

RESERVOIR SEDIMENTATION
DATA SUMMARY

Cow Bayou No. 4

53 - 34

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER Golliday Strallon			2. RIVER Foster Cr.		3. STATE Texas		
	4. SEC. TWP. RANGE		5. NEAREST TOWN Waco			6. COUNTY McLennan		
	7. STREAM BED ELEV. 566			8. TOP OF DAM ELEV. 620.2		9. SPILLWAY CREST ELEV. 612.5		
RESERVOIR	10. STORAGE ALLOCATION		11. ELEVATION TOP OF POOL	12. SURFACE AREA ACRES	13. STORAGE ACRE- FEET	14. ACCUMULATED ACRE- FEET	15. DATE STORAGE BEGAN	
	a. FLOOD CONTROL		612.5	133.4	1,583	1,915	July 24, 1956	
	b. POWER						16. DATE NORMAL OPER. BEGAN	
	c. WATER SUPPLY							
	d. IRRIGATION							
	e. CONSERVATION		592.3	40	332	332		
	f. INACTIVE							
WATERSHED	17. LENGTH OF RESERVOIR 1.3 MILES				AV. WIDTH OF RESERVOIR 0.15 MILES			
	18. TOTAL DRAINAGE AREA 5.25 SQ. MI.			22. MEAN ANNUAL PRECIPITATION 33.69 (60) INCHES				
	19. NET SEDIMENT CONTRIBUTING AREA 5.20 SQ. MI.			23. MEAN ANNUAL RUNOFF 5.50 INCHES				
	20. LENGTH MILES		AV. WIDTH MILES		24. MEAN ANNUAL RUNOFF 293 AcFt./Sq. Mi.			
	21. MAX. ELEV.		MIN. ELEV. 566.0		25. CLIMATIC CLASSIFICATION Humid			
SURVEY DATA	26. DATE OF SURVEY	27. PERIOD YEARS	28. ACCL. YEARS	29. TYPE OF SURVEY	30. NO. OF RANGES OR CONTOUR INT.	31. SURFACE AREA ACRES	32. CAPACITY ACRE- FEET	33. C/W RATIO AC- FT. PER SQ. MI.
	July 24, 1956	---	---	---	---	133.4	1915	361
	April 1, 1958	1.68	1.68	Range Detail	21	133.4	1877	354
	July 24, 1956	---	---	---	---	40	332.0	
	April 1, 1958	1.68	1.68	Range Detail	8	40	297.4	
	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION		35. PERIOD WATER INFLOW ACRE- FEET			36. WATER INFL. TO DATE AC- FT.	
		a. MEAN ANNUAL	b. MAX. ANNUAL	c. PERIOD TOTAL	a. MEAN ANNUAL	b. TOTAL TO DATE		
	26. DATE OF SURVEY	37. PERIOD SEDIMENT DEPOSITS ACRE- FEET			38. TOTAL SED. DEPOSITS TO DATE ACRE- FEET.			
		a. PERIOD TOTAL	b. AV. ANNUAL	c. PER SQ. MI.-YEAR	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YEAR	
April 1, 1958	38.3	22.80	4.38	38.3	22.80	4.38		
April 1, 1958	34.6	20.60	3.96	34.6	20.60	3.96		
26. DATE OF SURVEY	39. AV. DRY WGT. LBS. PER CU. FT.	40. SED. DEP. TONS PER SQ. MI.-YR.		41. STORAGE LOSS PCT.		42. SED. INFLOW PPM		
		a. PERIOD	b. TOTAL TO DATE	a. AV. ANNUAL	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE	
April 1, 1958	41.66	3,974	3,974	1.19	1.99	---	---	
April 1, 1958	41.66	3,593	3,595	6.2	10.4	---	---	

1/ Both sediment and flood pools.
2/ Sediment pool only.

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION													
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION													

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR														
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY

47. REMARKS AND REFERENCES
 Land Use: 19% Cultivated; 17% Formerly Cultivated; 54% Range; and 10% Woods.
 C/I Ratio = 1.22 ^{1/}; 0.12 ^{2/}
 Estimated Trap Efficiency = 97.5% ^{1/}; 87% ^{2/}
 Total Annual Sediment Load Adjusted for Trap Efficiency = 4.49 Ac.Ft./Sq.Mi. ^{1/}
 4.55 Ac.Ft./Sq.Mi. ^{2/}

Distribution of sediment:
 Sediment Pool 90%
 Retarding Pool 10%

48. AGENCY SUPPLYING DATA Soil Conservation Service, 49. DATE April 18, 1958
 Temple, Texas

RESERVOIR SEDIMENT

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

DATA SUMMARY

Site No. 4, Cow Bayou Watershed

SCS-34 Rev. 6-66

NAME OF RESERVOIR

53-34a

DATA SHEET NO.

DAM	1. OWNER			2. STREAM Foster Branch			3. STATE Texas					
	4. SEC. TWP. RANGE			5. NEAREST P.O. Bruceville			6. COUNTY McLennon					
	7. LAT. 31° 20' 00" LONG. 97° 16' 15"			8. TOP OF DAM ELEVATION 620.2			9. SPILLWAY CREST ELEV. 612.5					
RESERVOIR	10. STORAGE ALLOCATION		11. ELEVATION TOP OF POOL		12. ORIGINAL SURFACE AREA, ACRES		13. ORIGINAL CAPACITY, ACRE-FEET		14. GROSS STORAGE, ACRE-FEET		15. DATE STORAGE BEGAN	
	a. FLOOD CONTROL		612.5 ^{1/}		133.40		1606.09		1915.00 ^{4/}		7-24-56	
	b. MULTIPLE USE											
	c. POWER											
	d. WATER SUPPLY										16. DATE NORMAL OPER. BEGAN	
	e. IRRIGATION											
	f. CONSERVATION		592.3 ^{2/}		34.45		92.20		308.91 ^{5/}		7-24-56	
g. INACTIVE		589.2 ^{3/}		25.27		216.71		216.71 ^{5/}				
WATERSHED	17. LENGTH OF RESERVOIR 1.30 MILES				AV. WIDTH OF RESERVOIR 0.15 MILES							
	18. TOTAL DRAINAGE AREA 5.25 SQ. MI.				22. MEAN ANNUAL PRECIPITATION 32.08 (83) INCHES							
	19. NET SEDIMENT CONTRIBUTING AREA 5.20 SQ. MI.				23. MEAN ANNUAL RUNOFF 5.50 INCHES							
	20. LENGTH 3.20 MILES		AV. WIDTH 1.64 MILES		24. MEAN ANNUAL RUNOFF 1539.9 AC.-F.T.							
	21. MAX. ELEV. 854		MIN. ELEV. 566		25. ANNUAL TEMP: MEAN 66° F RANGE 47° F-85° F							
SURVEY DATA	26. DATE OF SURVEY		27. PERIOD YEARS	28. ACCL. YEARS	29. TYPE OF SURVEY		30. NO. OF RANGES OR CONTOUR INT.	31. SURFACE AREA, ACRES	32. CAPACITY, ACRE-FEET	33. C/I. RATIO, AC.-FT. PER AC.-FT.		
	1/ 7-24-56		-	-	Range-Contour		53 R	133.40	1915.00	1.24		
	1/ 9-24-69		13.2	13.2				131.52	1833.53	1.19		
	2/ 7-24-56		-	-	(D)		2' CI	34.45	308.91	-		
	2/ 9-24-69		13.2	13.2				34.31	237.28	-		
	3/ 7-24-56		-	-				25.27	216.71	-		
	3/ 9-24-69		13.2	13.2	24.98	145.77	-					
	26. DATE OF SURVEY		34. PERIOD ANNUAL PRECIPITATION		35. PERIOD WATER INFLOW, ACRE-FEET			36. WATER INFL. TO DATE, AC.-FT.				
					a. MEAN ANNUAL	b. MAX. ANNUAL	c. PERIOD TOTAL	a. MEAN ANNUAL	b. TOTAL TO DATE			
	26. DATE OF SURVEY		37. PERIOD CAPACITY LOSS, ACRE-FEET			38. TOTAL SED. DEPOSITS TO DATE, ACRE-FEET						
			a. PERIOD TOTAL	b. AV. ANNUAL	c. PER SQ. MI.-YEAR	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YEAR				
	1/ 9-24-69		81.47	6.17	1.19	81.47	6.17	1.19				
2/ 9-24-69		71.63	5.43	1.04	71.63	5.43	1.04					
3/ 9-24-69		70.94	5.37	1.03	70.94	5.37	1.03					
26. DATE OF SURVEY		39. AV. DRY WGT., LBS. PER CU. FT.		40. SED. DEP., TONS PER SQ. MI.-YR.		41. STORAGE LOSS, PCT.		42. SED. INFLOW, PPM				
				a. PERIOD	b. TOTAL TO DATE	a. AV. ANN.	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE			
1/ 9-24-69		-		1419	1419	0.32	4.25	-	-			
2/ 9-24-69		72		251 ^{7/}	251 ^{7/}	1.76	24.19	-	-			
3/ 9-24-69		52 ^{6/}		1168	1168	2.48	32.73	-	-			

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION												
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION												

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR														
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
580.0	7.28	4.85	594.0	41.32	301.48	604.0	84.03	927.52
582.0	10.89	22.90	596.0	49.58	392.25	606.0	93.81	1105.27
584.0	13.99	47.72	598.0	58.60	500.31	608.0	103.96	1302.96
586.0	17.13	78.78	600.0	66.67	625.49	610.0	116.68	1523.47
589.2	24.98	145.77	602.0	75.75	767.81	612.5	131.52	1833.53
592.3	34.31	237.28						

47. REMARKS AND REFERENCES

- 1/ Total reservoir below emergency spillway crest elevation (612.5')
- 2/ Reservoir below principal spillway crest elevation (592.3)
- 3/ Sediment pool only
- 4/ Original storage computed by Prismoidal formula during first survey.
- 5/ Original storage determined by spudding and computed by Modified Prismoidal Formula during 1969 resurvey.
- 6/ Dry unit weight determined in situ by Radioactive density probe.
- 7/ Figure represents detention and conservation pool deposits.

48. AGENCY MAKING SURVEY Sedimentation Survey Party - Texas

49. AGENCY SUPPLYING DATA Soil Conservation Service

50. DATE 6-70

RESERVOIR SEDIMENT
DATA SUMMARY

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Cow Bayou, Site 4

SCS-34 Rev. 6-66

NAME OF RESERVOIR

53 - 34b

DATA SHEET NO.

DAM	1. OWNER			2. STREAM Foster Branch			3. STATE Texas																									
	4. SEC.		TWP.	RANGE		5. NEAREST P. O. Bruceville			6. COUNTY McLennan																							
	7. L $31^{\circ} 20' 00''$ N			E $97^{\circ} 16' 15''$ W			8. TOP OF DAM ELEVATION 620.2			9. SPILLWAY CREST ELEV 612.5																						
RESERVOIR	10. STORAGE ALLOCATION		11. ELEVATION TOP OF POOL		12. ORIGINAL SURFACE AREA, ACRES		13. ORIGINAL CAPACITY, ACRE-FEET		14. GROSS STORAGE, ACRE-FEET		15. DATE STORAGE BEGAN																					
	a. FLOOD CONTROL		612.5 1/		133.40		1606.09		1915.00		7-24-56																					
	b. MULTIPLE USE																															
	c. POWER																															
	d. WATER SUPPLY																															
	e. IRRIGATION										16. DATE NORMAL OPER. BEGAN																					
	f. CONSERVATION		592.3 2/		34.45		92.20		308.91		7-24-56																					
g. INACTIVE		589.2 3/		25.27		216.71		216.71																								
17. LENGTH OF RESERVOIR			1.30			MILES			AV. WIDTH OF RESERVOIR			0.16			MILES																	
WATERSHED	18. TOTAL DRAINAGE AREA				5.25				SQ. MI.				22. MEAN ANNUAL PRECIPITATION				32.08 (89)				INCHES											
	19. NET SEDIMENT CONTRIBUTING AREA				5.04				SQ. MI.				23. MEAN ANNUAL RUNOFF				5.50				INCHES											
	20. LENGTH		3.20		MILES		AV. WIDTH		1.64		MILES		24. MEAN ANNUAL RUNOFF				1539.90				AC.-F.T.											
	21. MAX. ELEV.				854				MIN. ELEV.				566				25. ANNUAL TEMP: MEAN				66°F				RANGE				47°F - 85°F			
	26. DATE OF SURVEY		27. PERIOD YEARS		28. ACCL. YEARS		29. TYPE OF SURVEY		30. NO. OF RANGES OR CONTOUR INT.		31. SURFACE AREA, ACRES		32. CAPACITY, ACRE-FEET		33. C/I. RATIO, AC.-FT. PER AC.-FT.																	
1/	7-24-56		-		-		Range - Contour (D)		53 R 2' CI		133.40		1915.00		1.24																	
1/	9-24-69		13.2		13.2						131.52		1833.53		1.19																	
1/	7-8-75		5.8		19.0						131.38		1812.10		1.18																	
2/	7-24-56		-		-						34.45		308.91		-																	
2/	9-24-69		13.2		13.2						34.31		237.28		-																	
2/	7-8-75		5.8		19.0						33.58		223.74		-																	
SURVEY DATA	26. DATE OF SURVEY		XXXXXXXXXX		XXXXXXXXXX		XXXXXXXXXX		XXXXXXXXXX		XXXXXXXXXX		XXXXXXXXXX																			
	3/	7-24-56		-		-				25.27		216.71		-																		
	3/	9-24-69		13.2		13.2				24.98		145.77		-																		
	3/	7-8-75		5.8		19.0				24.33		134.39		-																		
SURVEY DATA	26. DATE OF SURVEY		37. PERIOD CAPACITY LOSS, ACRE-FEET			38. TOTAL SED. DEPOSITS TO DATE, ACRE-FEET																										
			a. PERIOD TOTAL		b. AV. ANNUAL	c. PER SQ. MI.-YEAR		a. TOTAL TO DATE		b. AV. ANNUAL	c. PER SQ. MI.-YEAR																					
	1/	7-8-75		21.43		3.69	0.73		102.90		5.42	1.07																				
	2/	7-8-75		13.54		2.33	0.46		85.17		4.48	0.86																				
3/	7-8-75		11.38		1.96	0.39		82.32		4.33	0.83																					
SURVEY DATA	26. DATE OF SURVEY		39. AV. DRY WGT., LBS. PER CU. FT.		40. SED. DEP., TONS PER SQ. MI.-YR.		41. STORAGE LOSS, PCT.		42. SED. INFLOW, PPM																							
			a. PERIOD		b. TOTAL TO DATE		a. AV. ANN.		b. TOT. TO DATE		a. PERIOD		b. TOT. TO DATE																			
	1/	7-8-75		-		1241.26		1361.07		0.28		5.37		--																		
	2/	7-8-75		90		814.82 4/		470.4 4/		1.45		27.57		--																		
3/	7-8-75		52		426.44		940.02		2.00		37.99		--																			

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION														
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION														
26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR														
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
45. RANGE IN RESERVOIR OPERATION															
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.								
46. ELEVATION-AREA-CAPACITY DATA															
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY							
580.0	5.18	3.45	594.0	41.23	287.14	606.0	92.14	1086.66							
582.0	9.85	18.22	596.0	49.47	377.62	608.0	103.83	1282.32							
584.0	13.24	41.20	598.0	58.23	485.39	610.0	116.61	1502.42							
586.0	16.00	70.37	600.0	66.65	610.28	612.5	131.38	1812.10							
589.2	24.33	134.39	602.0	75.21	751.83										
592.3	33.58	223.74	604.0	83.98	910.78										
47. REMARKS AND REFERENCES															
<p>1/ Total reservoir below emergency spillway crest elevation (612.5)</p> <p>2/ Reservoir below principal spillway crest elevation (592.3)</p> <p>3/ Sediment pool only</p> <p>4/ Figure represents detention pool and conservation pool deposits.</p> <p>Geology - Austin Chalk, South Bosque Formation, Lake Waco Formation, all of Upper Cretaceous Age</p> <p>Land Use - 4% cultivated, 88% grassland, 5% woodland, & 3% miscellaneous</p> <p>Land Resource Area - Texas Blackland Prairie</p>															
48. AGENCY MAKING SURVEY				Soil Conservation Service											
49. AGENCY SUPPLYING DATA				Temple, TX				50. DATE 1-76							