US Army Corps of Engineers
St. Louis District

MARCH 18, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 09:00	WSE @ 15:00
194.4	410.05	409.88
195	410.29	410.13
196	410.70	410.54
197	411.11	410.96
198	411.52	411.37
199	411.93	411.79
200	412.34	412.20
200.5	412.54	412.41

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D UPPER GAGE READING TO MILE 194.4 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

SOUNDED MARCH 18, 2013

SKINNY ISLAND

ILLINOIS

MAPLE ISLAND

MISSOURI

MEL PRICE GAGE (POOL)

MEL PRICE GAGE (TAILWATER)

MEL PRICE LOCK & DAM

201

200

199

DIKE 200.0(L)

DIKE 200.3(R)

DIKE 200.0(R)

DIKE 199.7(R)

DIKE 199.4(R)

DIKE 199.1(R)

DIKE 198.9(R)

138kV AERIAL ELECTRIC CABLES

AMOCO PIPELINE

BARGE

SEE PLATE NO. 2

1,108,000 N

1,106,000 N

1,100,000 N

1,098,000 E

596,000 E

598,000 E

600,000 E

602,000 E

604,000 E

606,000 E

GAGE RECORD

	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	190.4	185.1
L. W. R. P.	396.3	395.8	388.5	380.5
18 MAR 2013	17.06\09\001	16.93\15\001	60.05\19\001	59.88\15\001

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1958-59 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 CFS)

Surveyed by: BOWEN ENGINEERING
Drawn by: X
SUBMITTED: X
Survey Date: March 18, 2013
Reviewed by: X
APPROVED: X
Ckd by: X
File name: ########\########
Plot date: ########

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

1. SOUNDED MARCH 18, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

240 METERS 800 FEET
120 0 0 400
120 400

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY THE CORPS OF ENGINEERS AND IS ACCURATE AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 198.9 – 200.6

PLATE NUMBER 1

ILLINOIS

MARCH 18, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 09:00	WSE @ 15:00
194.4	410.05	409.88
195	410.29	410.13
196	410.70	410.54
197	411.11	410.96
198	411.52	411.37
199	411.93	411.79
200	412.34	412.20
200.5	412.54	412.41

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D UPPER GAGE READING TO MILE 194.4 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

612,000 E
610,000 E
614,000 E
1,102,000 N
1,100,000 N
1,098,000 N
1,096,000 N
1,094,000 N

CHIPPEWA LANDING
MAPLE ISLAND
MOBILE ISLAND
GILLIS
OLD SINGING CUT
WILLIAMS CUT
OLD CHEROKEE CUT
DIKE 197.7(R)
DIKE 198.2(R)
DIKE 198.7(R)
DIKE 199.1(R)
AMOCO PIPELINE
PLATTE PIPELINE
ENBRIDGE PIPELINE
138kV AERIAL ELEC.
345kV AERIAL ELEC.
BARGE
BAKER BUOY
SEE PLATE NO. 1
SEE PLATE NO. 3

MISSOURI

1. SOUNDED MARCH 18, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	190.4	185.1
L. W. R. P.	396.3	395.8	388.5	380.5
18 MAR 2013	17:06/09.001	16.9315-001	60.05/9.001	59.88/15-001

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Drawn by: X
SUBMITTED: X
Reviewed by: X
APPROVED: X
Survey Date: March 18, 2013
Ckd by: X
File name: ###DESIGN\FILES\###
Plot date: ###DATE/TIME###

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

0 120 240 METERS
0 400 800 FEET
THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE AT THE TIME INDICATED AND SHOULD NOT BE CONSTRUED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 196.7 – 198.9

PLATE NUMBER 2

1,090,000 N

614,000 E

1,088,000 N

1,086,000 N

1,084,000 N

1,082,000 N

612,000 E

608,000 E

GILHAM LANDING

MOBIL ISLAND LANDING

ILLINOIS

MARCH 18, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 09:00	WSE @ 15:00
194.4	410.05	409.88
195	410.29	410.13
196	410.70	410.54
197	411.11	410.96
198	411.52	411.37
199	411.93	411.79
200	412.34	412.20
200.5	412.54	412.41

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D UPPER GAGE READING TO MILE 194.4 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

MARCH 13, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
185.3	413.51	413.63	-- L&D27 UPPER
194.4	413.51	413.63	-- CONFLUENCE
195	413.69	413.80	
196	413.98	414.09	

MARCH 12, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00
190.4	408.86	409.87
191	409.29	410.31
192	410.01	411.04
193	410.74	411.77
194	411.46	412.51
194.4	411.75	412.80
195	411.93	412.96

SOUNDED MARCH 13, 2013
SOUNDED MARCH 18, 2013

SOUNDED MARCH 13, 2013
SOUNDED MARCH 12, 2013

WEIR 195.0 (L)

WEIR 194.9 (L)

WEIR 194.8 (L)

WEIR 194.7 (L)

WEIR 19

BARGE

BARGE

BARGE

SEE PLATE NO. 4A

SEE PLATE NO. 3

SEE PLATE NO. 5

1,076,000 N 610,000 E

1,078,000 N

1,080,000 N

608,000 E

1,074,000 N

1,072,000 N

604,000 E

AMEREN UE AERIAL

LEVEE

CHAIN OF ROCKS CANAL

LEVEE

ILLINOIS

CHOUTEAU ISLAND

SOUNDED MARCH 13, 2013
SOUNDED MARCH 12, 2013

WEIR 194.5 (L)

WEIR 194.3 (L)

WEIR 194.1 (L)

WEIR 194.0 (L)

SUNKEN BARGE

ELECTRIC CABLES

BARGE

1934

1933

2 SUBMERGED TELEPHONE CABLES

SHELL PIPELINE CORP 1-10"

SHELL PIPELINE CORP 1-8"

DUCK ISL

H.P. 193.9(R)

H.P. 194.0(R)

H.P. 194.4(R)

H.P. 194.5(R)

H.P. 194.6(R)

APPROXIMATE LEVEE SET-BACK

DIKE 193.2(R)

DIKE 193.0(R)

DIKE 192.7(R)

DIKE -0.10(R)
(PILE-KC DIST)

COLUMBIA BOTTOMS

MISSOURI

MARCH 13, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
185.3	413.51	413.63	-- L&D27 UPPER
194.4	413.51	413.63	-- CONFLUENCE
195	413.69	413.80	
196	413.98	414.09	

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D UPPER GAGE READING TO MILE 194.4 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

MARCH 12, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
190.4	408.86	409.87	-- CHAIN OF ROCKS DAM
191	409.29	410.31	
192	410.01	411.04	
193	410.74	411.77	
194	411.46	412.51	
194.4	411.75	412.80	-- CONFLUENCE
195	411.93	412.96	

1. SOUNDED MARCH 12 AND 13, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

ON 03/12/2013, A SIGNIFICANT AMOUNT OF DEBRIS WAS PRESENT IN THE RIVER. THE DEBRIS CAUSED SOUNDER INTERFERENCE WHICH RESULTED IN OCCASIONAL DATA GAPS.

GAGE RECORD	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	190.4	185.1
L. W. R. P.	396.3	395.8	388.5	380.5
13 MAR 2013	19.82(08:00) 19.91(16:00)	63.51(8:00) 63.63(16:00)	X	X
12 MAR 2013	18.07(08:00) 18.16(16:00)	61.75(8:00) 62.80(16:00)	95.00(8:26) 96.01(8:20)	

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (LWRP) (134,000 C.F.S.)

US Army Corps of Engineers
St. Louis District

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Surveyed by: BOWEN ENGINEERING
Drawn by: X
Reviewed by: X
Ckd by: X
Survey Date: March 12 and 13, 2013
SUBMITTED: X
APPROVED: X
File name: ########\########
Plot date: ########

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS
800 FEET
120 0 120 400
400 0 400

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY THE ORGANIZATION INDICATED AND MAY NOT AGREE WITH THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 192.6 - 194.5

PLATE NUMBER

4

610,000 E

608,000 E

606,000 E

1,062,000 N

1,064,000 N

1,066,000 N

1,068,000 N

1,070,000 N

1,072,000 N

604,000 E

602,000 E

600,000 E

598,000 E

ILLINOIS

ILLINOIS

CHOUTEAU ISLAND

N

1. SOUNDED MARCH 13, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

CHAIN OF ROCKS BRIDGE

I-270 BRIDGE

LEVEE

MISSISSIPPI RIVER MAIN CHANNEL

SHELL PIPELINE CORP.

AMEREN UE AERIAL POWERLINE

CHAIN OF ROCKS CANAL

LEVEE

BARGE

BARGE

SEE PLATE NO. 4

SEE PLATE NO. 4B

MARCH 13, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
185.3	413.51	413.63	-- L&D27 UPPER
194.4	413.51	413.63	-- CONFLUENCE
195	413.69	413.80	
196	413.98	414.09	

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D UPPER GAGE READING TO MILE 194.4 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

GAGE RECORD

	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	190.4	185.1
L. W. R. P.	396.3	395.8	388.5	380.5
13 MAR 2013	19.82	08:00 99.91	16:00 63.51	08:00 63.63
			16:00	X

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) 134,000 C.F.S.'s

US Army Corps of Engineers
St. Louis District

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Surveyed by: BOWEN ENGINEERING
Drawn by: X
SUBMITTED: X
Reviewed by: X
Ckd by: X
APPROVED: X
Survey Date: March 13, 2013
Plot date: ##MISSING##
File name: ##MISSING##

UPPER MISSISSIPPI RIVER BASIN
MISSISSIPPI RIVER
CHAIN OF ROCKS CANAL
HYDROGRAPHIC SURVEYS
RIVER MILES 184.5 – 185.1

0 120 240 METERS
0 400 800 FEET

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE ENGINEER DISTRICT AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

PLATE NUMBER
4A

1,060,000 N

604,000 E

602,000 E

1,062,000 N

600,000 E

598,000 E

1,064,000 N

1,062,000 N

596,000 E

1,060,000 N

1,058,000 N

594,000 E

1,056,000 N

592,000 E

1,054,000 N

N

1. SOUNDED MARCH 13, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

ILLINOIS

LEVEE

CHAIN OF ROCKS CANAL

BARGE

BARGE

BARGE

BARGE

BARGE

LEVEE

SEE PLATE NO. 4A

SEE PLATE NO. 4C

MARCH 13, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
185.3	413.51	413.63	--- L&D27 UPPER
194.4	413.51	413.63	-- CONFLUENCE
195	413.69	413.80	
196	413.98	414.09	

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D UPPER GAGE READING TO MILE 194.4 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

ILLINOIS

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	190.4	185.1
L. W. R. P.	396.3	395.8	388.5	380.5
13 MAR 2013	19.82108:001	19.91118:001	63.5168:001 63.6316:001)	X

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) 134,000 C.F.S.'s

Survey Date: March 13, 2013

Surveyed by: BOWEN ENGINEERING

Reviewed by: X

Ckd by: X

Drawn by: X

APPROVED: X

SUBMITTED: X

Plot date: ########

File name: ########

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER
CHAIN OF ROCKS CANAL

240 METERS
120
0
800 FEET
400
0

THE INFORMATION REFLECTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE ST. LOUIS DISTRICT, CORPS OF ENGINEERS AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS
RIVER MILES 184.5 – 185.1

PLATE NUMBER
4B

(C)

1,048,000 N

1,046,000 N

1,044,000 N

1,042,000 N

592,000 E

594,000 E

596,000 E

598,000 E

1,050,000 N

N

MARCH 13, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
185.3	413.51	413.63	-- L&D27 UPPER
194.4	413.51	413.63	-- CONFLUENCE
195	413.69	413.80	
196	413.98	414.09	

WSE CALCULATIONS COMPLETED BY TRANSFERRING
L&D UPPER GAGE READING TO MILE 194.4
(CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL
AND UPPER END OF CHAIN OF ROCKS CANAL)

ILLINOIS

1. SOUNDED MARCH 13 AND 19, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

MARCH 19, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 07:00	WSE @ 16:00	
181	400.53	400.12	
182	401.03	400.60	
183	401.52	401.08	
183.3	401.67	401.22	
184	402.02	401.56	-- LOWER CONFLUENCE
185	402.55	402.11	
186	403.08	402.66	

WSE CALCULATIONS COMPLETED BY TRANSFERRING
L&D LOWER GAGE READING TO MILE 184.0
(CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL
AND LOWER END OF CHAIN OF ROCKS CANAL)

SEE PLATE NO. 4B

SEE PLATE NO. 9

BARGE

CHAIN OF ROCKS CANAL

LOCK 27

SOUNDED MARCH 13, 2013

SOUNDED MARCH 19, 2013

GABARET ISLAND

ILLINOIS

592,000 E

1,052,000 N

594,000 E

3.2(LC)

7.8(LC)

7.7(LC)

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	190.4	185.1
L.W.R.P.	396.3	395.8	388.5	380.5
13 MAR 2013	19.82|08:00|99.91|16:00|	63.51|8:00|	X	X
19 MAR 2013	X	X	X	52.02|07:00| 51.56|16:00|

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING	Drawn by: X	Reviewed by: X	Survey Date: March 13 and 19, 2013
	SUBMITTED: X	APPROVED: X	Plot date: ##########
			File name: ##########\##########.dgn

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER
CHAIN OF ROCKS CANAL

0 120 240 METERS
0 400 800 FEET
120 400

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE CORPS OF ENGINEERS AT THE TIME INDICATED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 184.5 - 185.1

PLATE NUMBER

4C

ILLINOIS

CHOUTEAU ISLAND

ON 03/12/2013. A SIGNIFICANT AMOUNT OF DEBRIS WAS PRESENT IN THE RIVER. THE DEBRIS CAUSED SOUNDER INTERFERENCE WHICH RESULTED IN OCCASIONAL DATA GAPS.

N

MARCH 12, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
190.4	408.86	409.87	-- CHAIN OF ROCKS DAM
191	409.29	410.31	
192	410.01	411.04	
193	410.74	411.77	
194	411.46	412.51	
194.4	411.75	412.80	-- CONFLUENCE
195	411.93	412.96	

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D UPPER GAGE READING TO MILE 194.4 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

MARCH 14, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
186	407.87	407.53	
187	408.38	408.07	
188	408.89	408.60	
189	409.40	409.14	
190	409.91	409.68	
190.4	410.11	409.89	-- CHAIN OF ROCKS DAM

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

SOUNDED MARCH 14, 2013
SOUNDED MARCH 12, 2013

DIKE 191.2(L)

DIKE 192.4(R)

LACLEDE BARGE LINE CO. 1102

MISSISSIPPI RIVER MAIN CHANNEL

CHAIN OF ROCKS CANAL

BARGE

BARGE

BARGE

BARGE

BARGE

1,068,000 N

SEE PLATE NO. 4

SEE PLATE NO. 6

WILSON ISLAND

MISSOURI

598,000 E

1,076,000 N

596,000 E

1,074,000 N

594,000 E

1,072,000 N

592,000 E

1,070,000 N

590,000 E

1. SOUNDED MARCH 12 AND 14, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE ENGINEER AND IS SUBMITTED FOR THE INFORMATION OF THE GOVERNMENT AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

240 METERS 120 0 120 400 800 FEET 0 400

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	190.4	185.1
L. W. R. P.	396.3	395.8	388.5	380.5
12 MAR 2013	18.07(08:00) 18.96(16:00)	61.75(8:00) 62.80(16:00)	95.00(8:26) 96.01(8:20)	X
14 MAR 2013	X	X	96.20(8:00) 96.01(5:17)	56.85(08:00) 56.46(16:00)

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1958-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS

RIVER MILES 190.7 – 192.6

Surveyed by: BOWEN ENGINEERING
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
Survey Date: March 12 and 14, 2013
File name: ###DESIGNFILEDESCRIPTION###
Plot date: ###DATE/TIME###

PLATE NUMBER 5

SEE PLATE NO. 6A

596,000 E
1,064,000 N
1,062,000 N
594,000 E
1,060,000 N
592,000 E
1,058,000 N
588,000 E
1,066,000 N
590,000 E

ILLINOIS

MISSOURI

DAM NO. 27
LOW WATER DAM

CHAIN OF ROCKS GAGE

INTAKE

WESTERN ELECTRIC COMPANY PIPELINE

SOUTH WESTERN BELL TELEPHONE COMPANY PIPELINE

DIKE 189.6(L)

DIKE 189.3(L)

DIKE 188.6(L)

DIKE 190.3(R) (HOMER DIKE)

SOUNDED MARCH 14, 2013
SOUNDED MARCH 12, 2013

CITY OF ST. LOUIS WATER WORKS

GREEN BUOY

190

189

SEE PLATE NO. 5

SEE PLATE NO. 7

ON 03/12/2013, A SIGNIFICANT AMOUNT OF DEBRIS WAS PRESENT IN THE RIVER. THE DEBRIS CAUSED SOUNDER INTERFERENCE WHICH RESULTED IN OCCASIONAL DATA GAPS.

MARCH 12, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
190.4	408.86	409.87	-- CHAIN OF ROCKS DAM
191	409.29	410.31	
192	410.01	411.04	
193	410.74	411.77	
194	411.46	412.51	
194.4	411.75	412.80	-- CONFLUENCE
195	411.93	412.96	

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D UPPER GAGE READING TO MILE 194.4 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

MARCH 14, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
186	407.87	407.53	
187	408.38	408.07	
188	408.89	408.60	
189	409.40	409.14	
190	409.91	409.68	
190.4	410.11	409.89	-- CHAIN OF ROCKS DAM

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

1. SOUNDED MARCH 12 AND 14, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURIEAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	190.4	185.1
L. W. R. P.	396.3	395.8	388.5	380.5
12 MAR 2013	18.07|08:00|	18.96|16:00|	61.75|6:00|	62.80|8:00|
14 MAR 2013		X	X	X

95.60\|8:26\| 96.01\|8:20\|
96.20\|8:00\| 96.01\|5:17\|
56.85\|8:00\| 56.46\|8:00\|

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: March 12 and 14, 2013
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ###ESIGNFILEESPECIFICATION###
Plot date: ###DATE/TIME###

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS 120 0
800 FEET 400 0

THE INFORMATION REPICTED ON THIS MAP REPRESENTS THE RESULTS OF HYDROGRAPHIC SURVEYS PERFORMED BY THE CORPS OF ENGINEERS AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 188.4 - 190.7

PLATE NUMBER

6

SEE PLATE NO. 6A

SEE PLATE NO. 6

SEE PLATE NO. 8

DIKE 188.6(L)

DIKE 188.5(L)

DIKE 187.6(L)

DIKE 187.0(L)

DIKE 186.3(L)

ILLINOIS

MOSENTHIEN ISLAND

MISSOURI

188

187

584,000 E

582,000 E

580,000 E

1,060,000 N

1,058,000 N

1,056,000 N

1,054,000 N

1,052,000 N

1,050,000 N

MARCH 14, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
186	407.87	407.53	
187	408.38	408.07	
188	408.89	408.60	
189	409.40	409.14	
190	409.91	409.68	
190.4	410.11	409.89	-- CHAIN OF ROCKS DAM

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

1. SOUNDED MARCH 14, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	MEL PRICE L&D TW	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER
ZERO N.G.V.D.	395.48	350.00	313.91	350.00
MILE	200.5	185.3	180.4	185.1
L. W. R. P.	396.3	395.8	388.5	380.5
14 MAR 2013	X	X	96.208(000) 96.015(17)	56.854(08-001) 56.461(8-000)

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1958-59 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING | Survey Date: March 14, 2013 | Ckd by: X
Drawn by: X | Reviewed by: X | APPROVED: X
SUBMITTED: X | Plot date: ########
File name: ########\########

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS 0 120 800 FEET 0 400

THE INFORMATION REPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE ENGINEER DEPARTMENT AND IS INTENDED ONLY AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 186.4 - 188.4

PLATE NUMBER

7

SEE PLATE NO. 6A

SEE PLATE NO. 4C

SEE PLATE NO. 7

SEE PLATE NO. 9

1,050,000 N

584,000 E

586,000 E

588,000 E

580,000 E

1,048,000 N

1,046,000 N

1,044,000 N

1,042,000 N

1,040,000 N

MOSENTHIEN ISLAND

MOSENTHIEN CHUTE

ILLINOIS

MISSOURI

CHAIN OF ROCKS CANAL

AERIAL ELECTRIC C

DIKE 186.3 (L)

DIKE 185.8(L)

DIKE 185.3(L)

DIKE 184.4(L)

SOUNDED MARCH 14, 2013

SOUNDED MARCH 19, 2013

MISSISSIPPI RIVER TRANS. CO 1-10"

NATURAL GAS PIPELINE CO 1-10"

NATURAL GAS PIPELINE CO 1-10"

ALLIED PIPELINE CO 1-10"

186

185

184

BARGE

BARGE

BARGE

MARCH 14, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 16:00	
186	407.87	407.53	
187	408.38	408.07	
188	408.89	408.60	
189	409.40	409.14	
190	409.91	409.68	
190.4	410.11	409.89	-- CHAIN OF ROCKS DAM

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND UPPER END OF CHAIN OF ROCKS CANAL)

MARCH 19, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 07:00	WSE @ 16:00	
181	400.53	400.12	
182	401.03	400.60	
183	401.52	401.08	
183.3	401.67	401.22	
184	402.02	401.56	-- LOWER CONFLUENCE
185	402.55	402.11	
186	403.08	402.66	

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND LOWER END OF CHAIN OF ROCKS CANAL)

WSE'S WERE ESTABLISHED BELOW THE CHAIN OF ROCKS DAM BY LEVELING FROM THE CHAIN OF ROCKS GAGE. INFORMATION SHOWN AT RIGHT IS THE WSE ESTABLISHED BY LEVELING AND NOT ACTUAL GAGE READINGS

1. SOUNDED MARCH 14 AND 19, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27). COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	L&D 27 UPPER	CHAIN OF ROCKS, MO	L&D 27 LOWER	ST. LOUIS, MO
ZERO N.G.V.D.	350.00	313.91	350.00	379.94
MILE	185.3	190.4	185.1	179.6
L. W. R. P.	395.8	388.5	380.5	376.4
14 MAR 2013	X	96.2108(-00) 96.0105-17)	56.85(08:00) 56.46(16:00)	X
19 MAR 2013	X	405.39(7:30) 405.08(15:45)	52.02(07:00) 51.56(16:00)	19.90(07:00) 19.51(16:00)

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (34,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING	Survey Date: March 14 and 19, 2013	Ckd by: X	
Drawn by: X	Reviewed by: X	APPROVED: X	
SUBMITTED: X			
File name: ##########	Plot date: ########		

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS 120 0
800 FEET 400 0

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY BOWEN ENGINEERING AND SHOULD BE INTERPRETED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 184.3 - 186.4

PLATE NUMBER

8

ILLINOIS

MISSOURI

590,000 E

592.000 E

594.000 E

588,000 E

584,000 E

1,040,000 N

1,038,000 N

1,036,000 N

1,034,000 N

SEE PLATE NO. 4C

SEE PLATE NO. 8

SEE PLATE NO. 10

U. S. ARMY DEPOT

KERR ISLAND

BISSEL POINT

MERCHANTS BRIDGE

DIKE 184.2(L)

DIKE 184.4(L)

DIKE 182.9(L)

CHEVRON 182.9(R)

CHEVRON 182.75(R)

CHEVRON 182.45(R)

BARGE

AERIAL ELECTRIC CABLES

BUCKEYE PIPELINE

SOUTHERN ILLINOIS POWER COOPERATIVE 138kV AERIAL ELECTRIC CABLES

4-2" AERIAL TRANSMISSION LINES

MISSISSIPPI RIVER TRANSMISSION CO. 138kV AERIAL ELECTRIC CABLES

MISSISSIPPI RIVER TRANSMISSION CO. 345kV AERIAL ELECTRIC CABLES

MARINE GAS TRANSMISSION CO. 12" SUBMARINE GAS PIPELINE

MARINE GAS TRANSMISSION CO. 8" SUBMARINE GAS PIPELINE

MARINE GAS TRANSMISSION CO. 8" SUBMARINE GAS PIPELINE

MARCH 19, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 07:00	WSE @ 16:00	
181	400.53	400.12	
182	401.03	400.60	
183	401.52	401.08	
183.3	401.67	401.22	
184	402.02	401.56	-- LOWER CONFLUENCE
185	402.55	402.11	
186	403.08	402.66	

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND LOWER END OF CHAIN OF ROCKS CANAL)

WSE'S WERE ESTABLISHED BELOW THE CHAIN OF ROCKS DAM BY LEVELING FROM THE CHAIN OF ROCKS GAGE, INFORMATION SHOWN AT RIGHT IS THE WSE ESTABLISHED BY LEVELING AND NOT ACTUAL GAGE READINGS

1. SOUNDED MARCH 19, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	L&D 27 UPPER	CHAN OF ROCKS, MO	L&D 27 LOWER	ST. LOUIS, MO
ZERO N.G.V.D.	350.00	333.91	350.00	379.94
MILE	185.3	190.4	185.1	179.6
L. W. R. P.	395.8	388.5	380.5	376.4
19 MAR 2013	X	405.39(7:30) 405.08(15:45)	52.02(7:00) 51.56(16:00)	19.90(7:00) 19.51(16:00)

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1958-59 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: March 19, 2013
Drawn by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ##REGIONALFILESPECIFICATION##
Plot date: ##MONTH/THEDATE##

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS 120 0
800 FEET 400 0
THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE AT THE TIME AND DATE NOTED HEREON AND IS INTENDED AS AN AID IN INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 182.2 – 184.5

PLATE NUMBER 9

ILLINOIS

1,030,000 N
1,028,000 N
1,026,000 N
1,024,000 N
1,022,000 N
594,000 E
592,000 E
590,000 E
588,000 E

DIKE 181.7(L)

SOUNDED MARCH 19, 2013
SOUNDED MARCH 20, 2013

BARGE
BRIDGE UNDER CONSTRUCTION
PIPE LINE
138kV AERIAL ELECTRIC CABLES
5-SUBMARINE ELECTRIC CABLES
1-5" COMMUNICATION CABLE
1-10" LINE
LACLEDES LANDING
CHEVRON 182.1(L)

SEE PLATE NO. 9
SEE PLATE NO. 11

MARCH 20, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 15:00
176	397.64	397.48
177	398.04	397.88
178	398.44	398.28
179	398.85	398.67
180	399.28	399.10
181	399.74	399.56
182	400.21	400.02

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND LOWER END OF CHAIN OF ROCKS CANAL)

MARCH 19, 2013
INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 07:00	WSE @ 16:00	
181	400.53	400.12	
182	401.03	400.60	
183	401.52	401.08	
183.3	401.67	401.22	
184	402.02	401.56	-- LOWER CONFLUENCE
185	402.55	402.11	
186	403.08	402.66	

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND LOWER END OF CHAIN OF ROCKS CANAL)

WSE'S WERE ESTABLISHED BELOW THE CHAIN OF ROCKS DAM BY LEVELING FROM THE CHAIN OF ROCKS GAGE. INFORMATION SHOWN AT RIGHT IS THE WSE ESTABLISHED BY LEVELING AND NOT ACTUAL GAGE READINGS

ST. LOUIS

MISSOURI

1. SOUNDED MARCH 19 AND 20, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	BROKEY'S LANDING	JEFFERSON BARRACKS	ST LOUIS, MO	L&D 27 LOWER
ZERO N.G.V.D.	357.78	377.69	379.94	350.00
MILE	136.0	168.7	179.6	185.1
L. W. R. P.	356.2	372.8	376.4	380.5
19 MAR 2013	X	X	19.90(07:00) 19.51(16:00)	52.02(07:00) 51.56(16:00)
20 MAR 2013	X	X	17.00(7:37) 16.91(15:10)	19.15(08:00) 18.97(15:00)	51.14(08:00) 50.95(15:00)

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1958-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING | Survey Date: March 19 and 20, 2013 | Ckd by: X
Drawn by: X | Reviewed by: X | APPROVED: X
SUBMITTED: X
File name: ########## | Plot date: ##########

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS
120
0
800 FEET
400
0

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE CONDITIONS AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 180.3 – 182.2

PLATE NUMBER

10

1. SOUNDED MARCH 20, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

MARCH 20, 2013 INTERPOLATED WATER SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 15:00
176	397.64	397.48
177	398.04	397.88
178	398.44	398.28
179	398.85	398.67
180	399.28	399.10
181	399.74	399.56
182	400.21	400.02

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND LOWER END OF CHAIN OF ROCKS CANAL)

ILLINOIS

MISSOURI

ST. LOUIS

LACLEDES LANDING

WEIR 179.9 (L)

WEIR 179.8 (L)

WEIR 179.6 (L)

BARGE

1-5" COMMUNICATION CABLES (WESTERN BELL)

1-4" COMMUNICATION CABLES (WESTERN BELL)

138kV AERIAL ELECTRIC CABLES

16-6.9kV AERIAL ELECTRIC CABLES

13-6.9kV AERIAL ELECTRIC CABLES

594,000 E

590,000 E

588,000 E

1,018,000 N

1,016,000 N

1,014,000 N

1,012,000 N

1,010,000 N

1,002,000 N

US Army Corps of Engineers St. Louis District

GAGE RECORD

	BROKEYS LANDING	JEFFERSON BARRACKS	ST LOUIS, MO	L&D 27 LOWER
ZERO N.G.V.D.	357.78	377.69	379.94	350.00
MILE	136.0	168.7	179.6	185.1
L.W.R.P.	356.2	372.8	376.4	380.5
20 MAR 2013	X	X	17.0(07.37) 16.9(15.90)	19.5(08.00) 18.9(19.90) 51.1(40.80) 50.9(49.00)

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

SEE PLATE NO. 12

Surveyed by: BOWEN ENGINEERING	Survey Date: March 20, 2013	Ckd by: X	
Drawn by: X	Reviewed by: X	APPROVED: X	
SUBMITTED: X		Plot date: ##########	File name: ##########.dgn

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

HYDROGRAPHIC SURVEYS

RIVER MILES 178.2 -180.3

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SYSTEMATIC HYDROGRAPHIC SURVEYS PERFORMED BY THE CORPS OF ENGINEERS AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

120 0 120 240 METERS
400 0 400 800 FEET

PLATE NUMBER 11

ILLINOIS

592,000 E
1,006,000 N
1,004,000 N
1,002,000 N
1,000,000 N
590,000 E
588,000 E
586,000 E
1,010,000 N

DIKE 177.8(L)

MARCH 20, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 15:00
176	397.64	397.48
177	398.04	397.88
178	398.44	398.28
179	398.85	398.67
180	399.28	399.10
181	399.74	399.56
182	400.21	400.02

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND LOWER END OF CHAIN OF ROCKS CANAL)

BARGE
DOCK

U. S. ARMY ENGINEER
SERVICE BASE DOCK

1. SOUNDED MARCH 20, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

SEE PLATE NO. 11
SEE PLATE NO. 13

MISSOURI

US Army Corps of Engineers
St. Louis District

GAGE RECORD	BROKEYS LANDING	JEFFERSON BARRACKS	ST LOUIS, MO	L&D 27 LOWER
ZERO N.G.V.D.	357.78	377.69	379.94	350.00
MILE	136.0	168.7	179.6	185.1
L. W. R. P.	356.2	372.8	376.4	380.5
20 MAR 2013	X	17.0007-371.16.9115'00"	19.5108-000 18.9715'-001	51.140'08-000 50.95'15-001

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: March 20, 2013
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ####SIGNATURE#####
Plot date: ####DATE/TIME#####

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

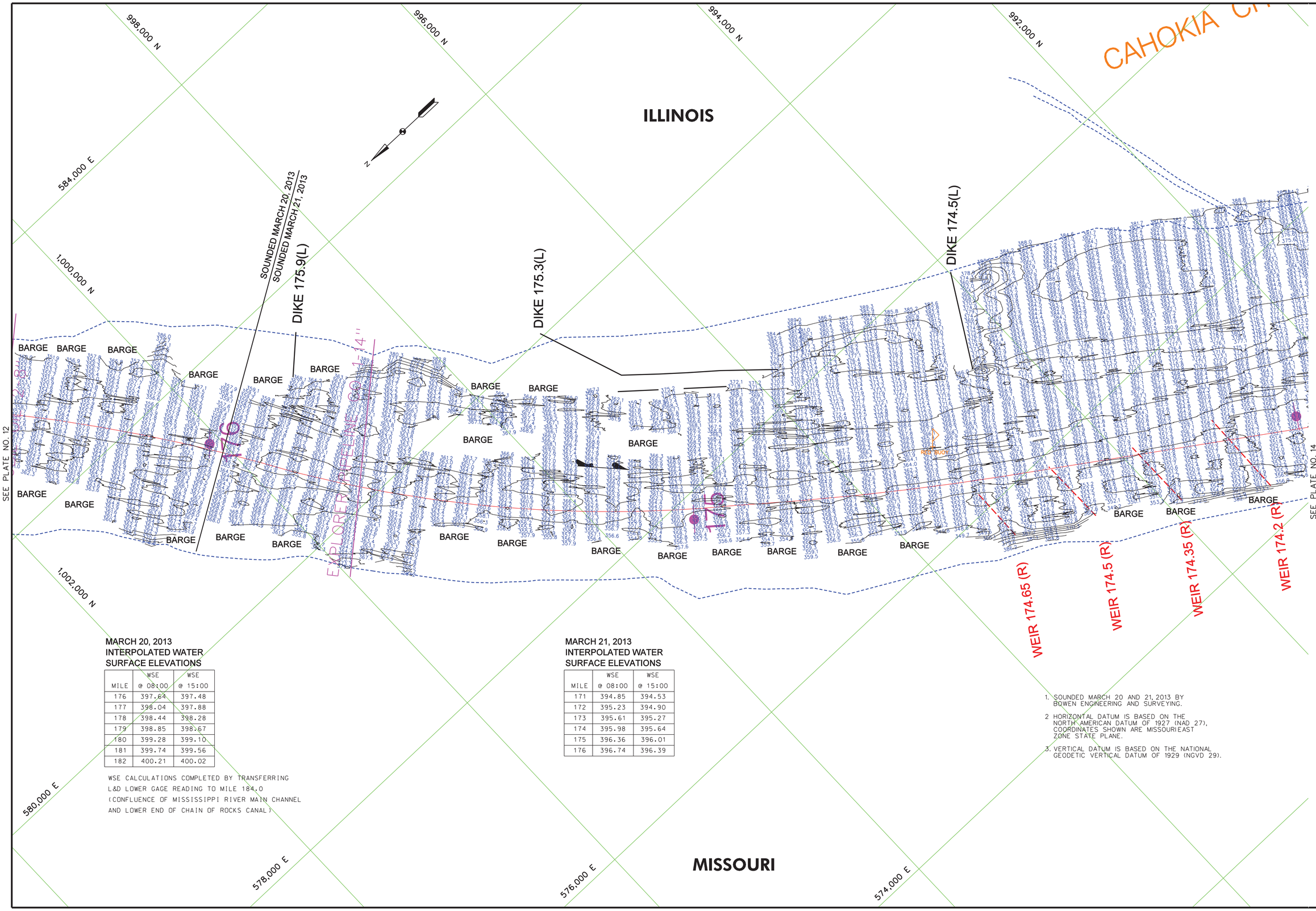
UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS
120
0
0
800 FEET
400
THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE CONDITIONS AS MEASURED BY HYDROGRAPHIC SURVEYS AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS
RIVER MILES 176.2 – 178.2

PLATE NUMBER
12



MARCH 20, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 15:00
176	397.64	397.48
177	398.04	397.88
178	398.44	398.28
179	398.85	398.67
180	399.28	399.10
181	399.74	399.56
182	400.21	400.02

WSE CALCULATIONS COMPLETED BY TRANSFERRING L&D LOWER GAGE READING TO MILE 184.0 (CONFLUENCE OF MISSISSIPPI RIVER MAIN CHANNEL AND LOWER END OF CHAIN OF ROCKS CANAL)

MARCH 21, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 15:00
171	394.85	394.53
172	395.23	394.90
173	395.61	395.27
174	395.98	395.64
175	396.36	396.01
176	396.74	396.39

1. SOUNDED MARCH 20 AND 21, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURIEAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	BROKEYS LANDING	JEFFERSON BARRACKS	ST. LOUIS, MO	L&D 27 LOWER
ZERO N.G.V.D.	357.78	377.69	379.94	350.00
MILE	136.0	168.7	179.6	185.1
L. W. R. P.	356.2	372.8	376.4	380.5
20 MAR 2013	X	17.00?:37?	16.9?5'00"	19.5?08:00 18.9?15'00"
21 MAR 2013	X	16.3?07:49?	16.0?14'45"	18.9?08:00 17.78?5'00"

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

Surveyed by: BOWEN ENGINEERING
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
Survey Date: March 20 and 21, 2013
File name: ########
Plot date: ########

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

0 120 240 METERS
0 400 800 FEET

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND SHOULD NOT BE CONSTRUED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 174.1 - 176.2

PLATE NUMBER
13

CAHOKIA CR

992,000 N

578,000 E

990,000 N

988,000 N

576,000 E

986,000 N

984,000 N

574,000 E

ILLINOIS

N

SEE PLATE NO. 13

576,000 E

574,000 E

572,000 E

570,000 E

568,000 E

BARGE

WEIR 174.35 (R)

WEIR 174.2 (R)

WEIR 174.0 (R)

WEIR 172.75 (R)

WEIR 172.6 (R)

WEIR 172.45 (R)

WEIR 172.30 (R)

174.4

174.3

ELECTRIC CABLES AERIAL

SEE PLATE NO. 15

MARCH 21, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 15:00
171	394.85	394.53
172	395.23	394.90
173	395.61	395.27
174	395.98	395.64
175	396.36	396.01
176	396.74	396.39

MISSOURI

55

1. SOUNDED MARCH 21, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	BROKEY'S LANDING	JEFFERSON BARRACKS	ST. LOUIS, MO	L&D 27 LOWER
ZERO N.G.V.D.	357.78	377.69	379.94	350.00
MILE	136.0	168.7	179.6	185.1
L. W. R. P.	356.2	372.8	376.4	380.5
21 MAR 2013	X	16.3107:49	16.0144:45	18.8608:00 17.7816:00

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1956-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

Surveyed by: BOWEN ENGINEERING
Survey Date: March 21, 2013
Drawn by: X
Reviewed by: X
Ckd by: X
SUBMITTED: X
APPROVED: X
File name: ########\########
Plot date: ########

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

240 METERS 120 0
800 FEET 400 0

THE INFORMATION REPORTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE ENGINEER DEPARTMENT AND SHOULD BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

HYDROGRAPHIC SURVEYS

RIVER MILES 172.2 – 174.1

PLATE NUMBER

14

574,000 E
572,000 E
570,000
568,000 E
566,000 E
564,000 E
982,000 N
980,000 N
978,000 N
976,000 N
974,000
972,000 N

LEVEE

ILLINOIS

AMERICAN BOTTOMS

MISSOURI

MARCH 21, 2013
INTERPOLATED WATER
SURFACE ELEVATIONS

MILE	WSE @ 08:00	WSE @ 15:00
171	394.85	394.53
172	395.23	394.90
173	395.61	395.27
174	395.98	395.64
175	396.36	396.01
176	396.74	396.39

DIKE 170.9(L)
DIKE 170.4(L)
DIKE 170.2(L)
DIKE 170.0(L)

SOUNDED MARCH 21, 2013

171

172

BARGE

138kV AERIAL ELECTRIC CABLES

MISSISSIPPI RIVER

PHILLIPS PETROLEUM COMPANY 16"

PHILLIPS PETROLEUM COMPANY 8"

PHILLIPS PETROLEUM COMPANY 3"-10"

"ABANDONED" (abandoned)

SEE PLATE NO. 14

SEE PLATE NO. 16

1. SOUNDED MARCH 21, 2013 BY BOWEN ENGINEERING AND SURVEYING.
2. HORIZONTAL DATUM IS BASED ON THE NORTH AMERICAN DATUM OF 1927 (NAD 27), COORDINATES SHOWN ARE MISSOURI EAST ZONE STATE PLANE.
3. VERTICAL DATUM IS BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

US Army Corps of Engineers
St. Louis District

GAGE RECORD

	BROKEY'S LANDING	JEFFERSON BARRACKS	ST LOUIS, MO	LAD 27 LOWER
ZERO N.G.V.D.	357.78	377.69	379.94	350.00
MILE	136.0	168.7	179.6	185.1
L.W.R.P.	356.2	372.8	376.4	380.5
21 MAR 2013	X	16.3107-49	16.0144-45	18.8608-000 17.7816-000

ELEVATIONS ARE REFERRED TO N.G.V.D. CONTOURS ARE BELOW 1958-57 LOW WATER REFERENCE PLANE (L.W.R.P.) (134,000 C.F.S.)

U.S. ARMY ENGINEER DIVISION
CORPS OF ENGINEERS
ST. LOUIS, MISSOURI

UPPER MISSISSIPPI RIVER BASIN

MISSISSIPPI RIVER

Surveyed by: BOWEN ENGINEERING
Drawn by: X
SUBMITTED: X
Reviewed by: X
Ckd by: X
APPROVED: X
Survey Date: March 21, 2013
File name: ###DESIGN#FILEDESCRIPTION###
Plot date: ###DATE/TIME###

HYDROGRAPHIC SURVEYS

RIVER MILES 170.1 – 172.2

240 METERS
800 FEET
0 120 400
0 120 400

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE BY THE CORPS OF ENGINEERS AND IS AN ACCURATE DELINEATION AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME

PLATE NUMBER
15