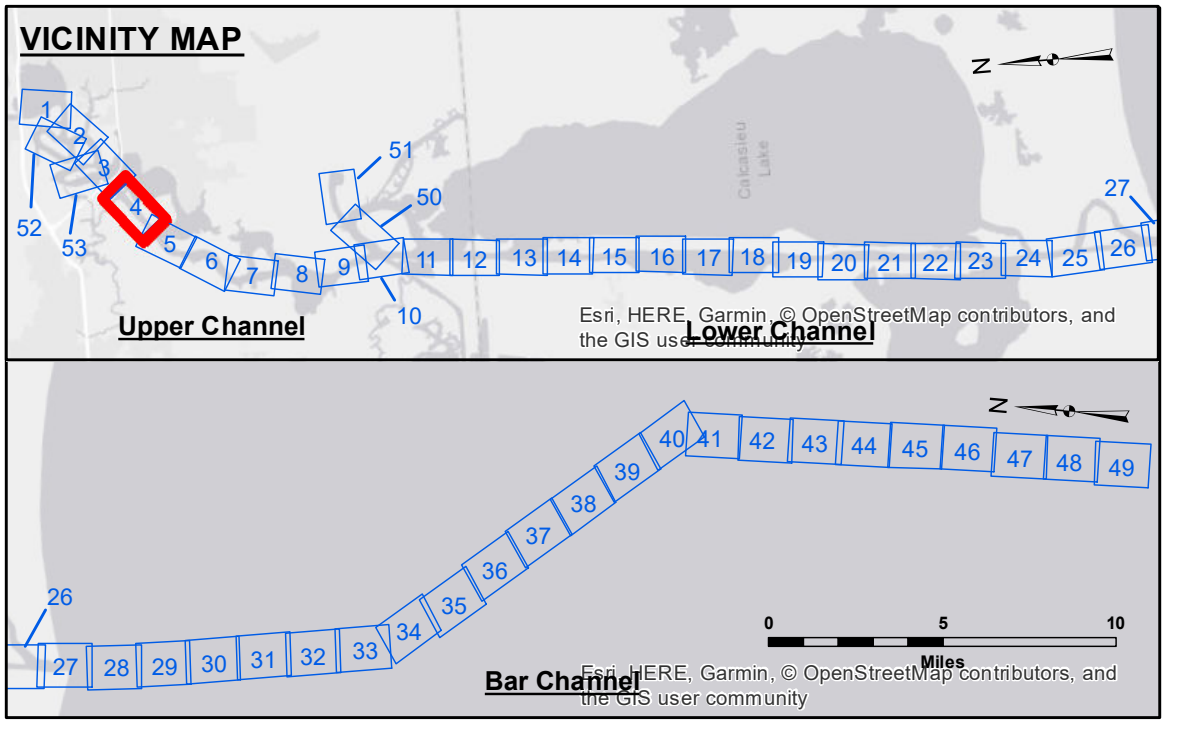


DISCLAIMER: The information depicted on this map represents the results of a survey conducted by the United States Army Corps of Engineers. The user is responsible for the accuracy, reliability, usability, or suitability of the information for any purpose other than that intended. The user is responsible for the accuracy, reliability, usability, or suitability of the information for any purpose other than that intended. The user is responsible for the accuracy, reliability, usability, or suitability of the information for any purpose other than that intended.

Submitted:	Surveyed By:	DS, JH
Recommended:	Plotted By:	AO
Approved:	Checked By:	AO

**CALCASIEU SHIP CHANNEL
UPPER SHEET 4
CR_04_UPR_20180919_CS
19 September 2018**

**Sheet Reference Number
4 of 53**



LEGEND		
--- Federal Navigation Channel	○ Cable Area	3 Fluff Thickness (feet)*
— Federal Navigation Center Line	□ Placement Area	● Shoalest Sounding**
— As-built Pipeline/Cable	⊗ Anchorage Area	☆ Beacon, General
..... Unconfirmed Pipeline/Cable	⊗ Obstruction Point	◆ Red Navigation Buoy
— Project Depth Contour	⊗ Wrecks-Submerged	◆ Green Navigation Buoy
		■ -16' and above
		■ -16' to -21'
		■ -21' to -26'
		■ -26' to -33'
		■ -33' to -39'
		■ -39' to -41'
		■ -41' to -43'
		■ -43' and below

Gage Reading: DM114: 1.3 MLLW
 Sea Conditions: CALM
 Vessel Name: OB-167
 Survey Type: CONDITION
 Sounding Frequency***: LOW

Vertical Datum: 0.0 NAVD88 (OPUS 2013) = 0.6' MLLW = 1.6' MLG or 0.0' MLLW = 1.0' MLG

Distances on the Calcasieu River are shown at 1 mile intervals.

The location of navigation aids are based on and provided by the U.S. Coast Guard and USACE survey crews.

2015 Aerial Photography data source: NAIP

Reference is N.O.A. Navigation Chart No. 11339.

* Difference between high and low frequency elevations where greater than 1.0'.
 ** Shoalest Sounding per Quarter per Reach.

*** High frequency (200 kHz) survey data represents the first signal return at a sounding location and will include suspended solids, known as "fluff", if present. Low frequency (20 kHz) survey data normally penetrates through this "fluff" layer to depict elevations of consolidated bottom material. Low frequency accuracies may vary depending on channel conditions and fathometer settings.

NOTES:
 Horizontal Coordinate System: North American Datum of 1983 (NAD83), projected to the State Plane Coordinate System (SPCS), Louisiana South Zone. Distance units in U.S. Survey Feet.
 Vertical Datum: 0.0 NAVD88 (OPUS 2013) = 0.6' MLLW = 1.6' MLG or 0.0' MLLW = 1.0' MLG
 Soundings are shown in feet and indicate depths below Mean Lower Low Water Datum (MLLW).
 Datum Relationships for gage 73565 as of December 2013:
 0.0' NAVD88 (OPUS 2013) = 0.6' MLLW = 1.6' MLG or 0.0' MLLW = 1.0' MLG
 Distances on the Calcasieu River are shown at 1 mile intervals.
 The location of navigation aids are based on and provided by the U.S. Coast Guard and USACE survey crews.
 2015 Aerial Photography data source: NAIP
 Reference is N.O.A. Navigation Chart No. 11339.
 * Difference between high and low frequency elevations where greater than 1.0'.
 ** Shoalest Sounding per Quarter per Reach.
 *** High frequency (200 kHz) survey data represents the first signal return at a sounding location and will include suspended solids, known as "fluff", if present. Low frequency (20 kHz) survey data normally penetrates through this "fluff" layer to depict elevations of consolidated bottom material. Low frequency accuracies may vary depending on channel conditions and fathometer settings.