydrology
The shallow depressional basin meets the hydrology criteria as contained ponded water.

Vegetation
Paspalum conjugatum (facultative wet) and *Ipomoea aquatic* (obligate) were recorded from this site. *Ipomoea* formed a large dense mat that was mapped and shown in Figure 15. *Paspalum* was present in and along the edges of the *Ipomoea* field.

Soils
Soil test pit #1 showed indications of hydric soils while soil test pit #2 did not have hydric soils. Due to the extensive flooding at this site, the second soil test pit was not sited in an appropriate location so it had to be located outside the ponded water.

Connectivity to Waters of the U.S.
No surface drainage features were observed leading into/from this depression basin site or connecting this site with other surface water bodies.

Wetland Classification Type – USFWS NWI
NWI mapped as PEM1A (palustrine, emergent, persistent, temporary flooded) (Figure 6) (USFWS 2014).

Figure 15. Mahalang Site MD3 Depicting the Soil Test Pits and Perimeter of the *Ipomoea aquatica* Field Mapped on December 3, 2014

(*Notes*: The area covered by *Ipomoea* was 5,102 ft^2 (474 m^2). Data are superimposed onto an undated aerial photograph.)

3.1.4 Mahalang Site M07

This site is typical of the other crater sites; a roundish, steeply sloped tree-less conical depression. Table 2 shows select physical and ponding characteristics for this crater site and Figure 16 depicts the perimeters of the previously ponded water line and existing water line as of December 4, 2014. During this field investigation, ponded waters covered an area of 2,056 ft^2 (191 m^2) and previously ponded waters covered an area of 2,852 ft^2 (265 m^2). Although the site was dry on December 30-31, 2013, the area of previously ponded waters was 1,367 ft^2 (127 m^2). The N-S diameter at the crater rim was 107 ft (32.6 m) while the E-W diameter was 99 ft (30.1 m). The vertical depth of this crater was estimated at 18 feet (5.6 m).

Although the site exhibited the hydrology and hydric soils criteria, due to the absence of wetland vegetation and lack of connection to surface drainage features or waters of the U.S., this site is not considered a wetland. Based on multiple site visits since 2012, there is no reason to suspect that wetland vegetation was growing below the water's surface.

Summary of Site Characteristics for Mahalang Site M07
(see Appendix B, *Field Data Sheets*, for details)

Hydrology

The typical crater site meets the hydrology criteria as an inverted cone-shaped depression with steep sloping sides containing ponded water.

Vegetation

No obligate or facultative wet wetland plant species were recorded from this site.

Soils

Soil test pit #1 showed indications of hydric soils. Though difficult to determine, the soils in test pit #2 were found not to be hydric. It is believed that if the soil samples were obtained at a lower elevation (when the waters recede) that they would likely be hydric.

Connectivity to waters of the U.S.

One surface drainage feature approximately 86 ft (26.1 m) in length was found along the southwest side of the crater (Figure 16). No other surface drainage features were observed leading into/from this crater site or connecting this site with other surface water bodies.

Wetland Classification Type – USFWS NWI

NWI mapped as PEMF (palustrine, emergent, semipermanently flooded) (Figure 6) (USFWS 2014).

Figure 16. Mahalang Site M07 Depicting the Soil Test Pits and Perimeters of the Previously Ponded Water Line and Existing Ponded Water Line as Mapped on December 4, 2014

(*Notes*: Perimeter of previously ponded waters was defined by the demarcation line of dead vegetation. Data are superimposed onto an undated aerial photograph.)

3.1.5 Mahalang Site M10

This site is typical of the other crater sites: a roundish, steeply sloped tree-less conical depression. Table 2 shows select physical and ponding characteristics for this crater site and Figure 17 depicts the perimeter of the existing water line as of December 3, 2014. The N-S diameter at the crater rim was 121 ft (37 m) while the E-W diameter was 113 ft (34.4 m). The depth of this crater was estimated to be 18 ft (5.4 m). In December 2013, the estimated area of previously ponded waters was 2,336 ft^2 (217 m^2), while ponded waters covered 980 ft^2 (91 m^2) (Table 2).

During this field investigation, water levels were the highest observed and ponded waters covered an area of 6,555 ft^2 (609 m^2). There was no indication (e.g., dead upland vegetation) that current water levels had receded.

Although the site exhibited the hydrology and hydric soils criteria, due to the absence of wetland vegetation and lack of connection to surface drainage features or waters of the U.S., this site is not considered a wetland. Based on multiple site visits since 2012, there is no reason to suspect that wetland vegetation was growing below the water's surface.

Summary of Site Characteristics for Mahalang Site M10
(see Appendix B, *Field Data Sheets*, for details)

Hydrology

The typical crater site meets the hydrology criteria as an inverted cone-shaped depression with steep sloping sides with ponded water.

Vegetation

No obligate or facultative wet wetland plant species were recorded from this site.

Soils

Two soil test pits were dug just above the water line (Figure 17). Although the soils at test pit #1 were not hydric, it should be noted that this test pit was sited fairly high on the crater slope due to the high water levels. Soil test pit #2 contained hydric soils.

Connectivity to Waters of the U.S.

One surface drainage feature approximately 20 ft (6.1 m) in length was found along the north side of the crater (Figure 13). No other surface drainage features were observed leading into/from this crater site or connecting this site with other surface water bodies.

Wetland Classification Type – USFWS NWI

NWI mapped as PUSC (palustrine, unconsolidated shore, seasonally flooded (Figure 6) (USFWS 2014).

Figure 17. Mahalang Site M10 Depicting the Soil Test Pits and Perimeter of the Existing Ponded Water Line as Mapped on December 3, 2014.

(*Note*: Data are superimposed onto an undated aerial photograph.)

3.1.6 Mahalang Site M11

Mahalang site M11 is a large roundish open field that has a shallow and flat bottomed basin. Table 2 shows select physical and ponding characteristics for this site and Figure 18 depicts the perimeter of the previously ponded water line as of December 3, 2014. The site is surrounded on the east by secondary forest and on the west by a large *Pennisetum* field. On January 8, 2013, this site was documented with approximately 0.8 ac (0.3 ha) of previously ponded water based on the measurement of dead vegetation (DoN 2014).

At the time of the field investigation, the site was dry with no groundwater or moisture present in the soil test pits. However, there is obvious evidence of earlier flooding by the presence of a dense, homogeneous stand of dead *Mimosa pudica* (facultative upland).

Although the site may meet the hydrology criteria, due to the absence of hydric soils and wetland vegetation and lack of connection to surface drainage features or waters of the U.S., this site is not considered a wetland.

Summary of Site Characteristics for Mahalang Site M11
(see Appendix B, *Field Data Sheets*, for details)

Hydrology

On a landscape scale the area is a very shallow depression but on a smaller scale the site is flat and level. The site may meet the wetland hydrology criteria (water marks, drift deposits, stunted or stressed plants and geomorphic position) but it appears that the flooding is short-term and water percolates relatively quickly.

Vegetation

No obligate or facultative wet wetland plant species were recorded from this site.

Soils

Two soil test pits were dug to a depth of 16 in (41 cm) (Figure 18). The soil profiles did not meet any of the wetland indicator criteria. The soil is well drained and no groundwater was encountered.

Connectivity to Waters of the U.S.

No surface drainage features were observed leading into/from this crater site or connecting this site with other surface water bodies.

Wetland Classification Type – USFWS NWI

NWI mapped as PEM1A (palustrine, emergent, persistent, temporary flooded) (Figure 6) (USFWS 2014).

Figure 18. Mahalang Site M11 Depicting the Soil Test Pits and Perimeter of the Previously Ponded Water Line as Mapped on December 3, 2014

(*Notes*: Perimeter of previously ponded waters was defined by the demarcation line of dead vegetation. Site was completely dry with no ponded waters or wet areas. Data are superimposed onto an undated aerial photograph.)

3.2 BATEHA SITES

The two Bateha wetland sites are shallow depressional areas that are believed to have been modified by anthropogenic activities (DoN 2014). General characteristics of the two Bateha sites are shown in Table 3. Appendix A provides a photograph of each site during the 2014 survey and a representative dry season.

Table 3. Select Physical and Ponding Characteristics of the Bateha Sites

Site	*Length of Surface Water Features*	*Area of Previously Ponded Waters*			*Area of Existing Ponded Waters*		
		7-8 Jan 2013	*30-31 Dec 2013*	*3-4 Dec 2014*	*7-8 Jan 2013*	*30-31 Dec 2013*	*3-4 Dec 2014*
BD1	None observed	0.95 ha	Not measurable	0.83 ha	Dry	Dry	0.69 ha
BD2	None observed	1.10 ha	Not measurable	Not measurable	Not measurable	Dry	0.75 ha

Note: All measurements were made with A Trimble Geoxh and Tornado antenna. Historical comparison data from January and December 2013 are from DoN (2014).

At the time of the December 2014 surveys, both Bateha sites were flooded to a depth of 3-4 ft (1-1.2 m) at some locations. The flooded areas were up to the high water mark at the shoreline indicating that during drier conditions the upland grass *Pennisetum* would become established. There is a seasonal component to the die-off of upland plant species during extended flooded periods, and the extent of the die-off is dependent upon volume and magnitude of rainfall events (DoN 2014). Because of the flooded conditions in December 2014, it was not possible to locate soil test pits in areas where wetland vegetation was always present.

3.2.1 Bateha Site BD1

Bateha Site BD1 is the larger of the two Bateha sites. On its south bank, ponded waters abut a steep forested hillside with elevations gradually rising to the east and west. It is dominated by the introduced, sprawling sub-shrub *Mimosa invisa* (facultative upland) during the dry season and also contains small pockets of the introduced shrub *Cassia alata* (facultative upland) along with other weedy species. *Pennisetum polystachion* (facultative upland) and a small area of *Hibiscus tiliaceus* (facultative wet) occur along the perimeter. The only obligate wetland plant species observed at this site is *Ipomoea aquatica*. It comprises a minor component of the wetland plant community and disappears during the dry season. Based on local history, this area was once used as a racetrack.

Table 3 shows select physical and ponding characteristics for this site and Figure 19 depicts the perimeters of the previously ponded water line and existing water line as of December 3, 2014. In January 2013, the estimated area of previously ponded waters was 2.4 ac (0.95 ha), while there were no ponded waters in December 2013 due to dry conditions. Current surveys estimated the area of previously ponded waters in December 2014 to be 2.05 ac (0.83 ha) and existing ponded waters to be 1.71 ac (0.69 ha) (Table 3).

Due to the presence of suitable hydrology, wetland vegetation, and hydric soils and lack of connection to surface drainage features or waters of the U.S., this site may be considered an isolated wetland.

Summary of Site Characteristics for Bateha Site BD1
(see Appendix B, *Field Data Sheets*, for details)

Hydrology

A seasonal connection to groundwater resources is possible as a shallow water table was observed in soil test pit # 3. This shallow depression contained ponded water in December 2014.

Vegetation

Vegetation consisted of flooded upland plant species including *Pennisetim* (facultative upland) and *Cassia alata* (facultative upland). The only obligate wetland plant recorded from this site was *Ipomoea aquatica*. However, it only comprised a very small percentage of the total area of the ponded waters and is thought to disappear when the site becomes dry.

Soils

Because of the flooded conditions in December 2014, excavating soil test pits was only possible along the shoreline at or near the high water mark. Four soil test pits were established and are depicted on Figure 19. No hydric soils were found in test pits #1, #2, and #3. Only test pit # 4 revealed hydric soils below the thick dark surface. Soils at this test pit were mapped as Unit #43 Saipan clay 0-5% slopes. This soil unit meets the criteria for hydric soils (Natural Resources Conservation Service [NRCS] 1990). It is likely that hydric soils could be found elsewhere toward the center of this Bateha site which was flooded during the time of the site investigation and therefore unreachable.

Connectivity to Waters of the U.S.

No surface drainage features were observed leading into/from this crater site or connecting this site with other surface water bodies.

Wetland Classification Type – USFWS NWI

NWI mapped as PEM1A (palustrine, emergent, persistent, temporary flooded) (Figure 8) (USFWS 2014).

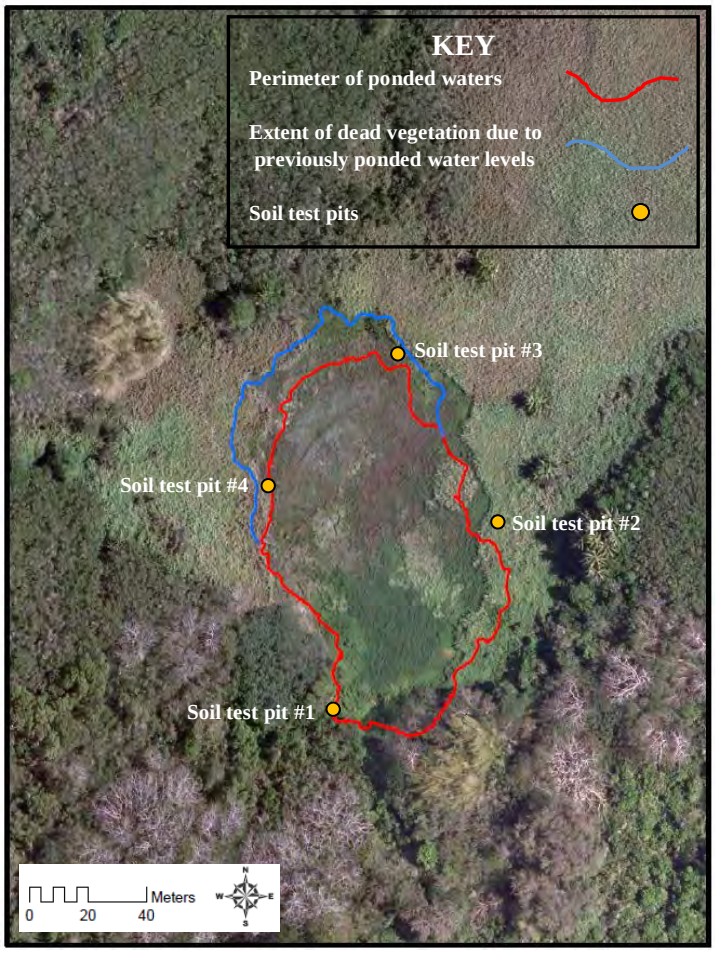

Figure 19. Bateha Site BD1 Depicting the Soil Test Pits and Perimeters of the Previously Ponded Water Line and Existing Ponded Water Line as Mapped on December 2, 2014

(*Notes*: Perimeter of previously ponded waters was defined by the demarcation line of dead vegetation. Data are superimposed onto an undated aerial photograph.)

3.2.2 Bateha Site BD2

Bateha Site BD2 is irregularly shaped and is a relatively deeper depressional basin. There appear to be man-made berms along the south and southeast borders and it has been suggested that this wetland may be an abandoned stock pond (DoN 2014). These berms are dominated by an overstory of the introduced *Acacia confusa* and *P. polystachion*. *Cassia alata* is dispersed throughout the central portion of the basin as a thick impenetrable thicket (DoN 2014). Although this site does support small areas of *Ipomoea aquatica* (obligate), this species has not dominated the plant community since initial observations started in 2012.

Table 3 shows select physical and ponding characteristics for this site and Figure 20 depicts the perimeter of the existing water line as of December 1, 2014. In January 2013, the estimated area of previously ponded waters was 2.7 ac (1.10 ha), while there were no ponded waters in December 2013 due to dry conditions. Current surveys in December 2014 estimated the area of existing ponded waters to be 1.85 ac (0.75 ha) (Table 3).

Due to the presence of suitable hydrology, wetland vegetation, and hydric soils and lack of connection to surface drainage features or waters of the U.S., this site may be considered an isolated wetland.

Summary of Site Characteristics for Bateha Site BD2
(see Appendix B, *Field Data Sheets*, for details)

Hydrology

This shallow depression contained ponded water in December 2014.

Vegetation

Vegetation at the site consisted of a nearly homogeneous stand of *Pennisetum* (facultative upland) with small stands of *Cassia alata* (facultative upland) and small areas of *Ipomoea aquatica* (obligate).

Soils

Soils at this site are mapped as Unit 43 Saipan clay, 0 to 5% slopes. This soil unit is the on list of map units that have small included areas that meet the criteria for hydric soils (NCRS 1990). Hydric soils were found in all five soil test pits.

Connectivity to Waters of the U.S.

No surface drainage features were observed leading into/from this crater site or connecting this site with other surface water bodies.

Wetland Classification Type – USFWS NWI

NWI mapped as PEM1C (*palustrine, emergent, persistent, seasonally flooded*) PEM1A (*palustrine, emergent, persistent, temporary flooded*), and PEM1F (*palustrine, emergent, persistent, semipermanently flooded*) (Figure 9) (USFWS 2014).

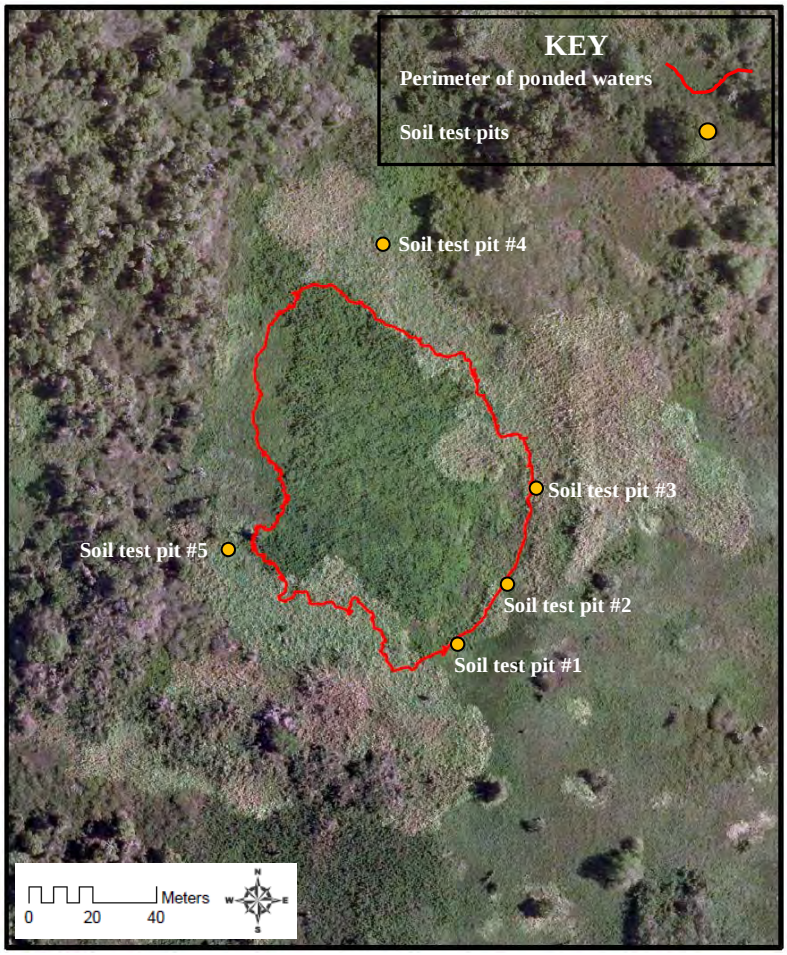

Figure 20. Bateha Site BD2 Depicting the Soil Test Pits and Perimeter of the Existing Ponded Water Line as Mapped on December 1, 2014
(*Note*: Data are superimposed onto an undated aerial photograph.)

3.3 HAGOI WETLAND

Soils at all of the test pit locations revealed essentially the same profile and there were no indications of the presence hydric soils. Soils were identified as Unit 10 Chinen clay loam, 0 to 5% slopes, which is not a soil type that meets the criteria for hydric soils (NRCS 1990). Bits of glass, plastic and other man-made material were also found. This evidence supported the assumption that the area had been heavily disturbed, most likely during construction of the North Field airfield by the U.S. military during WWII.

Vegetation is typical of second growth forest dominated by *Melanolepis*, *Leucaena*, *Guamia*, *Ficus*, and *Casuarina* and upland ferns; none of which are obligate or facultative wet species.

The USFWS NWI map (Figure 12) shows the narrow strip of land between Hagoi Road and the wetland as upland. Field verification concluded that there were no indicators of wetland soils, hydrology, or vegetation at any of the six soil test pits along the west side of Hagoi Road.

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CHAPTER 4
DISCUSSION

Table 4 provides a summary of the findings for the surveys of potential wetland sites at Bateha and Mahalang.

Table 4. Summary of Survey Findings for Select Potential Wetlands of Bateha and Mahalang, and Adjacent to Hagoi, Tinian (December 1-5, 2014)

Site	*USFWS NWI**	*Presence of Obligate Wetland Vegetation?*	*Presence of Hydrological Conditions?*	*Test Pit and Presence of Hydric Soils*	*Site Connected to Waters of the U.S.?*	*Potential Wetland?*
Mahalang MC1	PUBF	No	Yes: crater; ponded water present.	No. 1 – hydric soils No. 2 – hydric soils	No	No
Mahalang MC2	PEMF	No	Yes: crater; ponded water present.	No. 1 – hydric soils No. 2 – hydric soils	No	No
Mahalang MD3	PEM1A	*Yes: Ipomoea aquatica* (dominant)	Yes: depressional; ponded water present.	No. 1 – hydric soils No. 2 – no hydric soils	No	Yes – isolated
Mahalang M07	PEMF	No	Yes: crater; ponded water present.	No. 1 – hydric soils No. 2 – no hydric soils	No	No
Mahalang M10	PUSC	No	Yes: crater; ponded water present.	No. 1 – no hydric soils No. 2 – hydric soils	No	No
Mahalang M11	PEM1A	No	Yes: depressional; evidence of previously ponded waters present in the form of dead upland vegetation.	No. 1 – no hydric soils No. 2 – no hydric soils	No	No
Bateha BD1	PEM1A PEM1C PEM1F	*Yes: Ipomoea aquatica* (minor)	Yes: depressional; ponded water present.	No. 1 – no hydric soils No. 2 – no hydric soils No. 3 – no hydric soils No. 4 - hydric soils	No	Yes – isolated
Bateha BD2	PEM1A	*Yes: Ipomoea aquatica* (minor)	Yes: depressional; ponded water present.	No. 1 – hydric soils No. 2 – hydric soils No. 3 – hydric soils No. 4 - hydric soils No. 5 - hydric soils	No	Yes – isolated
Area between Hagoi wetland and Hagoi Road	Upland	No	No	No	No	Not Applicable

Legend: *PEM1A = palustrine, emergent, persistent, temporary flooded; PEM1C = palustrine, emergent, persistent, seasonally flooded; PEM1F = palustrine, emergent, persistent, semipermanently flooded; PEMF = palustrine, emergent, semipermanently flooded; PUBF = palustrine, unconsolidated bottom, semipermanently flooded; PUSC = palustrine, unconsolidated shore, seasonally flooded.

4.1 MAHALANG COMPLEX

4.1.1 Mahalang Site MC1

Site MC1 is an isolated crater within forest, and although hydric soils may exist due to repeated ponding of water, wetland plants have not become established. This isolated crater is not a typical "wetland" area. Although the site exhibited the hydrology and hydric soils criteria, due to the absence of wetland vegetation and lack of connection to surface drainage features or waters of the U.S., Site MC1 is not considered a wetland.

4.1.2 Mahalang Site MC2

Site MC2 is an isolated crater within forest and although hydric soils may exist due to repeated ponding of water, wetland plants have not become established. This isolated crater is not a typical "wetland" area. Although the site exhibited the hydrology and hydric soils criteria, due to the absence of wetland vegetation and lack of connection to surface drainage features or waters of the U.S., Site MC2 is not considered a wetland.

4.1.3 Mahalang Site MD3

Due to the presence of suitable hydrology, wetland vegetation, and hydric soils and lack of connection to surface drainage features or waters of the U.S., depressional Site MD3 may be considered an isolated wetland.

4.1.4 Mahalang Site M07

Site M07 is an isolated crater within forest and although hydric soils may exist due to repeated ponding of water, wetland plants have not become established. This isolated crater is not a typical "wetland" area. Although the site exhibited the hydrology and hydric soils criteria, due to the absence of wetland vegetation and lack of connection to surface drainage features or waters of the U.S., Site M07 is not considered a wetland.

4.1.5 Mahalang Site M10

Site M10 is an isolated crater within forest and although hydric soils may exist due to repeated ponding of water, wetland plants have not become established. This isolated crater is not a typical "wetland" area. Although the site exhibited the hydrology and hydric soils criteria, due to the absence of wetland vegetation and lack of connection to surface drainage features or waters of the U.S., Site M10 is not considered a wetland.

4.1.6 Mahalang Site M11

Although Site M11, a depressional basin, exhibited the hydrology criteria, due to the absence of hydric soils and wetland vegetation and lack of connection to surface drainage features or waters of the U.S., this site is not considered a wetland.

4.2 BATEHA SITES

4.2.1 Bateha Site BD1

Due to the presence of suitable hydrology, wetland vegetation, and hydric soils and lack of connection to surface drainage features or waters of the U.S., Site BD1 may be considered an isolated wetland.

4.2.2 Bateha Site BD2

Due to the presence of suitable hydrology, wetland vegetation, and hydric soils and lack of connection to surface drainage features or waters of the U.S., Site BD2 may be considered an isolated wetland.

4.3 HAGOI WETLAND

Field verification concluded that there were no indicators of wetland soils, hydrology, or vegetation at any of the six soil test pits along the west side of Hagoi Road.

CHAPTER 5
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CHAPTER 6
LIST OF PREPARERS

This report was prepared by Cardno under contract with NAVFAC Pacific. The primary Navy individual who contributed to the review of this document includes:

NAVFAC Pacific, Joint Base Pearl Harbor-Hickam, HI
Angela Anders, PhD – Fish and Wildlife Biologist, Navy Technical Representative

The professional staff responsible for conducting the surveys and the preparation of this document are:

Cardno, Honolulu, HI
Melanie Hernandez, JD – Project Manager
Rick Spaulding, MS – Natural Resources Task Manager, Senior Biologist

MES, Saipan, CNMI
John Gourley, MS – Principal Investigator

DW Consulting, Guam
Dan Wooster, MS – Field Biologist and Wetland Soils Specialist

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APPENDIX A:

PHOTOGRAPHS OF EACH SITE DURING THE 2014 SURVEY AND A REPRESENTATIVE DRY SEASON

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Figure A-1. Photograph of MC1 site taken on December 4, 2014 showing high ponded water levels during the survey period.

Figure A-2. Photograph of MC1 taken on July 17, 2013 showing dominance of upland field vegetation.

Figure A-3. Photograph of MC2 taken on December 4, 2014 during the survey period.

Figure A-4. Photograph of MC2 taken on July 17, 2013 showing dominance of upland open field vegetation.

Figure A-5. Photograph of MD3 taken on December 3, 2014 showing dominance of *Ipomoea aquatica* mats that overlie ponded waters.

Figure A-6. Photograph of MD3 taken on July 4, 2013 showing a significant decrease in the dominance of *Ipomoea aquatica*.

Figure A-7. Photograph of M07 taken on December 4, 2014 showing the high ponded water levels during the survey period.

Figure A-8. Photograph of M07 taken on July 17, 2013 showing a dominance of upland open field vegetation.

Figure A-9. Photograph of M10 taken on December 4, 2014 during the survey period.

Figure A-10. Photograph of M10 taken on August 18, 2013 showing dominance of upland open field vegetation.

Figure A-11. Photograph of M11 taken on December 3, 2014 showing dead vegetation as a result of previously ponded waters during the survey period.

Figure A-12. Photograph of M11 taken on July 4, 2013 showing site dominated by upland open field vegetation.

Figure A-13. Photograph of BD1 showing level of ponded waters on December 2, 2014. Dead upland vegetation from previously ponded waters is shown in background.

Figure A-14. Photograph of BD1 taken on July 3, 2013 showing open field (upland) vegetation dominating the landscape.

Figure A-15. Photograph of BD2 taken on December 1, 2014 showing level of ponded waters during the survey period.

Figure A-16. Photograph of BD2 on July 16, 2013 showing no ponded waters with the formerly flooded area dominated with open field vegetation.

APPENDIX A:

FIELD DATA SHEETS

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MC1
M6 #1

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-4-14 Time: 0830

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M6 #1

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): BOMB CRATER SLOPE Local relief (concave, convex, none): CONCAVE

Lat: _____ Long: _____ Datum: _____ Slope (%): 45

Soil Map Unit Name: Dandan saipan clay #23 NWI classification: PUBF

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? NO Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.) BOMB CRATER

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: There was NO wetland vegetation present - soils clearly hydric hydrology & meets criteria

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ~~100x100~~)	Absolute % Cover	Dominant Species?	Indicator Status
1. ring around shoreline			
2. Pithecellobium dulce	2	NO	UPL
3. leucaena	2	NO	UPL
4.			
5. Melanolepis	20	yes	UPL
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. Carica papaya			UPL
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: _____)			
1.			
2. Pennisetum			FACU
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

NO OBL or FACW at all - upland forest surrounds crater to shoreline - ~~some~~ water level high - to high water mark - ring along shoreline with little vegetation

MC 1

SOIL

Sampling Point: M6 #1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR4/4	100					fine silty clay	
4-16	4YR4/4	>80	2YR3/6	12+	C	M		
		~~20~~	7YR6/	~~30~~ 12+	C	M	fine most	very moist

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- (X) Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: deep steep sided crater, flooded to a few feet from high water mark NO emergent vegetation. hole 2.5 feet from shoreline very moist silty clay A from 4" depleted matrix with yellow and red concentrations

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches):

Water Table Present? Yes ___ No ___ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: Strange site - area sampled was on steep side of crater at high water mark

MC 1
M6 #2

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-4-14 Time: 0900

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M6 #2

Investigator(s): Dan Wooster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Bomb CRATER SHORE Local relief (concave, convex, none): CONCAVE

Lat: _____ Long: _____ Datum: _____ Slope (%): 45

Soil Map Unit Name: Dandan Saipan clay NWI classification: PUBF

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? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) BOMB CRATER

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: same as #1 - steep sided crater w/out wetland vegetation - meets hydrology criteria

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: RING 10' wide around shore)	Absolute % Cover	Dominant Species?	Indicator Status
1. Leucaena		ND	UPL
2. Pithecellobium		ND	UPL
3.			
4. Melanolepis			
5.		X	UPL
	= Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. Carica Papaya			UPL
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: _____)			
1.			
2. Pennisetum			FACU
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: all plants UPL or FACU - upland forest surrounds crater with little vegetation - plot ~~size~~ is along shoreline at waters edge

MC 1

SOIL

Sampling Point: M6 #2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5YR/3/4	100					blocky	
6-16	5YR/3/4	50	7YR4/4	25				
			7YR4/8	25	RM		silty clay	blocky

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: deep steep sided crater flooded to high water mark - soils are similar to ~~#2~~ #1 depleted matrix with yellow and red concentrations

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches):

Water Table Present? Yes X No ___ Depth (inches):

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: strange site - area sampled is ON steep slope - at high water mark - meets ~~secondary~~ criteria

MOT #1

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-4-14 Time: 0905

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: ___

Investigator(s): Dan Worster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Bomb Crater Local relief (concave, convex, none): CONCAVE

Lat: _____ Long: _____ Datum: _____ Slope (%): 45%

Soil Map Unit Name: Dandan Saipan Clay #23 NWI classification: PEMF

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? NO Are "Normal Circumstances" present? Yes X No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.) BOMB CRATER

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Vegetation criteria NOT MET - upland forest surrounds flooded pond - Dead PENNISETUM IN CRATER

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 50 x 50)	Absolute % Cover	Dominant Species?	Indicator Status
1. Melanolepis			UPL
2.			
3. Pithecellobium dulce			UPL
4. Pandanus fragrans			NI
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2. Pennisetum			FACU
3.			
4. Lantana camara			UPL
5.			
6. Fern (Nephrolepis)			FAC/FACU
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: NO HYDROPHYTIC PLANTS - PLOT IS ALONG SHORELINE - dead PENNISETUM IN CRATER

SOIL

Sampling Point: M7 # 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	5YR3/3	99	red	less than 1	C	M	silty clay	
3-16	5YR4/6	80	5YR3/2	1	C			
			2.5YR4/1	19	D	M		redox features variegated within matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

Meets hydric soil criteria

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches):

Water Table Present? Yes ____ No ____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks:

Meets hydrology criteria

SOIL

Sampling Point: MOH #2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	5YR 3/4	99	5YR 4/6	less than 1	C	M	Fine silty clay	
7-16	5YR 3/4	95	5YR 4/6	1	C			
			yellow?	3	D			

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks: NOT HYRIC - DIFFICULT TO DETERMINE - IT IS LIKELY THAT IF SOIL IS TESTED FURTHER DOWNSLOPE WHEN WATER LEVEL IS LOWER THAT HYDRIC SOIL WILL BE LOCATED

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches):

Water Table Present? Yes ____ No ____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: MEETS HYDROLOGY CRITERIA

MOM #2

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-4-14 Time: 0945

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: ___

Investigator(s): Dan Wooster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): SLOPE EDGE OF CRATER Local relief (concave, convex, none): CONVEX

Lat: _____ Long: _____ Datum: _____ Slope (%): 45%

Soil Map Unit Name: Dandan soil and clay NWI classification: PEMF

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? NO Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.) BOMB CRATER

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Flooded Bomb crater –

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3. Melaleuca leprs			OPL
4.			UPL
5. Pithecellobium dulce			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: _____)			
1.			
2. Pennisetum			FACU
3.			
4. Lantana			
5.			
6.			
7.			
8.			
		= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: NO HYDROPHYTIC PLANTS PRESENT – PLOT IS ALONG SHORELINE
DEAD ~~Sterile~~ PENNISETUM IN FLOODED PORTION OF CRATER

MC2
M28#1

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-4-14 Time: 10 15

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M28 1

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Bomb Crater Local relief (concave, convex, none): CONCAVE

Lat: _____ Long: _____ Datum: _____ Slope (%): 45

Soil Map Unit Name: Jarvis Saipan clay #23 NWI classification: PEMF

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? NO Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.) BOMB CRATER

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Very steep sided bomb crater, partially flooded - dead wetland vegetation on edge and less flooded side - hydric soils

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: edge of pond 15' wide)	Absolute % Cover	Dominant Species?	Indicator Status
1.		X	
2. Melanolepis	5		UPL
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. Carica papaya			UPL
3. Leucaena	2		UPL
4. guamia	2		UPL
5.	2		
	= Total Cover		

Herb Stratum (Plot size: _____)			
1.			
2. dead pennisetum	50%		
3.			
4.			
5.			
6.			
7.			
8.	50%		
	= Total Cover		

Woody Vine Stratum (Plot size: _____)			
1. Mikania	30%	X	UPL
2.			
	30 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: upland forest to bare waters edge - dead pennisetum at less flooded area - No FACW obl spp - "plot" is difficult to because of wind

MC2

SOIL

Sampling Point: M28 #1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5"	5YR3/3	99	5YR4/6	<1%	C	M	blocky fine silt	
								no distinct horizon
5-15+	5YR 3/3							bot of change
	7.5YR 9/6	99	5YR 4/6	<1%	D	M		See photo 40158

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: steep sided crater, hole dug along dry shoreline 2.5 feet from shore - very likely that when crater is dry that very hydric soils will be found - difficult call - used photos

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches):

Water Table Present? Yes ___ No ___ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: drainage channel into it - partially inundated

MC 2
M 28 # 2

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-4-14 Time: 1029

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M28 2

Investigator(s): Dan WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Bomb crater Local relief (concave, convex, none): CONCAVE

Lat: _____ Long: _____ Datum: _____ Slope (%): 45

Soil Map Unit Name: Dandan saipan clay #23 NWI classification: PEMF

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? NO Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.) Bomb crater

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: very steep sided bomb crater, partially flooded with dead upland vegetation in water and a

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: edge of pond 15' wide)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3. Malanocepis	5	yes	FACU
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. grama	5		UPL
3. Cenchrus	1		UPL
4. Momordica cha	1		UPL
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Pennisetum (dead)	50		FACU
2. [illegible]			
3. Melanocepis ~~multigranulosa~~			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2. Mikania	5		FACU
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

- 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: at shoreline w/out vegetation - further up slope is upland forest - this is same plot as #2 - in water dead pennisetum plot includes open water, dead pennisetum, bare shoreline, forest all within a few feet

MC2

SOIL

Sampling Point: M28 #2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	5YR 2.5/2	100					blocky pipes	
5-14	7.5YR 7/6	90	5YR 4/6	10	D	M		yellow depletions below

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: Hydric soil present depleted below dark surface

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches):

Water Table Present? Yes ___ No ___ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches):

Wetland Hydrology Present? Yes X (see remarks) No

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

Remarks: drainage into crater - sides of crater are steep but there is an area between water surface and vegetation w/o plants

MID #1

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-3-14 Time: 0808

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: MID #1

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Bomb crater slope Local relief (concave, convex, none): CONCAVE

Lat: _____ Long: _____ Datum: _____ Slope (%): 45%

Soil Map Unit Name: Dandan saipan clay #23 NWI classification: PEM1A

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? NO Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.) BOMB CRATER

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: This is a crater, steep sided with upland veg to waters edge - The flooded area is open water with some flooded upland veg - NOT a natural land scape feature - hydric soil likely further downslope

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ENTIRE CRATER)	Absolute % Cover	Dominant Species?	Indicator Status
1. Leucaena			UPL
2.			
3. ~~Rhizophora~~			
4. Pithecellobium dulce			UPL
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Pennisetum p.			FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Mikania Scandeps			FACU
2. Clitoria			UPL
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Area is on slope ≈ 3 ft from waters edge - The "plot" is the entire crater shoreline - difficult to sample due to slope and slippery conditions

SOIL

Sampling Point: M10 #1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	5YR3/3	100					Mucky clay	
3-16	5YR4/6	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- X Muck Presence (A8) NO
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

does not meet criteria - Too far upslope? Hydric soils are likely present further downslope during dryer conditions no distinct horizon (dark surface)

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): at pond

Water Table Present? Yes X No ___ Depth (inches): shore

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks:

Meets Hydrology criteria

M10 #2

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATIO City: _____ Sampling Date: 12-3-14 Time: 0940

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M10 #2

Investigator(s): Dan Wooster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): BOMB CRATER Local relief (concave, convex, none): CONVEX

Lat: _____ Long: _____ Datum: _____ Slope (%): 45%

Soil Map Unit Name: Dandan Saipan clay # 23 NWI classification: PEMIA

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? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.) BOMB CRATER

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: NO Hydrophytic veg present – soils and hydrology meet criteria – SITE IS FLOODED TO HIGH WATER MARK – High water

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: entire edge of pond)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Leucaena	25	X	UPL
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2. Pennisetum		X	UPL
3.			
4. Lantana camara			UPL
5.			
6. Polypodium scolopendria			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Canavalia Megalantha		UPL	
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: PLOT IS along shoreline of crater – NO vegetation where hole is – ON area between water and high water mark

SOIL

Sampling Point: M 10 #2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR	3/6					silty clay	
3-16	10YR 7/8	yellow 100%	Depletion matrix					

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

depleted below dark surface

Hydric soil present

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches):

Water Table Present? Yes ____ No ____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks:

MD2
M11 #1

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-3-14 Time: 0710

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M11 #1

Investigator(s): Dan Wooster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Elevated plateau Local relief (concave, convex, none): none/ slight depression

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Dandan Chinen complex #19 NWI classification: PEMA

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Area sampled in center of large previously flooded(?) site – Even though hydrological indicators are present soils are well drained and veg is FACU

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 100 X100')			
1. _____			
2. NO TREES			
3. _____			
4. _____			
5. _____			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 50'X50')			
1. _____			
2. _____			
3. NO SHRUBS			
4. _____			
5. _____			
	_____ = Total Cover		
Herb Stratum (Plot size: 50'X50')			
1. _____			
2. Mimosa pudica (dead)	95	X	FACU
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
	_____ = 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: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Large area with dead (dry flooding) Mimosa = FACU

MD2

SOIL

Sampling Point: Mil #1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	7.5YR 3/3	100					silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: NONE

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

NO HORIZONS, NO CONCENTRATIONS - very THIN organic layer THAN 16" UNIFORM dark reddish less than 1% very small dark hard concretions

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes X No *

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

Remarks:

* AT time of survey there was NO water present even though other sites on project were flooded to near capacity (high water mark) - hydrology may be marginal and percolation is rapid

MD2
M11 #2

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-3-14 Time: 0735

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M11 2

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): elevated plateau Local relief (concave, convex, none): _____

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Dandan chinan complex NWI classification: PEMIA

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: area sampled is within previously flooded(?) stand of mimosa - soils are not hydric, veg is not hydric and hydrology is marginal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. NO TREES			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3. NO SHRUBS			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 100x100)			
1.			
2. 100% dead mimosa pudica		90	FACU
3.			
4. new growth of Momordica charantia			
5. # coming up in some locations			FAC
6. very sparse		10	
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No NO

Remarks: strange area - covered with dead (by flooding?) mimosa = FACU

MD2

SOIL

Sampling Point: M11 #2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR 3/4	100					silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: very thin organic layer - no horizons, depletions - soil is well drained

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No NO Depth (inches):

Water Table Present? Yes _____ No NO Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No NO Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: site sampled is within area of dead mimosa - Flooding appears to be temporary but long enough to kill off the mimosa

MD3
M20#1
12-3-14

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: _____ Time: 0930

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M20#1

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Elevated Plateau Local relief (concave, convex, none): _____

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Laolao clay UNIT 31 NWI classification: PEMIA

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: SMALL AREA (75'x75') of homogeneous Ipomoea Aquatica (OBL) within a MUCH LARGER AREA dominated by Pennisetum. "wetland is present where vegetation (obl and FACW-) is present

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: Many Acres)	Absolute % Cover	Dominant Species?	Indicator Status
1. NO TREES PRESENT			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: Many Acres)			
1. NO SHRUBS PRESENT			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 75'x75')			
1. Ipomoea aquatica remote		X	OBL
2.			
3. Brachiaria mutica sel note			FACW
4. PASPALUM CONJUGATUM			W
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = 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: _____ (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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: THERE IS A SMALL AREA DOMINATED BY OBL Ipomoea aquatica. A MUCH LARGER AREA (acres) OF THE DEPRESSION IS FLOODED PURE PENNISETUM (FAC U) - Because of flooding mapping hydric soils / veg is not possible

MD3
M20 #1

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5"	5YR 2.5/2	98	5YR 2.5/1	2+	C			
5-16								
(WATER IN HOLE)	5YR 4/6	98	black concretions	2	C			

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: Depleted below dark surface

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches):

Water Table Present? Yes X No ___ Depth (inches):

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: GROUNDWATER IN TEST PIT - meets hydrology criteria

MD3
M20#2
12-13-14

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-3-14 Time: 1020

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: M20#2

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): _____ Local relief (concave, convex, none): SIDE OF SLOPE above Flood

Lat: _____ Long: _____ Datum: _____ Slope (%): 6%

Soil Map Unit Name: _____ NWI classification: _____

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

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

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: LOCATION OF TEST PIT IS ON SLOPE @ 3' ABOVE FLOODED PENNISETUM DOMINATED DEPRESSION. NOT able TO dig downslope because of flooding

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. NO TREES			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3. NO SHRUBS			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3. Pennisetum p.	100		FACU
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: area sampled was just upslope of flooded Pennisetum field across (500') from Ipomoea wetland

MD3
M 20 H 2
12-3-14

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5YR 3/4	100	red → 5YR 3/1	>10%			silty	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: TEST PIT TOO FAR UP SLOPE TO AVOID FLOODED AREA — NO concentrations or depletions

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes _____ No X

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

Remarks: too far up slope to avoid flooded level area so we could sample soils

BD1

BATEA RACEWAY #1

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-2-14 Time: 0945

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: BR 1

Investigator(s): Dan WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): level area at Plateau Local relief (concave, convex, none): Level

Lat: _____ Long: _____ Datum: _____ Slope (%): LEVEL

Soil Map Unit Name: Saipan clay #43 NWI classification: PEM1A

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?**	**Yes** _____ **No** X
Hydric Soil Present?	Yes _____ No X		
Wetland Hydrology Present?	Yes X No _____		

Remarks: area is at base of steep hillside - Hibiscus (FACW-) dominate along shoreline then Melanolepis further up slope - soils are not Hydric - MEETS WL HYDROCOGY CRITERIA

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 50X50)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. Hibiscus		X	FACW-
3. Melanolepis		X	UPL
4. Ficus p.			FAC
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. Leucaena			UPL
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2. MIKANIA			
	_____ = 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: _____ (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:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

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

Remarks: PLOT IS ON BARE EARTH W/O VEGETATION AT WATERS EDGE Hibiscus tiliaceus (FACW-) IS DOMINANT FURTHER UPSLOPE - VEGETATION GOES FROM Hibiscus TO Melanolepis - MARGINALLY MEETS CRITERIA DEPENDING ON PLOT SIZE

BD1

Batea Raceway #1

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5YR3/3	100					Silty clay	NO HORIZONS

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

approximately 3-4 feet from waters edge - uniform silty clay without dark surface, concentrations or depletions

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches):

Water Table Present? Yes _____ No _____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks:

HYDROLOGY CRITERIA IS MET

BD1

SOIL

Sampling Point: Bata raceway #2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	dense veg mat							
4-20	5YR 3/4	96	5YR 4/6	1	C	M		NO DISTINCT
			5YR 3/1	5	C	M		HORZONS

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

DOES NOT MEET CRITERIA

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches):

Water Table Present? Yes ____ No ____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: Hydrology criteria met

BD1 BATEA RACEWAY #2

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-2-14 Time: 1005

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: ___

Investigator(s): Dan WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): level area on plateau Local relief (concave, convex, none): level

Lat: _____ Long: _____ Datum: _____ Slope (%): _____

Soil Map Unit Name: Saipan clay #43 NWI classification: PEMA

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No _____	

Remarks: area sampled is in homogeneous Pennisetum field just upslope from flooded Pennisetum field – NOT WETLAND SOILS OR VEG.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____			
2. NONE			
3. _____			
4. _____			
5. _____			
_____ = Total Cover			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____			
2. _____			
3. NONE			
4. _____			
5. _____			
_____ = Total Cover			
Herb Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. Pennisetum p.	100	X	FACU
5. _____			
6. _____			
7. _____			
8. _____			
95 = Total Cover			
Woody Vine Stratum (Plot size: _____)			
1. Mikania scandens	less than 5%		
2. _____			
_____ = Total Cover			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Hydrophytic vegetation NOT present - Homogeneous stand of FACU

BD1 BATEA RACEWAY #3

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-2-14 Time: 1045

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: ___

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): level area at Plateau Local relief (concave, convex, none): Level

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Saipan Clay # 43 NWI classification: PEM 1A

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Area sampled is in patch of Pennisetum willed - NO FACW or OBL spp. Hydrology meets criteria - soils do not

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 50 X 50')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3. NO TREES			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3. Cassia alata		NO	FACU
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2. Pennisetum (dead)	100	100	FACU
3.		yes	
4. ~~Cassia alata~~			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: area is on dry ground up slope from flooded Pennisetum field - Pennisetum is dead from flooding

BD1

BATEA RACEWAY
#3

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	dense veg mat							
3-15	5YR 3/3	100					silty clay	no distinct horizons but gra dbl change to 4/4R 4/4

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Test pit quickly flooded to 15" and rising during survey-it is likely that hydric soils occur a bit downslope on deeper than water table during dryer conditions

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches):

Water Table Present? Yes X No _____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: water table is shallow – test pit quickly filled with water

BD1 BATEA RACEWAY #4

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-2-14 Time: 1100

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: ___

Investigator(s): DAN DOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Level area at Plateau Local relief (concave, convex, none): Level

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Saipan clay #43 NWI classification: PEM1A

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes ___ No X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks: Level area with dead Pennisetum - OCG criteria is NOT MET

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 50'x50')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2. Pennisetum	100	YES	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: Plot is within previously flooded and killed Pennisetum (FACU) field

BD1 BATEHA RACEWAY #4

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR 2.5/1	~~100~~ 90	7.5YR 2/1	5	M		silty clay	
4-16	7.5YR 5/6	20	7.5YR 2/1	80	M		silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- X Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

WATER TABLE AT 16" - MEETS ALL CRITERIA DEPLETED BELOW DARK SURFACE distinct boundary at 4 inches from surface to yellow depleated area

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches):

Water Table Present? Yes ____ No ____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks:

shallow water table, vegetation indicates flooding

BD2
BATEA #1

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-1-14 Time: 1230

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: B1

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): plateau adjacent to hillside Local relief (concave, convex, none): level

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Saipan clay # 43 NWI classification: PEM1C

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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X see note
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: area sampled is at edge of pooled area - flat area along shoreline open water beyond - likely wetland veg offshore in flooded area

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 50x50)	Absolute % Cover	Dominant Species?	Indicator Status
1. NO TREES			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. NONE			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 20 X 20)			
1. ~~BARE~~			
2.			
3. Pennisetum	80		FACU
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Mikania	20		FACU
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Pennisetum (FACU) and Mikania (FACU) large area - dominated by Mikania open water at flooded area - does not meet hydrophytic criteria - open water w/o emergent veg - but further offshore there are sedges and Ipomoea

BD 2
Bateau

SOIL

Sampling Point: B1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5YR 3/2	80	2.5YR 5/8	20	C	M	Silty clay	NO horizons
			2.5YR 3/1	<1%	C	M		but concentrations
								increase w/ depth

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

Test Pit at edge of open water - hydric soil w/ gray and red concentrations - indicators present near surface - not much of a dark surface

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches):

Water Table Present? Yes ____ No ____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: water marks, surface water, stressed plants

BD2
Bodea #2

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-1-14 Time: 1252

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: B2

Investigator(s): Dan Wooster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Elevated Plateau Local relief (concave, convex, none): NONE

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Saipan Clay #43 NWI classification: PEMIC

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?**	Yes X (see remark) No _____
Hydric Soil Present?	Yes X No _____		
Wetland Hydrology Present?	Yes X No _____		

Remarks: Point of plot is likely wetland - could not test soils at flooded area where Hydrophitic veg is present

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 50X50)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2. NO TREES			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. Cassia alata	20		FACU
3.			
4. 30% open water			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3. Sedge in water	15	FACW	
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Ipomoea in water	5	OBL	
2. floating Mikania			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks: This plot is 30+% open water with OBL + FACW - where test pit dug it is FACU Mikania FACU - all shows there are floating

BD2

SOIL

Sampling Point: B2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	2.5Y R3/2	80	2.5Y R 4/8	20	C	M	silty clay	
2-20	2.5Y R3/2	70	2.5Y R4/8	30	C	M	silty clay	
			2.5Y R 3/1	<10	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- Ø Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: Red and small dark concentrations

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ✓ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 0-3'

Water Table Present? Yes ___ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches):

Wetland Hydrology Present? Yes X No

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

Remarks: site is at edge of open water w/ stunted veg and drift deposits.

BD2
B3
Batea #3

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-1-14 Time: 1545

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: B3

Investigator(s): DAN WOOSTER TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Plateau Local relief (concave, convex, none): flat w/slight slope

Lat: _____ Long: _____ Datum: _____ Slope (%): 3%

Soil Map Unit Name: Saipan clay #43 NWI classification: PEM1C

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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes ?	No _____	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: went too far upslope to avoid flooding - but ground water encountered at near surface - soil appears hydric but only able to sample surface

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 50x50')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3. NO TREES			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 50 x50)			
1.			
2. Pennesetum	50	X	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: 50x50)			
1. Mikania	50	X	FACU
2.			
	100 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X seasonal

Remarks: Near hole in flooded area there is a large stand of Cassia alata (FACU) and Ipomoea aquatica (OBL) - it is likely that that there is an area which meets criteria at flooded area - sample site is FACU

BD2

SOIL

Sampling Point: B3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	5YR 3/4	80	2.5yr 4/8	20	C	M	silty clay	water table
			2.5yr 3/1	<1%				present
8-water								water table encountered
8-water	5YR 3/4	70	2.5YR 4/8	30	C	M	silty clay	but redox features
			2.5YR 3/1	<1%	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X? No

Remarks:

WATER TABLE ENCOUNTERED at 8" - redox features evident below surface; red and few dark concentrations

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 8" from surface

Water Table Present? Yes X No ___ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches):

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

No secondary indicators but on sloping land with saturated surface just flooded with high water table

BD 2
Batea #4

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-1-14 Time: 1610
Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: B4
Investigator(s): ~~Plateau~~ Dan WOOSTER TMK/Parcel: _____
Landform (hillslope, coastal plain, etc.): Plateau Local relief (concave, convex, none): level
Lat: _____ Long: _____ Datum: _____ Slope (%): 0-1
Soil Map Unit Name: Saipan clay #43 NWI classification: PEM1C
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? NO Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: Vegetation does not meet criteria - Hydrology w/out any indicators too far from flooded area

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 100 x 100)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3. NO TREES			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3. NO SHRUBS			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 50x50)			
1.			
2. Pennisetum	50	X	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Mikania	50	X	FACU
2.			
	100 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
Total Number of Dominant Species Across All Strata: _____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:
X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: all FACU, no OBL FAC or FACW

BD2

SOIL

Sampling Point: B4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	80	5YR4/4	20	C	M	silty clay	
3-15+	10YR3/4	70	2.5YR4/6	10	C	M		
			2.5YR3/1	20	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: Meets hydric criteria but only thin dark surface

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches):

Water Table Present? Yes ____ No ____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches):

Wetland Hydrology Present? Yes ____ No X

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

Remarks: TOO FAR UPSLOPE TO AVOID FLOODED AREAS

BD2
Batea #5

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: TINIAN WETLAND DETERMINATION City: _____ Sampling Date: 12-1-14 Time: 1700
Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: TINIAN Sampling Point: BS
Investigator(s): Dan WOOSTER TMK/Parcel: _____
Landform (hillslope, coastal plain, etc.): Plateau Local relief (concave, convex, none): Level w/ slight slope
Lat: _____ Long: _____ Datum: _____ Slope (%): 3%
Soil Map Unit Name: Saipan clay #43 NWI classification: PEM1C
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? NO Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: Hydrology and Vegetation do NOT meet criteria - soils do

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 50X50)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3. NO TREES			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. NO SHRUBS			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 20X20)			
1.			
2.			
3. Peniscetum	75%	X	FACU
4.			
5.			
6.			
7.			
8.			
	~~100~~ 75 = Total Cover		
Woody Vine Stratum (Plot size: 20X20)			
1.			
2. Mikania	25		FU
	100 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
Total Number of Dominant Species Across All Strata: _____ (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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:
X 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
ALL FACU - TOO FAR UPSLOPE (flooded further down) -

BD2

SOIL

Sampling Point: B-5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	5YR3/4	90	5YR3/1	10	C	M	silty clay	
								red and black
4-16	5YR3/4	60	2.5YR4/8	20	C	M		CONCENTRATIONS IN MATRIX
			2.5YR3/1	20	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: Meets Hydric soil criteria barely - redox concentrations in matrix below dark surface

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ____ Depth (inches):

Water Table Present? Yes ____ No ____ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches):

Wetland Hydrology Present? Yes ____ No X

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

Remarks: Test pit above flooded area on gently ~~flooded~~ sloping ground NO INDICATORS PRESENT - FLOODED FURTHER DOWN WHERE INDICATORS ARE PRESENT

Hagoi Road #1

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: Tinian wetlands determination City: _____ Sampling Date: 12-1-14 Time: 0720

Applicant/Owner: U.S. Navy State/Terr/Comlth.: Tinian Island: Tinian Sampling Point: H-1

Investigator(s): Dan Wooster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Level Plateau Local relief (concave, convex, none): Level

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Chinen clay loam 0-5% slopes UNIT 10 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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: This site is clearly not wetland- it is upland second growth forest

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 100 x 100')	Absolute % Cover	Dominant Species?	Indicator Status
1. Melanolepis	20	yes	UPL
2. Leucaena	20	yes	UPL
3. Pithecellobium	20	yes	UPL
4.			
5.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 50'2)			
1.			
2. Leucaena			UPL
3.			
4.			
5.			
	_____	= Total Cover	
Herb Stratum (Plot size: 10 x 10')			
1.			
2.			
3.			
4. polypodium scolopendria			FACU
5.			
6. Nephrolepsis sp			FAC
7.			
8.			
	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____	= 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: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: upland forest NO OBL/FACW most plants are not on list (=UPL)

Hagoi Road #1

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5/3 (5YR)	100					Loam	Loamy "Topsoil"
12-16	7.5YR 4/4	100					Hard packed clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Clearly not hydric soil

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Hagoi Road #2

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: Tinian Wetland Determination City: _____ Sampling Date: 12-1-14 Time: 0745

Applicant/Owner: U.S. Navy State/Terr/Comlth.: Tinian Island: Tinian Sampling Point: H2

Investigator(s): Dan Worcester TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Level Plateau Local relief (concave, convex, none): None

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Chiuan clay loam 0-5% slopes unit 10 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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: clearly not wetland up land forest, loamy well drained soil, no wet hydrology

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. Melanolepis			UPL
2. Delonix			UPL
3. Casuarina			FACU
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. Eugenia sp			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2. Fern polypodium scolopendria			FACU
3.			
4. Nephrolepis			FAC or FACU
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Rosary pea Abrus			
2. precatorius			UPL
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: clearly upland second growth forest most plants are not listed (=UPL) or FACU

Hagoi Road #2

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	7.5YR 2.5/3	100					Loose loam	friable
10-16+	5YR 3/4	100						NO DISTINCT HORIZONS to hand packed clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

well drained loamy soil without concentrations, depletions etc

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Hagoi Road #3

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: Tinian Wetland Determination City: _____ Sampling Date: 12-1-14 Time: 0910

Applicant/Owner: U.S. Navy State/Terr/Comlth.: CNMI Island: Tinian Sampling Point: H3

Investigator(s): Dan Worcester TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Level plateau Local relief (concave, convex, none): none

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Chinen clay loam 0-5% slopes UNIT 10 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? no Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: This site is clearly not wetland; upland second growth forest well drained soils, hydrology not present

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 100x100)	Absolute % Cover	Dominant Species?	Indicator Status
1. Melanolepis			UPL
2. Casuarina			FACU
3.			
4. ~~old~~ albizia			UPL
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2. Fenn ~~Pteris vitta~~			
3. Nephrolepis s.p			FAC↑FACU ~~FAC↑UPL~~
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Mikania scandens			FACU
2. rosary pea Abrus precatorius			UPL
	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Clearly upland second growth forest - all plants are UPL or FACU

Hagoi Road #3

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2.5/3	100					Loam	No Horizons
12-17+	5YR 3/4	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: well drained loamy soil without concentrations or depletions

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes _____ No X

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

Remarks: level well drained

Hagoi Road #4

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: Tinian Wetland Determination City: _____ Sampling Date: 12-1-14 Time: 0925

Applicant/Owner: _____ State/Terr/Comlth.: CNMI Island: Tinian Sampling Point: #4

Investigator(s): Dan Webster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Level Plateau Local relief (concave, convex, none): none

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Chinen clay loam 0-5% slope Unit 10 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? NO Are "Normal Circumstances" present? Yes X No _____

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: This site is clearly not wetland, upland forest well drained soil

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Melanolepis		X	UPL
2. Ficus sp	<1%		FAC
3. Pithecellobium dulce			UPL
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. guamia			UPL
2. Morinda			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2. Fern ~~Pteris vitta~~			
3. Nephrolepis sp			FAC or FACU
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Mikania scandens			FACU
2. Rhus pycnantius			UPL
~~Hot Dead, rosary~~ Entada pursaetha	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Clearly second growth upland forest all plants are upl or FACU

Hagoi Road #4

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-19+	5YR3/2	100					fine loam	uniform w/o horizons

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

>5% 1-3" coral rocks, well drained loamy soil without concentrations or depletions

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Level, well drained

Hagoi Road #5

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15.5	7.5YR 2.5/1	100					clayey	Very dark brown
								clay loam w/o
								horizons

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: well drained loamy soil without concentrations or depletions

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes _____ No X

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

Remarks: Level, well drained

Hagoi Road #5

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: Tinian Wetland Determination City: _____ Sampling Date: 12-1-14 Time: 0950

Applicant/Owner: U.S. Navy State/Terr/Comlth.: CNMI Island: Tinian Sampling Point: #5

Investigator(s): Dan Wooster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Level Plateau Local relief (concave, convex, none): None

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Chinen Clay Loam 0-5% slope NOT 10 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? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks: This site is clearly not wetland; upland second growth forest, well drained loamy soil

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Melanolepis		X	UPL
2. Papaya			UPL
3. Leamachilij			
4. Pithecellobium dulce			UPL
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. Morinda		NI	UPL
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Pennisetum		FAC U	
2. Ptcris vitta			UPL
3. Fern Nephrolepis hirsutula		FAC/FAC U	
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Entada pursaetha			UPL
2. Abrus precatorius			UPL
Hot BEAN ROSARY PEA	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

__ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Clearly upland second growth forest

Hagoi Road #6

WETLAND DETERMINATION DATA FORM – Hawai'i and Pacific Islands Region

Project/Site: Tinian Wetland Determination City: _____ Sampling Date: 12-1-14 Time: 10 20

Applicant/Owner: U.S. Navy State/Terr/Comlth.: CNMI Island: Tinian Sampling Point: H-6

Investigator(s): Dan Wooster TMK/Parcel: _____

Landform (hillslope, coastal plain, etc.): Level Plateau Local relief (concave, convex, none): None

Lat: _____ Long: _____ Datum: _____ Slope (%): 0

Soil Map Unit Name: Chinen clay loam 0-5% slopes UNIT 10 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? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: This site is clearly not wetland; upland forest, loamy well drained soil

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Melanolepis		X	UPL
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2. Leucaena			UPL
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Pteris irrata			
2. Nephrolepsis sp		FAC	FACU
3. Polypodium scolopendria			FACU
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. Mikania scandens			FACU
2.			
	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	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:

X 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ Problematic Hydrophytic Vegetation[1] (Explain in Remarks or in the delineation report)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Clearly well drained upland second growth forest

Hagoi Road #6

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16+	7.5YR 3/3	100					Loamy Clay	No horizons No red ox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Muck Presence (A8)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Dark Surface (S7)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Stratified Layers (A5)
- ___ Sandy Mucky Mineral (S1)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

(Class Trav) > 5% coral rocks 1-3" well drained loamy soil without concentrations or depletions

HYDROLOGY

Wetland Hydrology Indicators: (Explain observations in Remarks, if needed.)

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Tilapia Nests (B17)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Fiddler Crab Burrows (C10) (Guam, CNMI, and American Samoa)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches):

Water Table Present? Yes _____ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches):

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

level, well drained