

B-15

RESERVOIR SEDIMENTATION
DATA SUMMARY

Loyalhanna Creek

21-22

NAME OF RESERVOIR

DATA SHEET NO.

1. OWNER Dept of Army, C. of E.		2. RIVER Loyalhanna Creek		3. STATE Pennsylvania				
4. SEC. --- TW Loyalhanna Range		5. NEAREST TOWN Saltsburg, Pa.		6. COUNTY Westmoreland				
7. STREAM BED ELEV. 870.0		8. TOP OF DAM ELEV. 983.0		9. SPILLWAY CREST ELEV. 975.0				
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	975.0	3,280	93,310	95,345	June 1942		
	b. POWER							
	c. WATER SUPPLY							
	d. IRRIGATION					16. DATE NORMAL OPER. BEGAN		
	e. CONSERVATION	910.0	210	2,035	2,035	June 1942		
f. INACTIVE								
17. LENGTH OF RESERVOIR 19.0		MILES		AV. WIDTH OF RESERVOIR 0.220		MILES		
WATERSHED	18. TOTAL DRAINAGE AREA 291		SQ. MI.		22. MEAN ANNUAL PRECIPITATION (31 yrs.) 46.6		INCHES	
	19. NET SEDIMENT CONTRIBUTING AREA 286		SQ. MI.		23. MEAN ANNUAL RUNOFF (20 years) 22.0		INCHES	
	20. LENGTH 28.3		MILES		AV. WIDTH 10.3		MILES	
	24. MEAN ANNUAL RUNOFF		343,100		AC.-FT.			
	21. MAX. ELEV. 2900		MIN. ELEV. 870		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.
	June 1942			Range	19 Ranges	3,280	95,345	328
	1 Oct 1948	6.3	6.3	Range	19 Ranges 2/		94,652	325
SURVEY DATA	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION	35. PERIOD WATER INFLOW ACRE-FEET			36. WATER INF. TO DATE AC.-FT.		
			a. MEAN ANNUAL	b. MAX. ANNUAL	c. PERIOD TOTAL	a. MEAN ANNUAL	b. TOTAL TO DATE	
	1 Oct 1948	45.1	333,200	422,100 (1945)	2,105,600	333,200	2,105,600	
SURVEY DATA	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.-YR.	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YR.	
	1 Oct 1948	693	109.48	0.3762	693	109.48	0.3762	
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. ANNUAL	b. TO DATE	a. PERIOD	b. TO DATE
	1 Oct 1948	100*	819	819	0.115	0.73	527	527

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION													
	100-85	85-70	70-60	60-50										
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION														
1 Oct 1948	5	34	54	7										

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
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
1 Oct 1948	20	26	54											

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1942 (June-Sep)	914.79	897.44	34,300				
1943	926.92	884.83	407,100				
1944	920.90	880±	281,200				
1945	956.43	880±	410,300				
1946	938.32	880.0	331,900				
1947	938.89	910.10	291,700				
1948	956.82	908.43	349,000				

46. ELEVATION-AREA-CAPACITY DATA 3/								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
870	0	0	905	126	1,201	960	2,228	54,682
880	10	18	910	210	2,035	970	2,862	79,994
890	20	146	920	450	5,220	975	3,280	95,345
893	34	243	930	768	11,259	980	3,706	112,800
894	58	287	940	1,176	20,811	990	4,720	154,746
900	85	680	950	1,708	35,204			

47. REMARKS AND REFERENCES
 Letter report dated 29 March 1949, subject: Report Upon Sedimentation of Loyalhanna Creek Reservoir by District Engineer, US Army, Pittsburgh, Pa., to Chief of Engineers, Dept of the Army, Washington 25, D. C.

1/ Controlled by gates.

2/ Ranges cover the reach of the conservation pool. No deposits were observed above elev. 920.

3/ Total capacity reduction of 693 acre-feet is so small compared to total capacity of 95,345 acre-feet to top of gate (full pool) elevation 975 that it is believed inadvisable to adjust capacity curve at this time.

48. AGENCY SUPPLYING DATA
 Dept of Army, CE, Pittsburgh District

21 October 1949

RESERVOIR SEDIMENTATION
DATA SUMMARY

Loyalhanna

21-22a

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER Corps of Engrs, U.S. Army			2. RIVER Loyalhanna Creek			3. STATE Pennsylvania									
	4. SEC. -- TWP Loyalhanna RANGE --			5. NEAREST TOWN Saltsburg, Pa.			6. COUNTY Westmoreland									
	7. STREAM BED ELEV. 869			8. TOP OF DAM ELEV. 983			9. SPILLWAY CREST ELEV. 977 1/2									
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		975		3,280		93,300		95,300		June 1942					
	b. POWER															
	c. WATER SUPPLY															
	d. IRRIGATION										16. DATE NORMAL OPER. BEGAN					
	e. CONSERVATION										June 1942					
	f. INACTIVE		910		210		2,000		2,000							
WATERSHED	17. LENGTH OF RESERVOIR 19 MILES				AV. WIDTH OF RESERVOIR 0.27 MILES											
	18. TOTAL DRAINAGE AREA 290 SQ. MI.				22. MEAN ANNUAL PRECIPITATION (36 yrs.) 46.4 INCHES											
	19. NET SEDIMENT CONTRIBUTING AREA 285 SQ. MI.				23. MEAN ANNUAL RUNOFF (25 yrs.) 22.5 INCHES											
	20. LENGTH 28.3 MILES		AV. WIDTH 10.2 MILES		24. MEAN ANNUAL RUNOFF (25 yrs.) 347,600 AC.-FT.											
	21. MAX. ELEV. 2900		MIN. ELEV. 869		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.	
	June 1942		-		-		Contour (D)		5'		3,280 2/		95,300 2/		329	
	Oct. 1948		6.33		6.33		Range		15		3,280 2/		94,607 2/		326	
	Sept. 1953		4.92		11.25		Range		15		3,280 2/		93,755 2/		323	
	26. DATE OF SURVEY		34. PERIOD MEAN 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			
	Oct. 1948		44.64		329,000		420,700 (1945)		2,082,900		329,000		2,082,900			
	Sept. 1953		45.23		392,000		459,500 (1951)		1,928,700		356,600		4,011,600			
	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.-YR.		a. TOTAL TO DATE		b. AV. ANNUAL		c. PER SQ. MI.-YR.			
Oct. 1948		693		109		0.383		693		109		0.383				
Sept. 1953		852		173		0.607		1,545		137		0.481				
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. TO DATE		a. PERIOD		b. TO DATE		
Oct. 1948		44*		367		367		0.114		0.727		235		235		
Sept. 1953		44 (7)		582		461		0.144		1.62		311		272		

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, ROCK ELEVATION 975										
	106-85	85-70	70-60	60-50	50-45						
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
Oct. 1948	5	34	54	7							
Sept. 1953	7	23	33	27	10						

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR													
	0-10	10-20	20-30	30-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120	-125
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
Oct. 1948	23	26	51											
Sept. 1953	23	31	25	21										

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1942 (Jun-Sep)	914.79	886.02	34,300	1948	956.82	908.43	349,000
1943 <u>3/</u>	948.36	880+	407,100	1949	945.07	902.50	327,700
1944 <u>3/</u>	920.90	880+	281,200	1950	943.05	904.32	389,300
1945 <u>3/</u>	956.43	880+	410,300	1951	945.84	896.10	518,900
1946 <u>3/</u>	938.32	880+	331,900	1952	947.52	910.20	395,300
1947	938.89	910.10	291,700	1953	932.70	905.49	303,000
				1954 (Oct-May)	928.40	910.52	147,900

46. ELEVATION-AREA-CAPACITY DATA <u>4/</u>								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
869	0	0	910	210	2,035	950	1,708	35,204
890	20	146	920	450	5,220	960	2,228	54,682
900	85	680	930	768	11,259	970	2,862	79,994
905	126	1,201	940	1,176	20,811	975	3,280	95,395

47. REMARKS AND REFERENCES
1/ Elevation at top of gates in closed position. Spillway crest is at Elev. 948.
2/ At Elev. 975.
3/ Operated as detention basin Sept. 1943 through Feb. 1946.
4/ Total capacity reduction of 1545 acre-feet is so small compared to total capacity of 95,300 acre-feet, reservoir full Elev. 975, that it is believed inadvisable to adjust capacity curve at this time.

48. AGENCY SUPPLYING DATA US Army Engineer District, Pittsburgh ^{49.} DATE Rev. 29 June 1962
 Corps of Engineers, Pittsburgh, Pennsylvania

**RESERVOIR SEDIMENT
DATA SUMMARY**

Loyalhanna
NAME OF RESERVOIR

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

21-22b

DATA SHEET NO.

DAM	1. OWNER Corps of Engrs. U.S. Army				2. STREAM Loyalhanna Creek		3. STATE Pennsylvania	
	4. SEC. TWP Loyalhanna				5. NEAREST TOWN Saltsburg, Pa		6. COUNTY Westmoreland	
	7. STREAM BED ELEVATION 869				8. TOP OF DAM ELEVATION 983		9. SPILLWAY CREST ELEV. 976 1/	
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. MULTIPLE USE							
	b. FLOOD CONTROL	975	3280	93,300	95,300	June 1942		
	c. POWER							
	d. WATER SUPPLY					16. DATE NOR-MAL OPER. BEGAN		
	e. IRRIGATION							
	f. CONSERVATION							
	g. SEDIMENT					June 1942		
h. INACTIVE	910	210	2,000	2,000	3/			
17. LENGTH OF RESERVOIR		19	MILES		AV. WIDTH OF RESERVOIR		0.27 MILES	
WATERSHED	18. TOTAL DRAINAGE AREA		290	SQ. MI.		22. MEAN ANNUAL PRECIPITATION (20 yrs) 45.26 INCHES		
	19. NET SEDIMENT CONTRIBUTING AREA		285	SQ. MI.		23. MEAN ANNUAL RUNOFF (23 yrs) 22.15 INCHES		
	20. LENGTH	28.3	MILES		AV. WIDTH	10.2	MILES	
	21. MAX. ELEV.		2920	MIN. ELEV.		869	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.
	June 1942	-	-	Contour (D)	5'	3,280 2/	95,300 2/	329
	Oct. 1948	6.33	6.33	Range (D)	15	3,280 2/	94,652 2/	326
	Sept. 1953	4.92	11.25	Range (D)	15	3,280 2/	94,192 2/	325
	April 1962	8.58	19.83	Range (D)	28	3,280 2/	93,501 2/	322
	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	
	Oct. 1948	44.64	329,000	420,700 (1945)	2,082,900	329,000	2,082,900	
	Sept. 1953	45.23	392,000	459,500 (1951)	1,928,700	356,600	4,011,600	
	April 1962	45.84	337,400	484,700 (1956)	2,894,700	348,300	6,906,300	
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		
Oct. 1948	648	102	0.358	648	102	0.358		
Sept. 1953	460	93	0.326	1,108	98	0.344		
April 1962	691	81	0.284	1,799	91	0.319		
26. DATE OF SURVEY	39. AV. DRY WGT. LBS. PER CU. FT.	40. SED. DEP. TONS PERSQ. MI.-YR.		41. STORAGE LOSS PCT.		42. SED. INFLOW PPM		
		a. PERIOD	b. TOTAL TO DATE	a. AV. AN.	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE	
Oct. 1948	44 *	343	343	0.107	0.680	219	219	
Sept. 1953	44 (7)	312	330	0.103	1.16	168	195	
April 1962	44 *	272	306	0.095	1.89	168	184	

ENG FORM 1 MAR 63 1787

EDITION OF 1 SEP 62 MAY BE USED.

(EM 1110-2-4000)

(D) Detailed

* Assumed

(7) Number of samples

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE AND BELOW CREST ELEVATION 975												
	106-85	85-70	70-60	60-50									
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION												
Oct. 1948	4	33	55	8									
Sept. 1953	4	31	52	13									
April 1962	7	28	51	14									

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														
Oct. 1948	21	24	51	4											
Sept. 1953	26	37	33	4											
April 1962	26	35	35	4											

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV. #	INFLOW AC.-FT.
1942 Jun-Sep	914.79	886.02	34,300	1953	932.70	905.49	303,000
1943 3/	948.36	880 +	407,000	1954	931.26	910.52	191,900
1944 3/	920.90	880 +	281,200	1955	955.99	909.92	430,300
1945 3/	956.43	880 +	410,300	1956	946.09	910.21	471,000
1946 3/	938.32	880 +	331,900	1957	939.94	909.94	289,900
1947	938.89	910.10	291,700	1958	943.63	908.47	316,100
1948	956.82	908.43	349,000	1959	941.31	909.75	285,800
1949	945.07	902.50	327,700	1960	948.52	910.13	312,000
1950	943.05	904.32	389,300	1961	948.32	909.91	348,000
1951	945.84	896.10	518,900	1962	936.06	910.05	290,800
1952	947.52	910.20	395,300	1963 Oct-Aug	951.36	910.72	280,000

46. ELEVATION-AREA-CAPACITY DATA 4/								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
869	0	0	910	210	2,035	950	1,708	35,204
890	20	146	920	450	5,220	960	2,228	54,682
900	85	680	930	768	11,295	970	2,862	79,994
905	126	1,201	940	1,176	20,811	975	3,280	95,395

47. REMARKS AND REFERENCES
 1/ Elevation of top of gates in closed position. Elevation of bottom of gates in closed position is 947. Fixed crest gated spillway is at Elev. 948.
 2/ At Elev. 975.
 3/ Operated essentially as detention basin Sept. 1943 through Feb. 1946, except when use was necessary for flood control.
 4/ Capacity and area values are based on 1942 data. The total capacity reduction of 1799 acre-feet is so small compared to total original capacity of 95,300 acre-feet, reservoir full Elev. 975, that it is believed inadvisable to adjust original capacity curve at this time.

48. AGENCY MAKING SURVEY U.S. Army Engineer District, Pittsburgh
 49. AGENCY SUPPLYING DATA Corps of Engineers, Pittsburgh District 50. DATE September 1963