C5

9-275 c
(August 1949)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. 522
Comp. by SNH
Checked by 1-6-58

DISCHARGE MEASUREMENT NOTES

BRAZOS R. AT RICHMOND, TEX.

Date Oct 12, 1957 Party Sauer & Lamar 20400

Width 482 Area 13300 Vel. 5.62 5.79 G. H. _____ Disch. 75,200

Method .2 No. secs. 23 G. H. change .05 in .09 hrs. Susp. 100 C 10

Method coef. 0.90 *1.05 Hor. angle coef. noted Susp. coef. 1.00 Meter No. 2815

Date rated Feb 16, 1949 Used rating for rod 5 susp. Meter 1.0 ft. above bottom of wt. Tags checked —

Spin before meas. — after —

Meas. plots —% diff. from — rating

Wading, cable, ice, boat, upstr., downstr., side bridge at feet, mile, above, below gage, and

Check-bar, chain found —

changed to — at —

Correct —

Levels obtained —

GAGE READINGS

Time	W.L.	Recorder	~~Inside~~ TAPE	Outside
9:45 AM			30.75	
9:57 AM	31.08		(30.73)	
10:10 AM	START		(30.72)	
11:05 AM	FINISH		(30.78)	
1:30 P.M			30.9	
Weighted M. G. H.			~~3080~~ 30.76	
G. H. correction				
Correct M. G. H.				

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section fairly uniform - clay, gravel-sand

Flow swift Weather warm

Other — +.04 fph. Air — ° F. @ —

Gage OK Water — ° F. @ —

Record removed No Intake flushed U. — L. —

Observer talked to him

Reviewed
Engr. in chg.

Control bed & banks
R/C +.06/hr

Remarks Some depths were sounded - others were estimated and picked from x-section to compute meas.

G. H. of zero flow _____ ft. Sheet No. 1 of 4 sheets.

* Computed from meas 5-14-57

* X-Section p-4 from sounding this day.

16—59921-1 U. S. GOVERNMENT PRINTING OFFICE

9-275
September 1943

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

AIR LINE DIST. 30'

Date 10-18, 1957 **DISCHARGE MEASUREMENT NOTES**

Brazos River at Richmond, Tex

Angle coefficient	Dist. from initial point	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	VELOCITY Mean in section	CORR. Area	AREA ~~Mean depth~~	Width	Discharge
	1002	REW @ 10:10 A.M									6	0
.94	990	14.0	2.8	80	41			4.29	211	224	16	910
.94	970	27.5	5.5	150	48			6.85	517	550	20	3530
	10:24 A.M											
.96	950	~~27.5~~ *(32.0)	5.5	150	44			7.47	614	640	20	4580
.97	930	*(35.0) ~~27.5~~	5.5	150	42			7.82	679	700	20	5300
	925	~~37.0~~	7' DRAG			L=14°	D=37.0-1.3=35.7					
.97	910	~~27.5~~ *(37.0)	5.5	150	46			7.14	718	740	20	5130
.97	890	*(39.0) ~~50.0~~	10.0	150	47			6.99	606	625	16	4230
	8' out for pier											
.97	870	*(40.5) ~~50.0~~	10.0	200	50			8.75	630	648 ~~650~~	16	5510
	10:33 AM	860	~~50.0~~ 40.7 Sounded-					L=34° 20' DRAG				
.97	850	~~50.0~~ *(40.0)	10.0	150	42			7.82	776	800	20	6070
.98	830	*(39.0) ~~50.0~~	10.0	150	44			7.47	764	780	20	5700
	~~33.5~~ *(38.0)	~~40.0~~	17' Drag L=30°									
.99	810	~~50.0~~	10.0	150	44			7.47	753	760	20	5620
	W.W. 31.09 @ 10:39 AM											
.98	790	~~40.0~~ *(37.7)	8.0	150	46			7.14	739	754	20	5280
		43'	15' DRAG			27° L	D=43-5.3=37.7					
1	770	~~40.0~~ *(38.0)	8.0	150	47			6.99	760	760	20	5310

57170

No. 2 of ~~4~~ 6 Sheets. Comp. by "VBS" Chk. by (p.15, 6)

U. S. GOVERNMENT PRINTING OFFICE 16—26076-2

9-275
September 1943

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

Date 10-18, 1957 **DISCHARGE MEASUREMENT NOTES**

Brazos River at Richmond, Tex

Angle coefficient	Dist. from initial point	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	VELOCITY: Mean in section	Area	Mean depth	Width	Discharge
		38.6										57170
⊥	750	42.	8.4	150	49	1		6.71	772		20	5180
				12' Drag		22°	D = 42 - 3.4 = 38.6					
		(37.5)*										
99	730	(40.0)	8.0	100	42			5.23	742	750	20	3880
		35.6										
99	710	(37.0)	7.4	150	58			5.67	705	712	20	4000
		37'	8' DRAG			15° L	D = 37 - 1.4 = 35.6					
97	690	(35.0)	7.0	150	56			5.87	601	620	20	3530
	*	(31.0)										
⊙ 92	670	27.0	5.4	100	43			5.10	497	540	20	2530
97	650	23.0	4.6	80	43			4.09	503	518	22½	2060
98	675	18.5	3.7	80	52			3.39	546	557	30	1850
		Say No pier effect (1:00 pm)										
96	590	18.0	3.6	80	42			4.19	648	675	37½	2720
⊥	550	12.5	2.5	25	43			1.30	488		39	640
	512	0		R&W @ 11:05 a.m.							19	—
			MWT = 31.13 @ 11:15 pm						13269		482	83560
								Say V coeff = 0.90				x.90
		Depths indicated *( ) are depths picked from X-section and used to compute area.										75,200

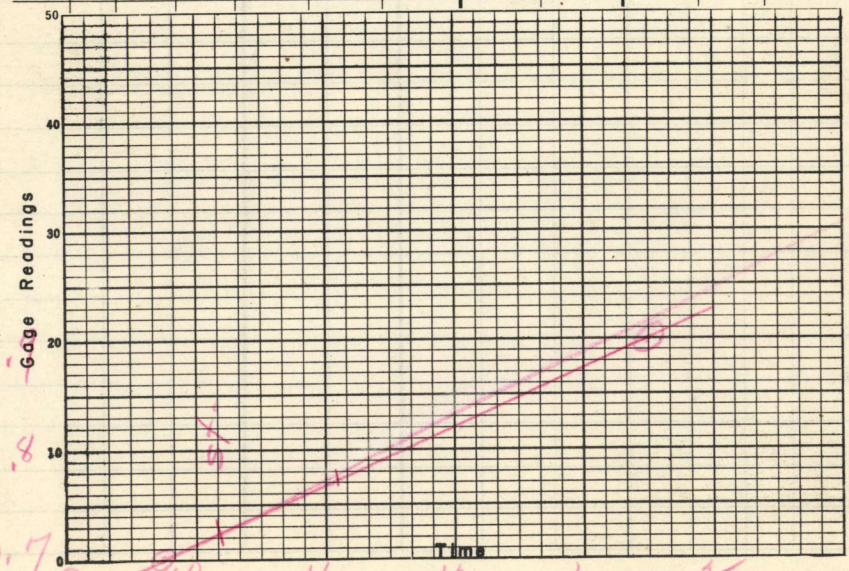
checked on p. 5 & 6

No. 3 of 46 Sheets. Comp. by "VBS" Chk. by → p. 5-6

80. Brazos River at Richmond Tex. Oct. 18, 1957

Dist. from initial point	Angle Coefficient	Depth	Depth of observation	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in section	Corr. Area	Area	Width	Discharge

85.
90.
92.
94.
96.
97.
98.
99.
99.
98.
97.
96.
94.
92.
90.
85.
80.
75.



Page ___ of ___ Comp. by: ___ Checked by: ___

Brazos-Richmond Oct. 18, 1957

Dist. from initial point	Angle Coefficient	Depth	Depth of observation	Revolutions	Time in seconds	VELOCITY		Corr. Area	Area	Width	Discharge
						At point	Mean in section				

Page ____ of ____ Comp. by: _____ Checked by: _____

9-275-b
(February 1940)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

DISCHARGE MEASUREMENT NOTES
TWO-TABLE METHOD

U. S. GOVERNMENT PRINTING OFFICE 16—13835

Brazos River at Richmond, Tex.

Date Oct. 18, 1957 No. of Meas.

Meter No. 2815 Reel Coefficient 1.00

Type of suspension 1.00

Size of line Notes by Sauer & Lamar

Copied from 9-275 by SHH 1-3-58.

Angle from E.	Distance from initial point	Distance above water surface	Vertical angle	Observed depth	Air correction	Wet-line depth	Water correction	Vertical depth	Depth of observation	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	VELOCITY: Mean in section	Corr. Area	Mean depth Area	Width	Discharge
.99	730							(40.0) *37.5	8.0	100	42			5.23	742	750	20	3880
.99	710	30	15°	37.0	1.1	35.9	.4	35.5 35.6	7.4	150	58			5.67	705	718	20	3980 4000
.97	690							(35.0) *31.0	7.0	150	56			5.87	601	620	20	3530
.92	670							27.0	5.4	100	43			5.10	497	540	20	2530
.97	650							23.0	4.6	80	43			4.09	503	518	22½	2060
.98	625							18.5	3.7	80	52			3.39	548	557	30	1650
			Say	no	pier	effect		(11:00 a.m.)										
.96	590							18.0	3.6	80	42			4.19	648	675	37½	2720
1	550							12.5	2.5	25	43			1.30	488		39	640
	512							0									19	0
				REW @ 11:05 a.m.														
				WWF = 31.13 @ 11:15 a.m.											1326		492	83,540
																		X.95
																		79,363

*Depths from cross section based on soundings this day.

Computed by _____ Checked by SHH No. 6 of 6 Sheets.

9-275-b
(February 1940)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

DISCHARGE MEASUREMENT NOTES
TWO-TABLE METHOD

U. S. GOVERNMENT PRINTING OFFICE 16—13835

Brazos River at Richmond, Tex.

Date Oct. 18, 1957 No. of Meas.

Meter No. 2815 Reel Coefficient 1.00

Type of suspension 1.00

Size of line Notes by Sauer & Lamar

Copied from 9-275 by SHH 1-3-58

Angles Coef.	Distance from initial point	Distance above water surface	Vertical angle	Observed depth	Air correction	Wet-line depth	Water correction	Vertical depth	Depth of observation	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	VELOCITY: Mean in section	Corr. Area	Mean depth Area	Width	Discharge
	1002			REW @ 10:10 a.m.													6	0
.94	990							14.0	2.8	80	41			4.29	211	224	16	910
.94	970							27.5	5.5	150	48			6.85	517	550	20	3580
	1032	4 a.m.																
.96	950							(27.5) * 32.0	5.5	150	44			7.47	614	640	20	4580
.97	930							(27.5) * 35.0	5.5	150	42			7.82	679	700	20	5300
	925	30	14°	37.0	1.9	36.1	1.4	35.7	—	—	—	—		—				—
.97	910							(27.5) * 37.0	5.5	150	46			7.14	718	740	20	5130
.97	890							(50.0) * 39.0	10.0	150	47			6.99	604	625	16	4230
		8' out for pier																
.97	870							(50.0) * 40.5	10.0	200	50			8.75	630	648	16	5510
		10:35 a.m.																
	860	30	34°	50.0	6.2	43.8	2.7	41.1 ~~40.7~~		—	—		—	—				—
.97	850							(50.0) * 40.0	10.0	150	42			7.82	776	800	20	6070
.98	830							(50.0) * 39.0	10.0	150	44			7.47	764	780	20	5700
.99	810	30	30°	(50.0)	4.6	45.4	2.2	~~43.2~~ ~~38.5~~ * 38.0	10.0	150	44			7.47	752	760	20	5620
		W.H	31	.09	@	10.39		a.m.	← Use.									
.98	790	30	27°	43.0	3.7	39.3	1.5	~~37.8~~ ~~37.7~~	8.00	150	46			7.14	739	754	20	5280
.98	770							(40.0) * 38.0	8.0	150	47			6.99	760	760	20	5310
.97																		
	750	30	22°	42.0	2.4	39.6	1.0	38.6	8.9	150	49			6.71	772		20	5160

Computed by _____ Checked by SHH No. 5 of 6 Sheets.

( ) Estimated depth

* Depth from cross section based on soundings this day

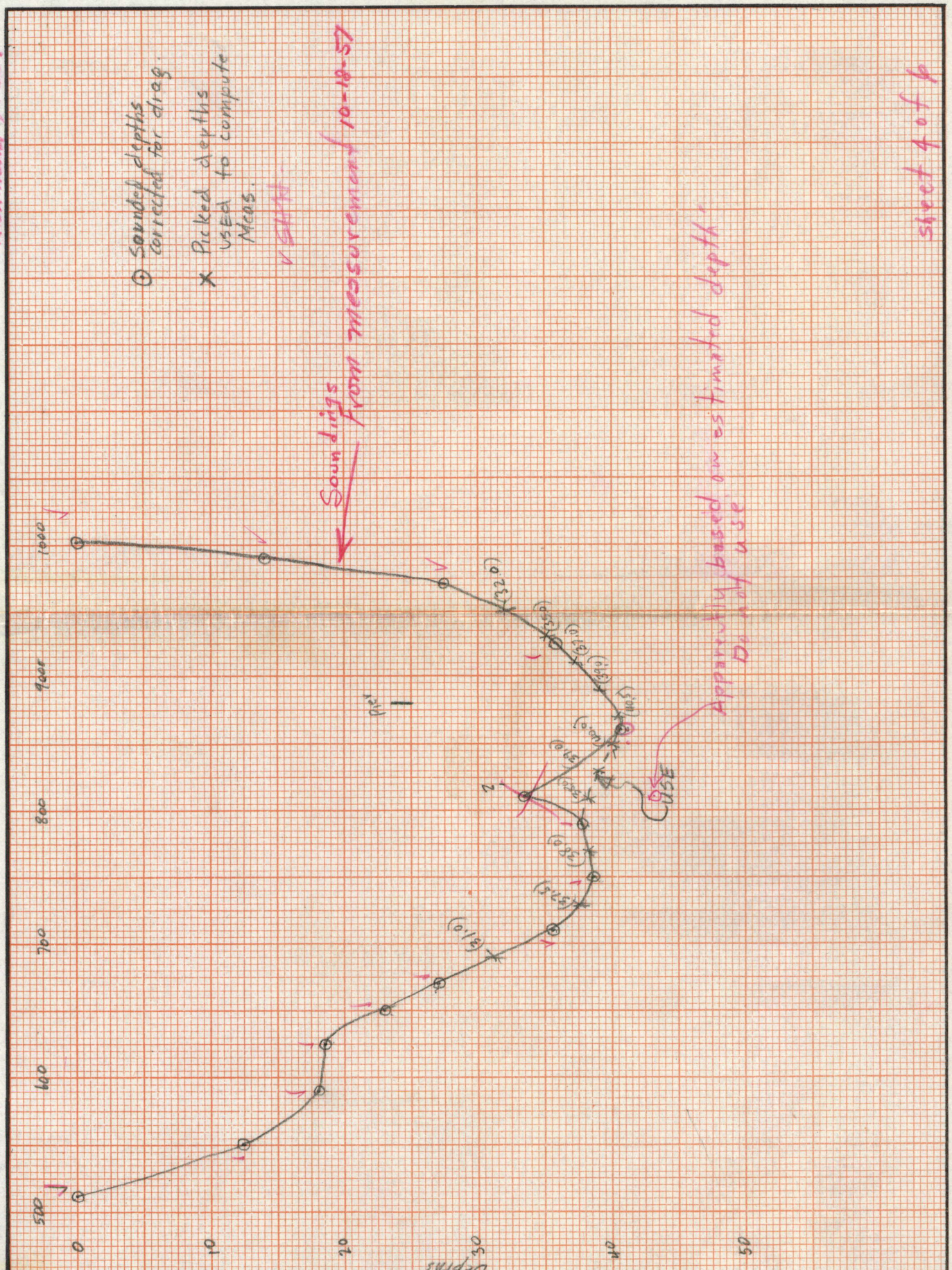
90 85 80 75

GPO 864943

9-213-E
(March 1949)
Cross-Section

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File .....



Sheet No. 4 of 4 Sheets. Prepared by "V133" Date ..... Checked by ..... Date .....

GPO : 1951 O - 941612