9-275-I
REV (10-01)

U.S. DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division
Acoustic Profiler Discharge Measurement Notes

Meas. No. 3
Processed by CBR
Ck'd by KmH

Sta. No —
Sta. Name Mississippi before Confluence
Date 05/11/20 11 Party CBR / KMH
Width 9020 Area 172,000 Vel. 3.06 G.H. — Disch. 525605
Profiler Water Temp. 18.46 °C at 0946 Rated area: — Index Velocity —
Profiler S/N 11170/5954 Mfgr RDI Freq. 600/1200 Firmware: 10.16 Software Ver. 2.07

Depth Cell Size	1.64	Other commands:	
No. of Cells	56		
Blanking Distance	0.82		
Water Mode	12		
Ambiguity Vel.			
Water pings	1		
Bottom pings	1		

Profiler Depth 0.42
Config. file —
Deployment tether
Moving Bed Loop Test
Moving Bed Present: Y (N)
Diag. Test ADCP TEST
Diag. Test Errors: 600 (Y) (N) 1200

Boat/Motor Used S13 ADCP Time to WT ☐ @ — GPS: —
Mag. Var. 1) -1.4 2) — 3) — 4) — Avg: — Comp. Cal.: +4.8

GAGE READINGS

Time					Inside	Outside
0955	Loop					
~~1015~~	~~START~~					
1100	START			MaxV = 7.25		
~~1211~~	~~END~~			MaxD = 13.5		
1300	END					
Weighed MGH						
GH correction						
Correct MGH						

Samples collected: water quality, sediment, biological, other: —
Measurements documented on other sheets: water quality, aux/base gage, other: —
Rain gage serviced/calibrated —
Weather Clear, Hot
Wind Spd. 0 Dir. —
Air Temp. 23.6 °C at 0953
Water Temp. 17.7 °C at 0946
Specific. Cond: —
Checkbar/chain found —
Changed to — at —
Correct —

Wading, cable, ice, boat, upstr., downstr., side bridge, — ft., mi. upstr., downstr. of gage.
Measurement rated: excellent (2%), good (5%), fair (8%), poor (>8%) based on following conditions:
Flow: uneven, turbulent
Cross section: Low grass bridge abutment. Row levee
Control: —
Gage operating: — Record removed: Y or N Filename: —
Battery voltage: — Intakes/Orifice cleaned/purged: —
Bubble-gage psi: Tank —, Line —; Bubble rate — /min.
Extreme-GH indicators: max —, min —
CSG checked: — HWM height on stick — Ref elev — HWM elev —
Remarks: Loop test w/ 600 hz. Transects w/ 1200 hz
MM1 500' US of Hwy 60 bridge
GH of zero flow = GH — - depth at control — = — ft, rated —

Sheet No. 1 of 1 sheets

MEASUREMENT NOTES

LEFT BANK: Sloping Vertical Other _____ RIGHT BANK: Sloping Vertical Other _____

Transect Number	Start			Ending		Total Discharge	Remarks
	Bank	Time	Distance	Distance	Time		
000	LEW	1055	80	100	1121	523278	
001	REW	1122	100	80	1140	519515	
002	LEW	1140	80	100	1158	528867	Barge passed during transect, ADCP ABORTED; ADCP Malfunction
003							
004							
005							
006	REW	1248	100	80	1302	530760	

Notes: Transects made w/ S# 5954 1200 mhz
Loop test made w/ S# 11170 600 mhz

545735

Station Number: MS_US_60_Bridge
Station Name: Mississisppi_Rr_before_Confluence

Meas. No: 3
Date: 05/11/2011

Party: CBR/KMH
Boat/Motor: 513
Gage Height: 0.00 ft

Width: 5,020 ft
Area: 172,000 ft²
G.H.Change: 0.000 ft

Processed by: CBR
Mean Velocity: 3.06 ft/s
Discharge: 526,000 ft³/s

Area Method: Avg. Course
Nav. Method: Bottom Track
MagVar Method: Model (-1.4°)
Depth Sounder: 0.000 ft

ADCP Depth: 0.420 ft
Shore Ens.:10
Bottom Est: Power (0.1667)
Top Est: Power (0.1667)

Index Vel.: 0.00 ft/s
Adj.Mean Vel: 0.00 ft/s
Rated Area: 0.000 ft²
Control1: Unspecified
Control2: Unspecified
Control3: Unspecified

Rating No.: 1
Qm Rating: F
Diff.: 0.000%

Screening Thresholds:
BT 3-Beam Solution: YES
WT 3-Beam Solution: NO
BT Error Vel.: 0.33 ft/s
WT Error Vel.: 3.50 ft/s
BT Up Vel.: 1.00 ft/s
WT Up Vel.: 10.00 ft/s
Use Weighted Mean Depth: YES

Max. Vel.: 7.25 ft/s
Max. Depth: 73.5 ft
Mean Depth: 34.2 ft
% Meas.: 89.61
Water Temp.: 17.7 °C
ADCP Temp.: 18.2 °C

ADCP:
Type/Freq.: Rio Grande/600 kHz
Serial #: 5954
Firmware: 10.16
Bin Size: 50 cm
Blank: 25 cm
BT Mode: 5
BT Pings: 1
WT Mode: 12
WT Pings: 1
WV : 175
WO : 4, 13

Performed Diag. Test: YES
Performed Moving Bed Test: YES
Performed Compass Test: YES
Meas. Location: US of 60 Bridge 20' - 500'

Project Name: Mississippi_US_60 Bridge_3.n
Software: 2.07

Tr.#		Edge Distance		#Ens.	Discharge						Width	Area	Time		Mean Vel.		% Bad	
		L	R		Top	Middle	Bottom	Left	Right	Total			Start	End	Boat	Water	Ens.	Bins
000	L	80	100	1189	24074	468672	29427	936	171	523279	5047	170970	10:55	11:21	3.67	3.06	2	0
001	R	80	100	833	23723	465994	28706	813	281	519516	5009	171346	11:22	11:40	4.95	3.03	3	0
002	L	80	100	827	24228	473501	29800	1000	339	528867	5012	169735	11:40	11:58	5.21	3.12	2	0
006	R	80	100	639	24183	475886	29720	762	210	530761	5026	174985	12:48	13:02	6.48	3.03	5	0
Mean		80	100	872	24052	471013	29413	878	250	525606	5023	171759	**Total**	02:06	5.08	3.06	3	0
SDev		0	0	230	229	4495	498	109	74.8	5155	17.4	2258.1			1.15	0.04		
SD/M		0.00	0.00	0.26	0.01	0.01	0.02	0.12	0.30	0.01	0.00	0.01			0.23	0.01		

Remarks: BT Reference. Loop test was made with 600Hz and Transects were made with 1200Hz.

Mississippi_US_60 Bridge_3_000_11-05-11_LBT_ASC20110511

LC Version 3.00, February 1, 2010

Processed on: 11-May-2011

Loop File: Mississippi_US_60 Bridge_3_000_11-05-11_LBT_ASC.TXT

Distance Made Good (ft)	Loop Time (sec)	Moving Bed Velocity (ft/s)	Moving Bed Direction (degrees)	Flow Direction (degrees)	Estimated Percent Correction (percent)
30.45	658.30	0.05	108.16	71.09	1.24

Percent Bad Bottom Track: 0.0

Difference in flow direction between out and back sections: 2.8 deg

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Loop Closure Error not in Upstream Direction -- No Correction Recommended

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Station Number: MS_US_60 Bridge
Meas. No: 3
Station Name: Mississisppi_US_60_Bridge_MAIN_CHANNEL
Date: 05/11/2011

Party: CBR/KMH
Boat/Motor: 513
Gage Height: 0.00 ft
Width: 2,290 ft
Area: 140,000 ft²
G.H.Change: 0.000 ft
Processed by:
Mean Velocity: 3.34 ft/s
Discharge: 468,000 ft³/s

Area Method: Avg. Course
Nav. Method: Bottom Track
MagVar Method: Model (-1.4°)
Depth Sounder: 0.000 ft
ADCP Depth: 0.420 ft
Shore Ens.:10
Bottom Est: Power (0.1667)
Top Est: Power (0.1667)
Index Vel.: 0.00 ft/s
Adj.Mean Vel: 0.00 ft/s
Rated Area: 0.000 ft²
Control1: Unspecified
Control2: Unspecified
Control3: Unspecified
Rating No.: 1
Qm Rating: U
Diff.: 0.000%

Screening Thresholds:
BT 3-Beam Solution: YES
WT 3-Beam Solution: NO
BT Error Vel.: 0.33 ft/s
WT Error Vel.: 3.50 ft/s
BT Up Vel.: 1.00 ft/s
WT Up Vel.: 10.00 ft/s
Use Weighted Mean Depth: YES
Max. Vel.: 7.25 ft/s
Max. Depth: 73.5 ft
Mean Depth: 61.3 ft
% Meas.: 91.31
Water Temp.: None
ADCP Temp.: 64.0 °F

ADCP:
Type/Freq.: Rio Grande / 1200 kHz
Serial #: 5954
Firmware: 10.16
Bin Size: 25 cm
Blank: 25 cm
BT Mode: 5
BT Pings: 1
WT Mode: 12
WT Pings: 1
WV : 175
WO : 4, 13

Performed Diag. Test: YES
Performed Moving Bed Test: YES
Performed Compass Test: YES
Meas. Location: US of 60 Bridge
Project Name: Mississippi_US_60 Bridge_3_M
Software: 2.08

Tr.#		Edge Distance L	Edge Distance R	#Ens.	Discharge Top	Discharge Middle	Discharge Bottom	Discharge Left	Discharge Right	Discharge Total	Width	Area	Time Start	Time End	Mean Vel. Boat	Mean Vel. Water	% Bad Ens.	% Bad Bins	
000	L	0	0	552	16694	428721	24161	0.000	0.000	469576	2329	138408	11:02	11:14	3.58	3.39	1	0	#
001	R	0	0	280	16209	419154	23253	0.000	0.000	458617	2263	141002	11:28	11:35	6.34	3.25	0	0	#
002	L	0	0	366	16917	431002	24589	0.000	0.000	472509	2303	138893	11:44	11:52	5.20	3.40	1	0	#
006	R	0	0	197	16806	431685	24162	0.000	0.000	472653	2276	143293	12:53	12:57	8.97	3.30	1	0	#
Mean		0	0	348	16657	427641	24041	0.000	0.000	468339	2293	140399	**Total**	01:55	6.02	3.34	1	0	
SDev		0	0	152	312	5798	563	0.000	0.000	6635	29.1	2233.9			2.27	0.07			
SD/M		0.00	0.00	0.44	0.02	0.01	0.02	0.00	0.00	0.01	0.01	0.02			0.38	0.02			

Remarks: This mmt subsectioned by TAK on 2/17/12 to determine main channel vs overflow for the purpose of estimating overflow on other dates.
Endpoints close to tree lines chosen for MAIN channel subsections using 0 ft edges.
Overflow computed as OVERFLOW = TOTAL - MAIN.

- transect has been subsectioned