

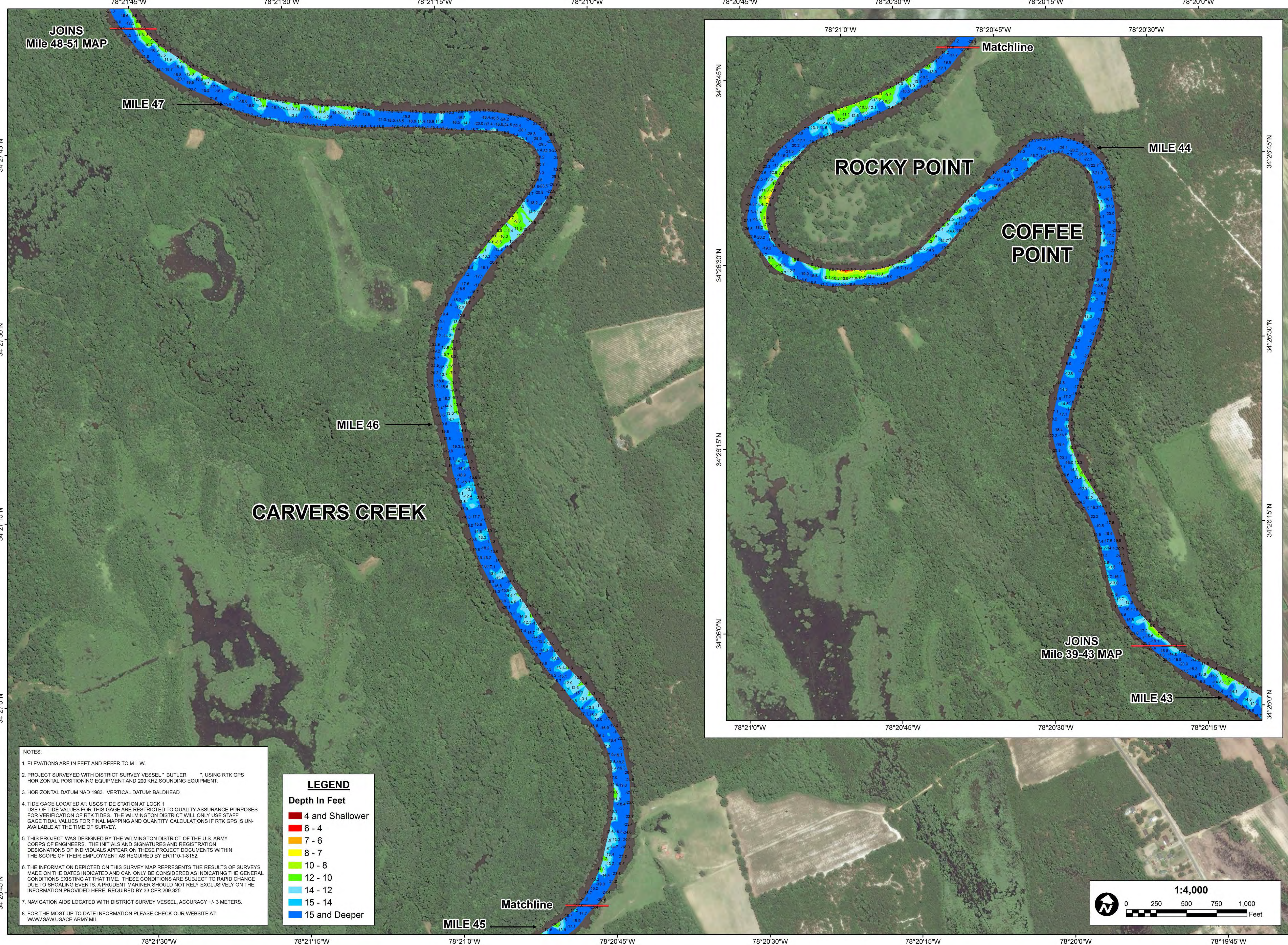
**US Army Corps of Engineers**  
Wilmington District



SURVEY DATE: 13 MAY 2016	SURVEYED BY: MAS, WWW
MAP DATE: 29 JULY 2016	MAPPED: K7PDPSPGD
MAP SCALE: 1:4,000	
IMAGERY DATE: 19 JUNE 2016	
© 2016 DIGITAL GLOBE NEXTVIEW LICENSE	MAP FILE NAME: CFA_MILE_39-43_2016-05-13.MXD

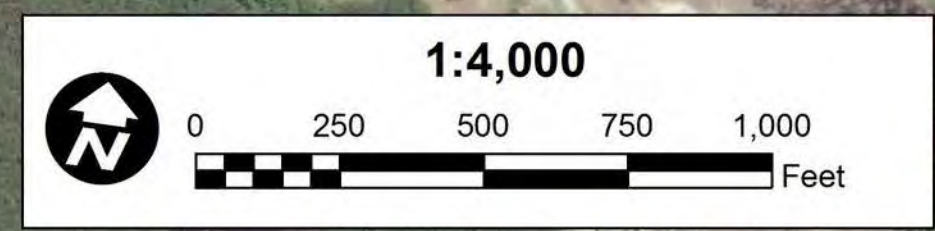
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
WILMINGTON, NORTH CAROLINA

**Cape Fear Above  
Mile 39 to 43**  
CAPE FEAR RIVER, NORTH CAROLINA



- NOTES:
- ELEVATIONS ARE IN FEET AND REFER TO M.L.W.
  - PROJECT SURVEYED WITH DISTRICT SURVEY VESSEL " BUTLER " USING RTK GPS HORIZONTAL POSITIONING EQUIPMENT AND 200 KHZ SOUNDING EQUIPMENT.
  - HORIZONTAL DATUM NAD 1983. VERTICAL DATUM: BALDHEAD
  - TIDE GAGE LOCATED AT: USGS TIDE STATION AT LOCK 1 USE OF TIDE VALUES FOR THIS GAGE ARE RESTRICTED TO QUALITY ASSURANCE PURPOSES FOR VERIFICATION OF RTK TIDES. THE WILMINGTON DISTRICT WILL ONLY USE STAFF GAGE TIDAL VALUES FOR FINAL MAPPING AND QUANTITY CALCULATIONS IF RTK GPS IS UNAVAILABLE AT THE TIME OF SURVEY.
  - THIS PROJECT WAS DESIGNED BY THE WILMINGTON DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS AND SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER1110-1-8152.
  - THE INFORMATION DEPICTED ON THIS SURVEY MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME. THESE CONDITIONS ARE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REQUIRED BY 33 CFR 209.325
  - NAVIGATION AIDS LOCATED WITH DISTRICT SURVEY VESSEL. ACCURACY +/- 3 METERS.
  - FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: [WWW.SAW.USACE.ARMY.MIL](http://WWW.SAW.USACE.ARMY.MIL)

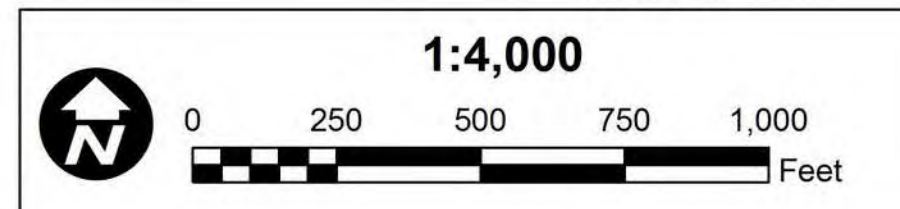
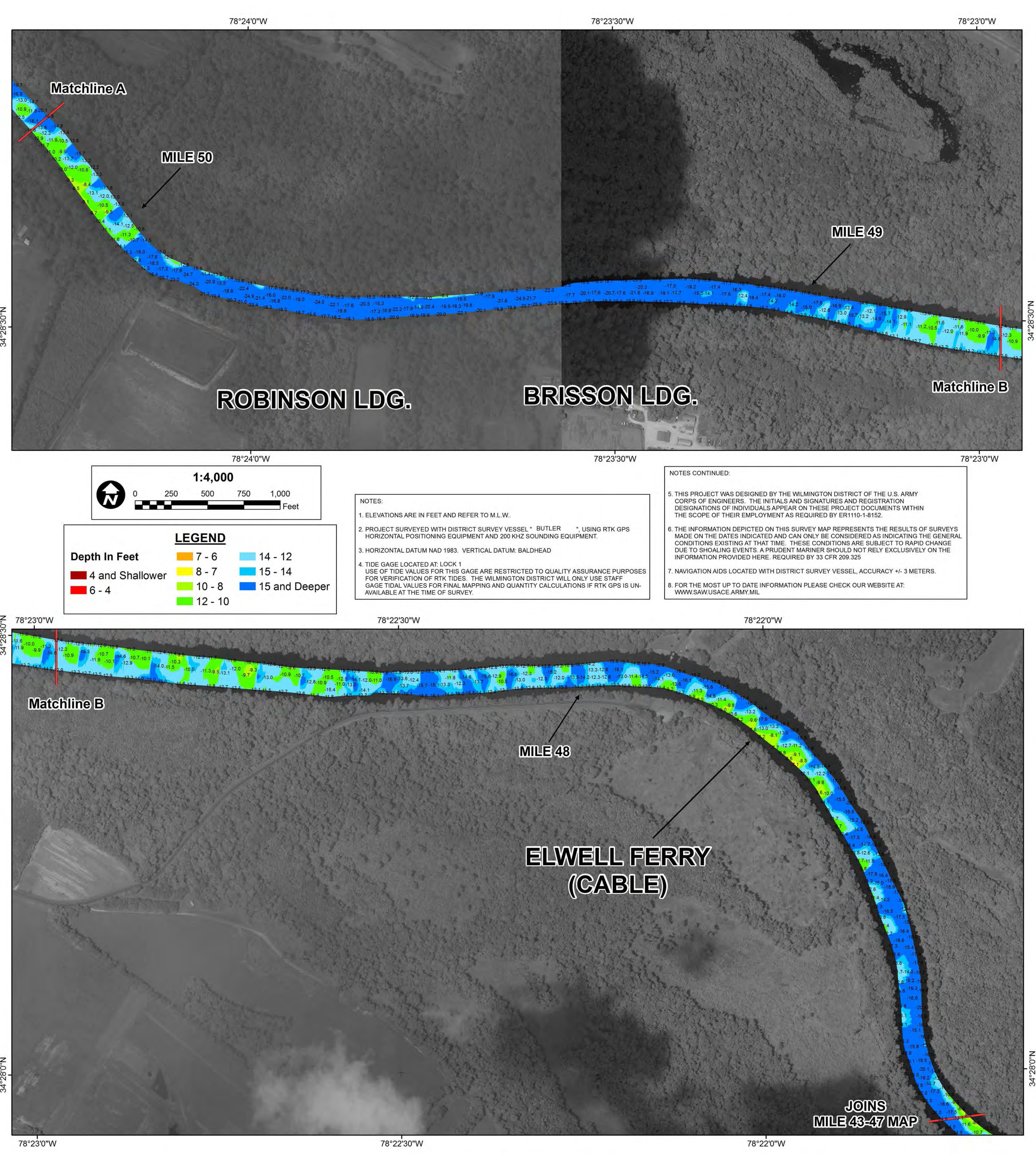
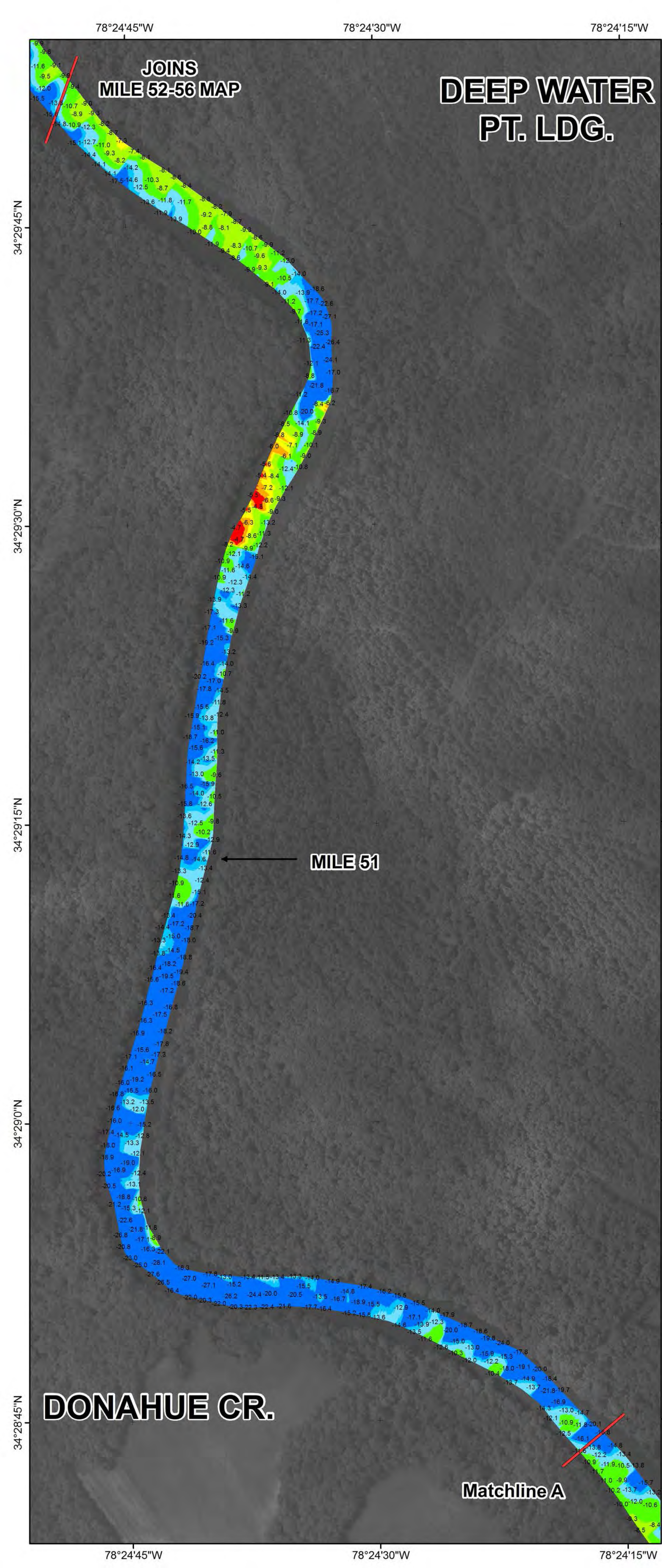
LEGEND	
Depth In Feet	
<span style="color: red;">■</span>	4 and Shallower
<span style="color: orange;">■</span>	6 - 4
<span style="color: yellow;">■</span>	7 - 6
<span style="color: lightgreen;">■</span>	8 - 7
<span style="color: green;">■</span>	10 - 8
<span style="color: cyan;">■</span>	12 - 10
<span style="color: blue;">■</span>	14 - 12
<span style="color: darkblue;">■</span>	15 - 14
<span style="color: black;">■</span>	15 and Deeper



SURVEY DATE: 13 MAY 2016	SURVEYED BY: MAS, WWW
MAP DATE: 29 JULY 2016	MAPPED: K7PDPDGD
MAP SCALE: 1:4,000	
IMAGERY DATE: 3 JUNE 2016	
© 2016 DIGITAL GLOBE NEXTVIEW LICENSE	MAP FILE NAME: CFA_MILE_43-47_2016-05-13.MXD

**HYDROGRAPHIC SURVEY**  
 U.S. ARMY ENGINEER DISTRICT  
 CORPS OF ENGINEERS  
 WILMINGTON, NORTH CAROLINA

**Cape Fear Above  
 Mile 43 to 47**  
CAPE FEAR RIVER, NORTH CAROLINA



**LEGEND**

Depth In Feet	Color
7 - 6	Light Blue
14 - 12	Medium Blue
4 and Shallower	Yellow
8 - 7	Light Green
15 - 14	Medium Green
6 - 4	Red
10 - 8	Light Blue-Green
15 and Deeper	Dark Blue
12 - 10	Light Blue

- NOTES:**
- ELEVATIONS ARE IN FEET AND REFER TO M.L.W.
  - PROJECT SURVEYED WITH DISTRICT SURVEY VESSEL " BUTLER " USING RTK GPS HORIZONTAL POSITIONING EQUIPMENT AND 200 KHZ SOUNDING EQUIPMENT.
  - HORIZONTAL DATUM NAD 1983. VERTICAL DATUM: BALDHEAD
  - TIDE GAGE LOCATED AT: LOCK 1  
USE OF TIDE VALUES FOR THIS GAGE ARE RESTRICTED TO QUALITY ASSURANCE PURPOSES FOR VERIFICATION OF RTK TIDES. THE WILMINGTON DISTRICT WILL ONLY USE STAFF GAGE TIDAL VALUES FOR FINAL MAPPING AND QUANTITY CALCULATIONS IF RTK GPS IS UNAVAILABLE AT THE TIME OF SURVEY.

- NOTES CONTINUED:**
- THIS PROJECT WAS DESIGNED BY THE WILMINGTON DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS AND SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER1110-1-8152.
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  - NAVIGATION AIDS LOCATED WITH DISTRICT SURVEY VESSEL, ACCURACY +/- 3 METERS.
  - FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: WWW.SAW.USACE.ARMY.MIL

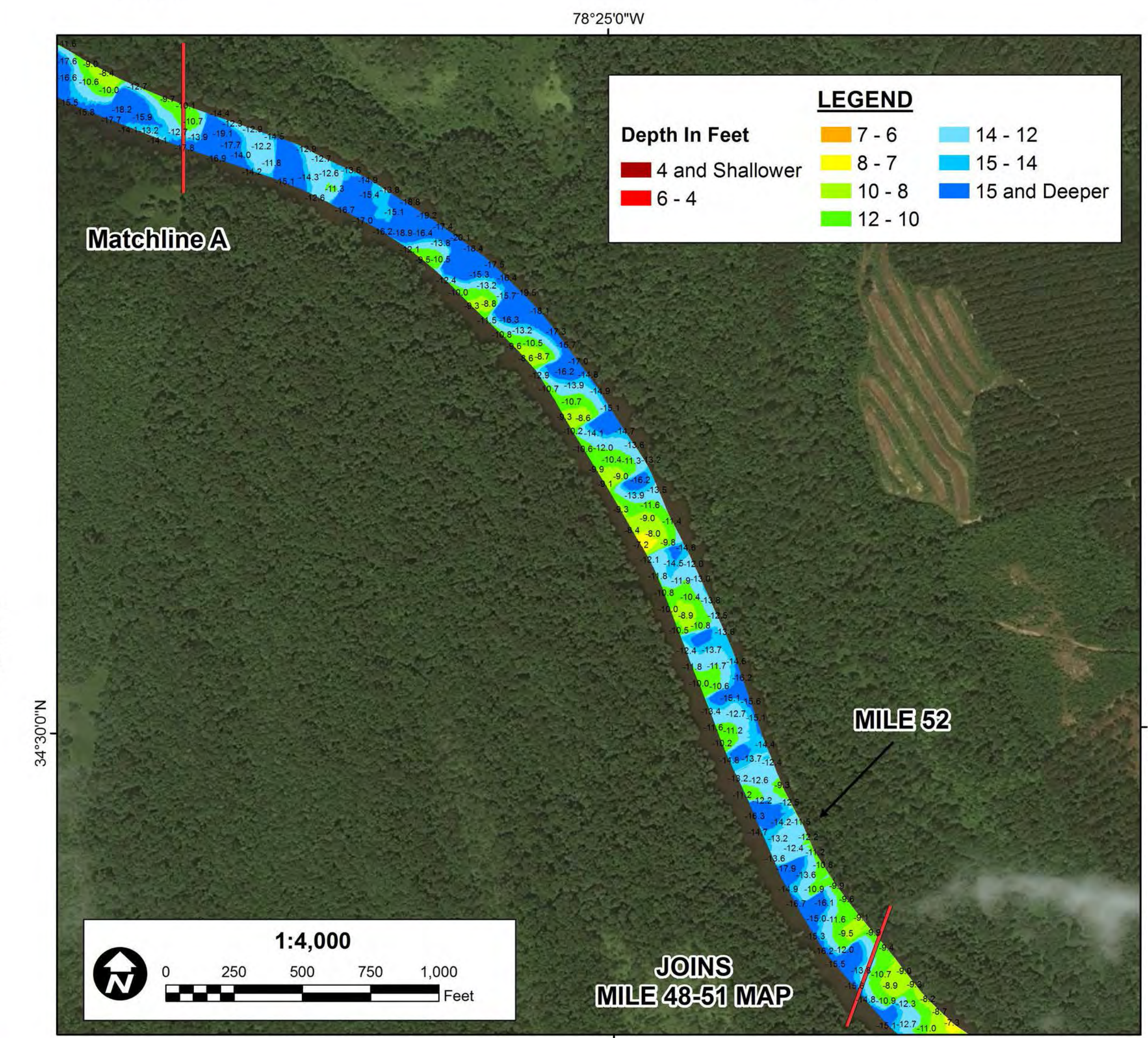
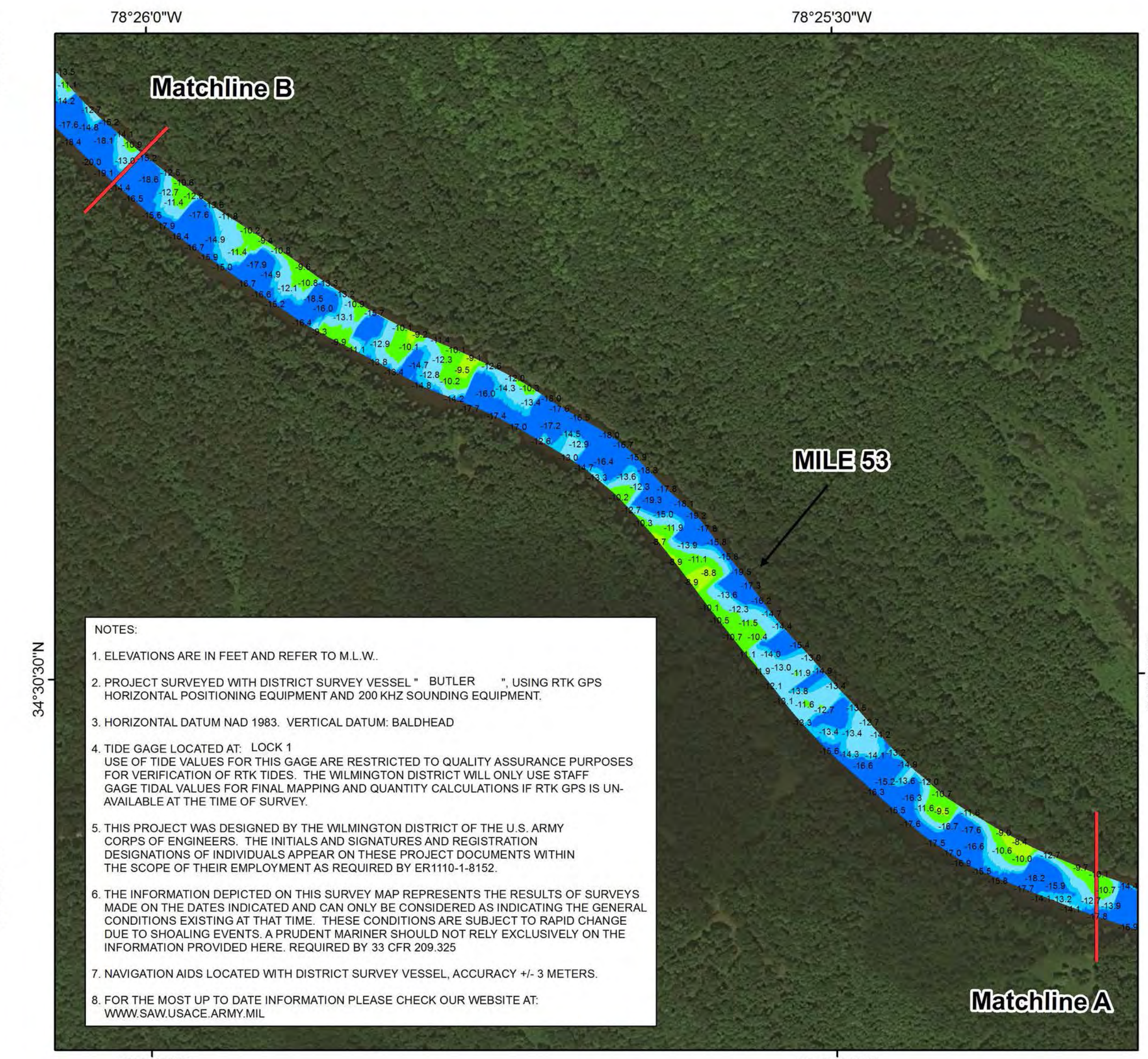


SURVEY DATE: 19 JULY 2016	SURVEYED BY: MAS, MKA
MAP DATE: 26 JULY 2016	MAPPED BY: K7OPNDJM
MAP SCALE: 1:4,000	
IMAGERY DATE: 11 JULY 2016	
© 2016 DIGITALGLOBE NEXTVIEW LICENSE	MAP FILE NAME: CFA_MILE48-51_2016-07-19.MXD

**HYDROGRAPHIC SURVEY**  
 U.S. ARMY ENGINEER DISTRICT  
 CORPS OF ENGINEERS  
 WILMINGTON, NORTH CAROLINA

**Cape Fear Above  
 Mile 48 to 51**

CAPE FEAR RIVER, NORTH CAROLINA



**US Army Corps of Engineers  
Wilmington District**



SURVEY DATE: 19-22 & 25 JULY 2016	SURVEYED BY: MAS, MKA, LMT, SRV
MAP DATE: 28 JULY 2016	MAPPED: K7OPNDJM
MAP SCALE: 1:4,000	
IMAGERY DATE: 3 JUNE 2016	
© 2016 DIGITALGLOBE NEXTVIEW LICENSE	MAP FILE NAME: CFA_MILE52-56_2016-07-19.MXD

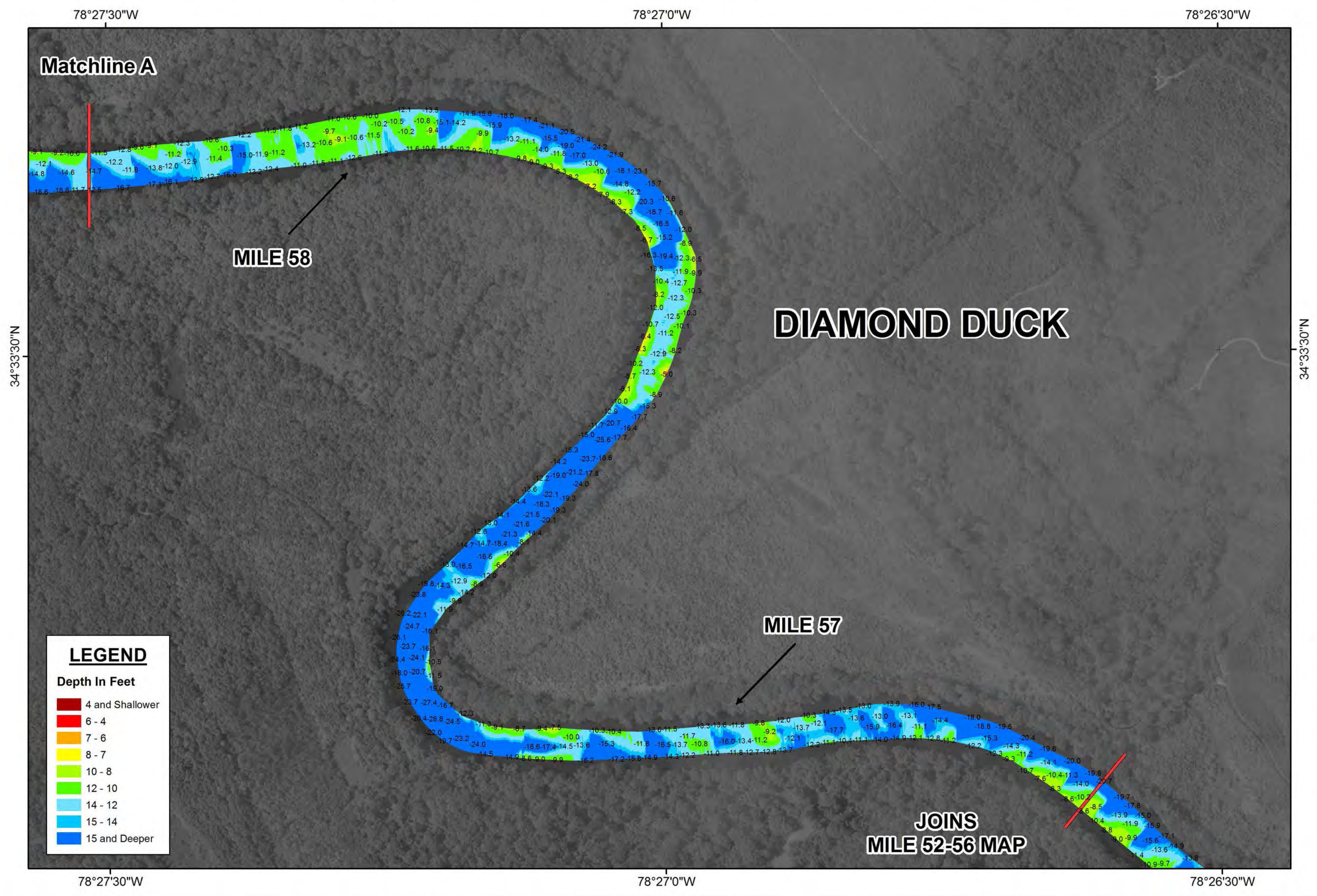
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
WILMINGTON, NORTH CAROLINA

**Cape Fear Above  
Mile 52 to 56**  
CAPE FEAR RIVER, NORTH CAROLINA

78°29'30"W 78°29'15"W 78°29'0"W 78°28'45"W 78°28'30"W 78°28'15"W 78°28'0"W 78°27'45"W 78°27'30"W

- NOTES:
1. ELEVATIONS ARE IN FEET AND REFER TO M.L.W.
  2. PROJECT SURVEYED WITH DISTRICT SURVEY VESSEL " BUTLER " USING RTK GPS HORIZONTAL POSITIONING EQUIPMENT AND 200 KHZ SOUNDING EQUIPMENT.
  3. HORIZONTAL DATUM NAD 1983. VERTICAL DATUM: BALHEAD
  4. TIDE GAGE LOCATED AT: LOCK 1  
USE OF TIDE VALUES FOR THIS GAGE ARE RESTRICTED TO QUALITY ASSURANCE PURPOSES FOR VERIFICATION OF RTK TIDES. THE WILMINGTON DISTRICT WILL ONLY USE STAFF GAGE TIDAL VALUES FOR FINAL MAPPING AND QUANTITY CALCULATIONS IF RTK GPS IS UNAVAILABLE AT THE TIME OF SURVEY.
  5. THIS PROJECT WAS DESIGNED BY THE WILMINGTON DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS AND SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER1110-1-8152.
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  7. NAVIGATION AIDS LOCATED WITH DISTRICT SURVEY VESSEL, ACCURACY +/- 3 METERS.
  8. FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: WWW.SAW.USACE.ARMY.MIL

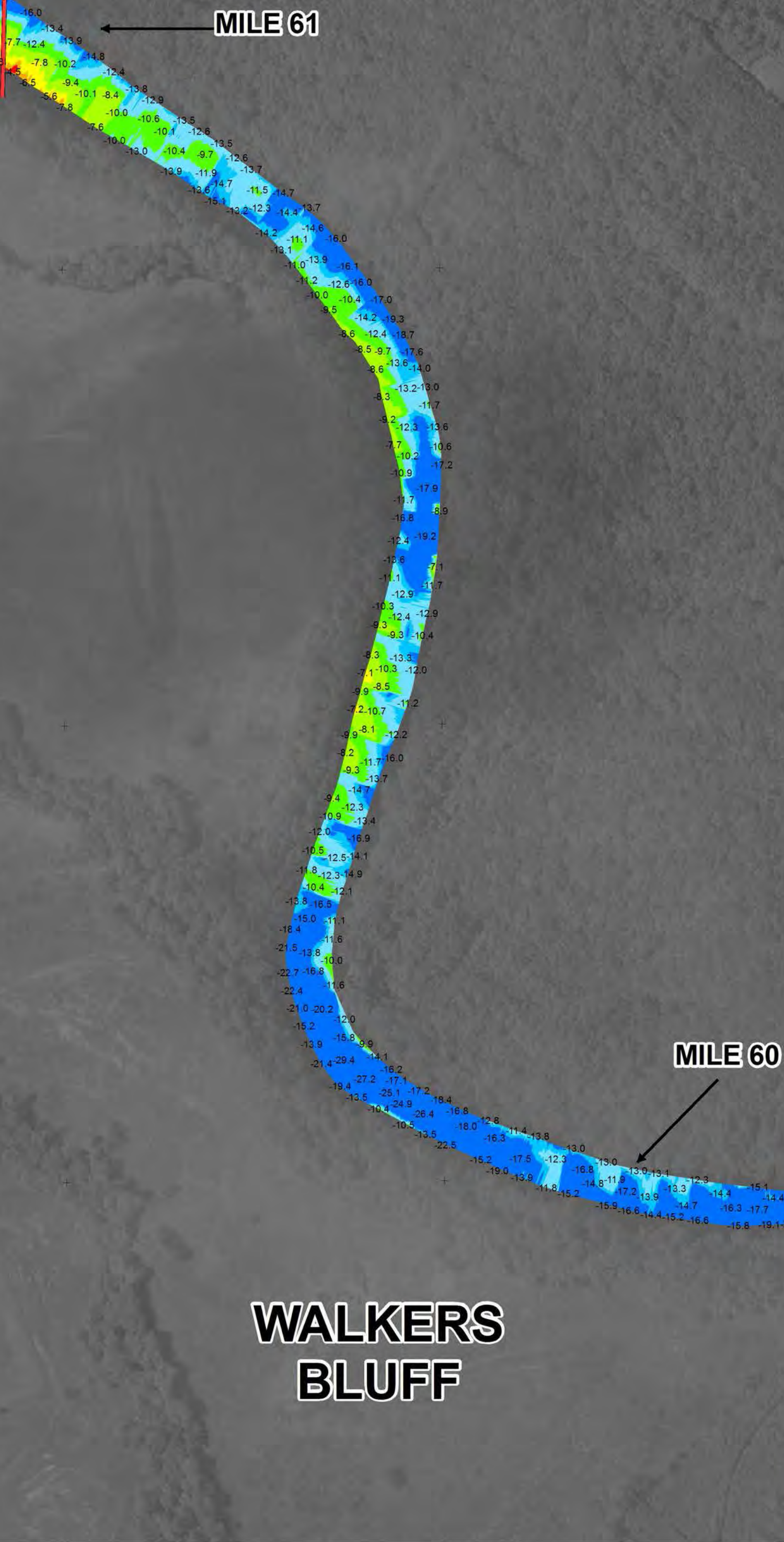
JOINS  
MILE 61-66 MAP  
MILE 61



**LEGEND**

Depth In Feet

4 and Shallower
6 - 4
7 - 6
8 - 7
10 - 8
12 - 10
14 - 12
15 - 14
15 and Deeper



78°29'30"W 78°29'15"W 78°29'0"W 78°28'45"W 78°28'30"W 78°28'15"W 78°28'0"W 78°27'45"W 78°27'30"W



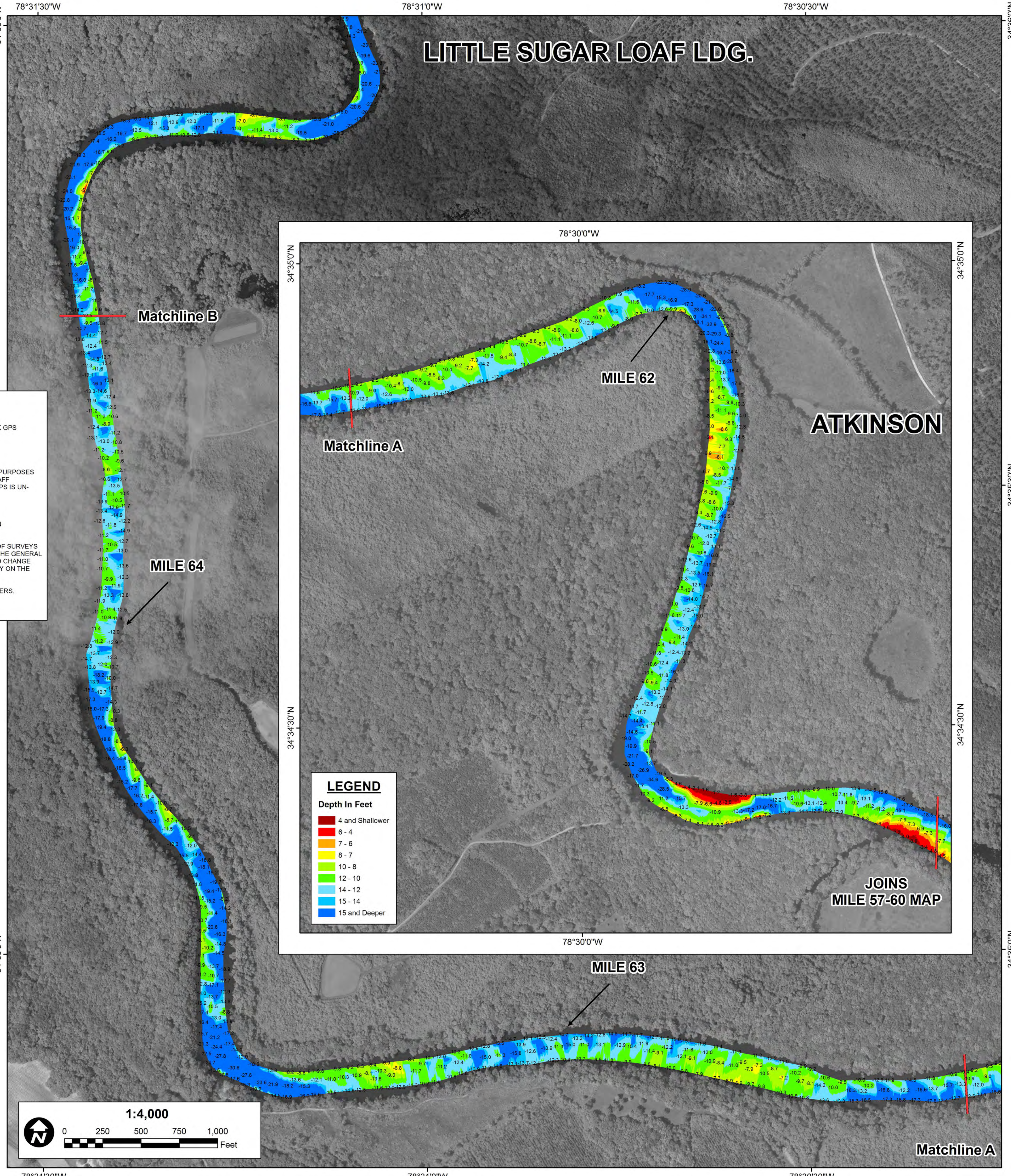
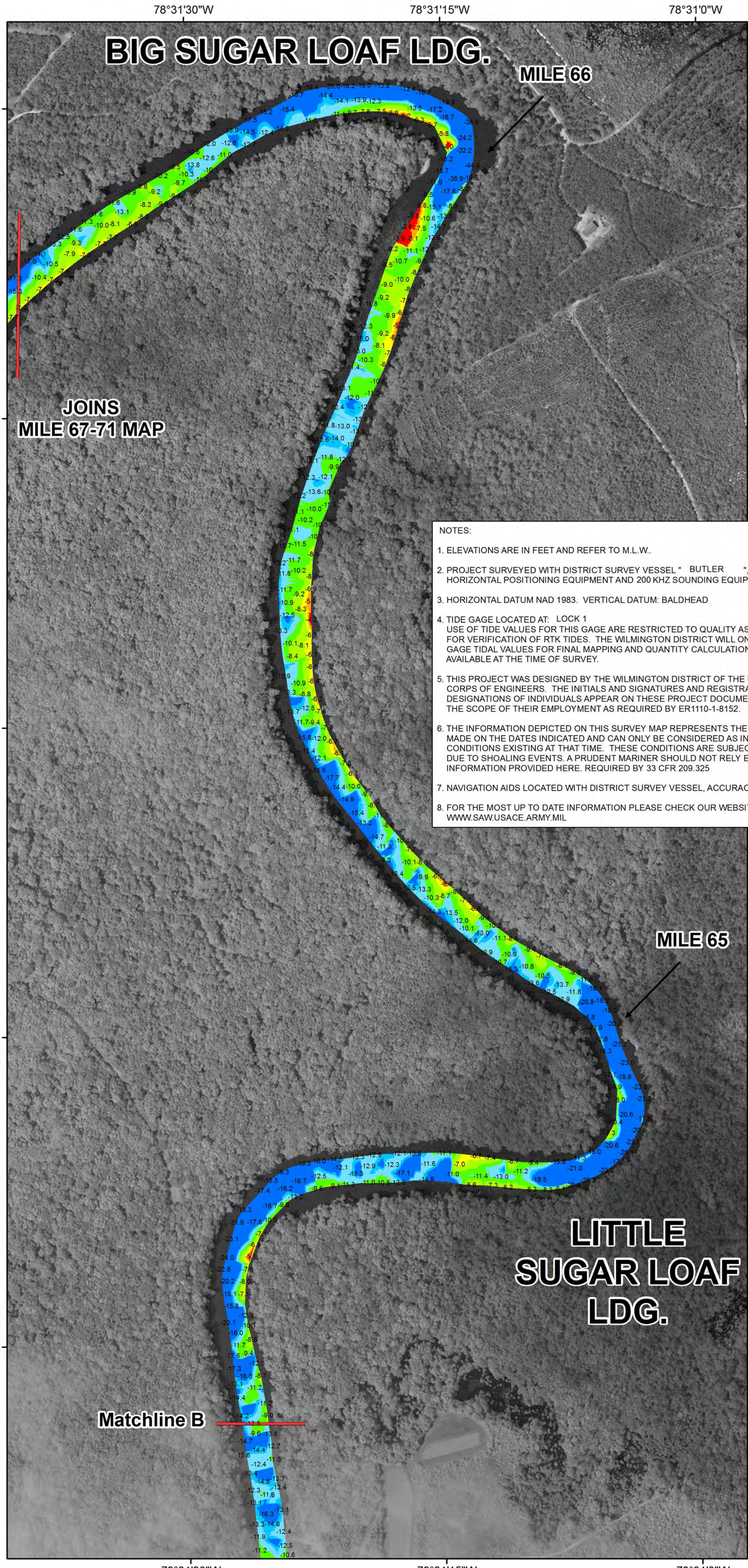
**US Army Corps of Engineers  
Wilmington District**



SURVEY DATE: 20-21 & 25 JULY 2016	SURVEYED BY: MAS, MKA, LMT, SRV
MAP DATE: 28 JULY 2016	MAPPED: K7OPNDJM
MAP SCALE: 1:4,000	
IMAGERY DATE: 11 JULY 2016	
© 2016 DIGITALGLOBE NEXTVIEW LICENSE	MAP FILE NAME: CFA_MILE57-60_2016-07-20-21-25.MXD

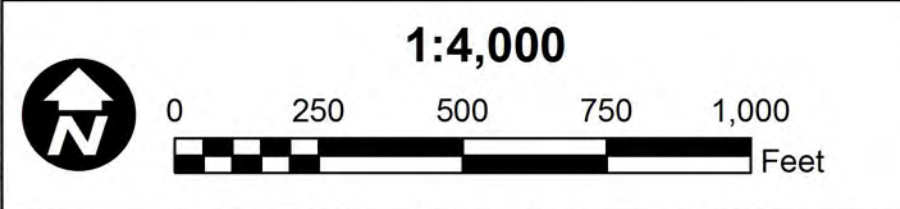
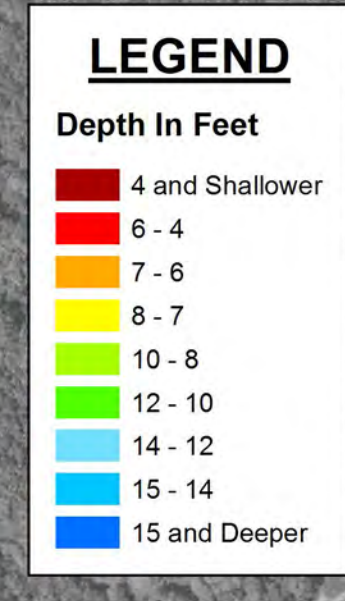
**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
WILMINGTON, NORTH CAROLINA

**Cape Fear Above  
Mile 57 to 60**  
CAPE FEAR RIVER, NORTH CAROLINA

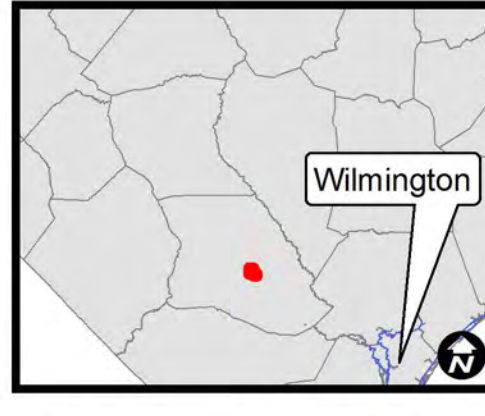
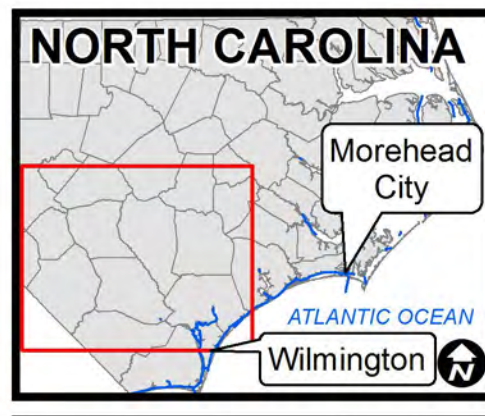


NOTES:

1. ELEVATIONS ARE IN FEET AND REFER TO M.L.W.
2. PROJECT SURVEYED WITH DISTRICT SURVEY VESSEL " BUTLER " USING RTK GPS HORIZONTAL POSITIONING EQUIPMENT AND 200 KHZ SOUNDING EQUIPMENT.
3. HORIZONTAL DATUM NAD 1983. VERTICAL DATUM: BALDHEAD
4. TIDE GAGE LOCATED AT: LOCK 1  
USE OF TIDE VALUES FOR THIS GAGE ARE RESTRICTED TO QUALITY ASSURANCE PURPOSES FOR VERIFICATION OF RTK TIDES. THE WILMINGTON DISTRICT WILL ONLY USE STAFF GAGE TIDAL VALUES FOR FINAL MAPPING AND QUANTITY CALCULATIONS IF RTK GPS IS UNAVAILABLE AT THE TIME OF SURVEY.
5. THIS PROJECT WAS DESIGNED BY THE WILMINGTON DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS AND SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER1110-1-8152.
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7. NAVIGATION AIDS LOCATED WITH DISTRICT SURVEY VESSEL. ACCURACY +/- 3 METERS.
8. FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: WWW.SAWUSACE.ARMY.MIL



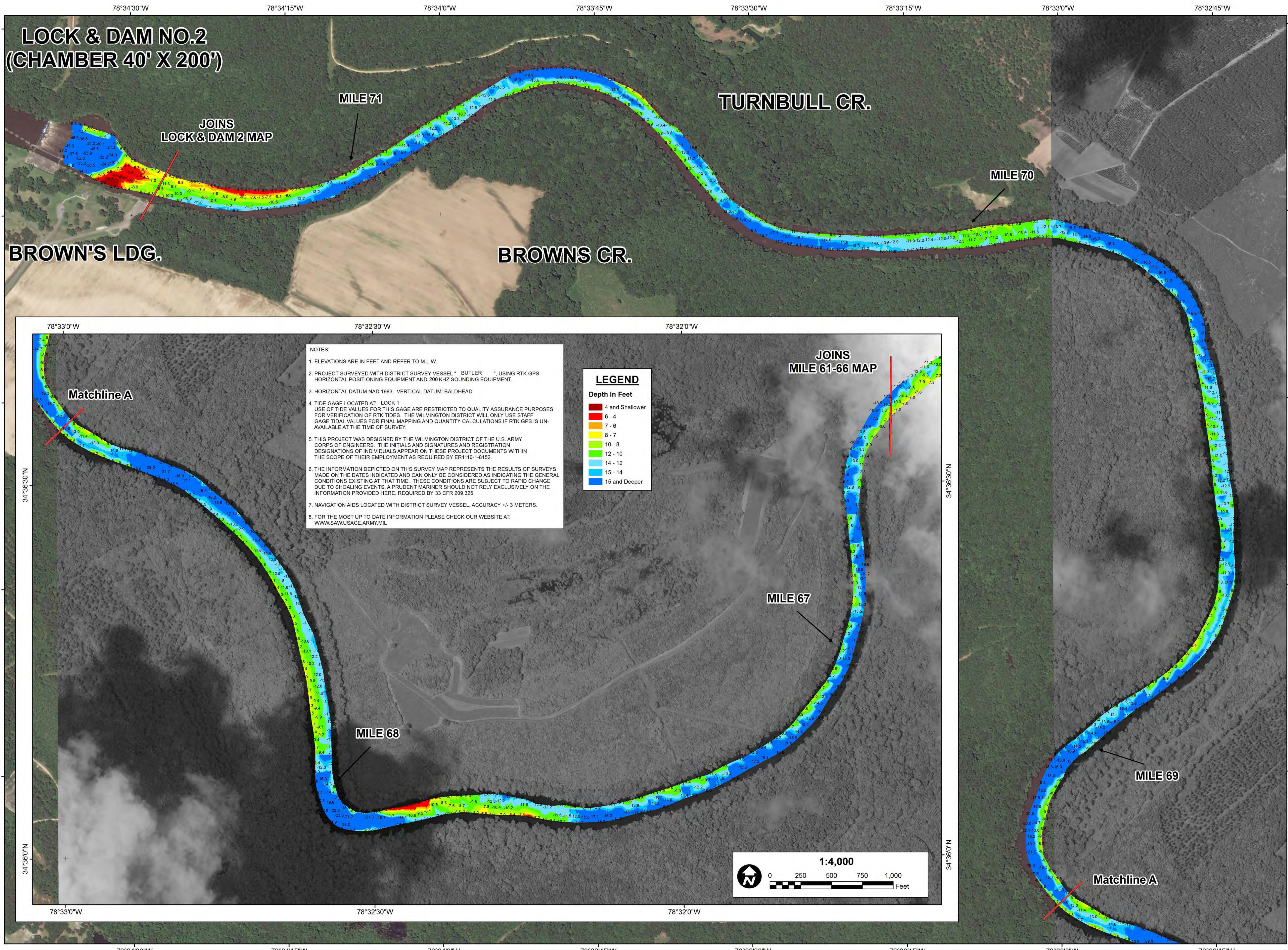
**US Army Corps of Engineers**  
Wilmington District



SURVEY DATE: 19-22 & 25 JULY 2016	SURVEYED BY: MAS, MKA, LMT, SRV
MAP DATE: 28 JULY 2016	MAPPED: KTOPNDJM
MAP SCALE: 1:4,000	
IMAGERY DATE: 16 MAY 2016	
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**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
WILMINGTON, NORTH CAROLINA

**Cape Fear Above  
Mile 61 to 66**  
CAPE FEAR RIVER, NORTH CAROLINA



**LOCK & DAM NO.2  
(CHAMBER 40' X 200')**

JOINS  
LOCK & DAM 2 MAP

MILE 71

TURNBULL CR.

MILE 70

BROWN'S LDG.

BROWNS CR.

JOINS  
MILE 61-66 MAP

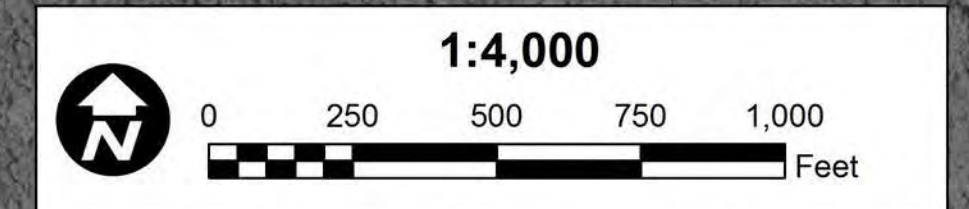
MILE 67

- NOTES:**
- ELEVATIONS ARE IN FEET AND REFER TO M.L.W.
  - PROJECT SURVEYED WITH DISTRICT SURVEY VESSEL " BUTLER ", USING RTK GPS HORIZONTAL POSITIONING EQUIPMENT AND 200 KHZ SOUNDING EQUIPMENT.
  - HORIZONTAL DATUM NAD 1983. VERTICAL DATUM: BALDHEAD
  - TIDE GAGE LOCATED AT LOCK 1. USE OF TIDE VALUES FOR THIS GAGE ARE RESTRICTED TO QUALITY ASSURANCE PURPOSES FOR VERIFICATION OF RTK TIDES. THE WILMINGTON DISTRICT WILL ONLY USE STAFF GAGE TIDAL VALUES FOR FINAL MAPPING AND QUANTITY CALCULATIONS IF RTK GPS IS UNAVAILABLE AT THE TIME OF SURVEY.
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  - FOR THE MOST UP TO DATE INFORMATION PLEASE CHECK OUR WEBSITE AT: WWW.SAW.USACE.ARMY.MIL

**LEGEND**

Depth In Feet

- 4 and Shallower
- 6 - 4
- 7 - 6
- 8 - 7
- 10 - 8
- 12 - 10
- 14 - 12
- 15 - 14
- 15 and Deeper



**US Army Corps  
of Engineers  
Wilmington District**



SURVEY DATE: 19-22 & 25 JULY 2016	SURVEYED BY: MAS, MKA, LMT, SRV
MAP DATE: 28 JULY 2016	MAPPED: K7OPNDJM
MAP SCALE: 1:4,000	
IMAGERY DATE: 9 & 19 JUNE 2016	
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**HYDROGRAPHIC SURVEY**  
U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
WILMINGTON, NORTH CAROLINA

**Cape Fear Above  
Mile 67 to 71**

CAPE FEAR RIVER, NORTH CAROLINA