

B-15

RESERVOIR SEDIMENTATION DATA SUMMARY

Mahoning Creek

21-23

NAME OF RESERVOIR

DATA SHEET NO.

1. OWNER Dept of Army, C. of E.			2. RIVER Mahoning Creek			3. STATE Pennsylvania										
4. SEC. - Two Red Bank Range - Wayne			5. NEAREST TOWN Dayton, Pa.			6. COUNTY Armstrong										
7. STREAM BED ELEV. 1010.			8. TOP OF DAM ELEV. 1170.			9. SPILLWAY CREST ELEV. 1162. 1/										
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		1162		2,370		69,715		74,190		June 1941					
	b. POWER															
	c. WATER SUPPLY															
	d. IRRIGATION										16. DATE NORMAL OPER. BEGAN					
	e. CONSERVATION		1075		170		4,475		4,475		June 1941					
	f. INACTIVE															
WATERSHED	17. LENGTH OF RESERVOIR 19.5 MILES				AV. WIDTH OF RESERVOIR 0.211 MILES											
	18. TOTAL DRAINAGE AREA 339 SQ. MI.				22. MEAN ANNUAL PRECIPITATION (29 yrs.) 41.1 INCHES											
	19. NET SEDIMENT CONTRIBUTING AREA 335 SQ. MI.				23. MEAN ANNUAL RUNOFF (27 yrs.) 23.2 INCHES											
	20. LENGTH 34.8 MILES		AV. WIDTH 9.7 MILES		24. MEAN ANNUAL RUNOFF 119,800 AC.-FT.											
	21. MAX. ELEV. 2220		MIN. ELEV. 1010		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 1941						Range		15 Ranges		2,370		74,190		219	
	August 1948		7.3		7.3		Range		15 Ranges 2/				73,797		218	
SURVEY DATA	26. DATE OF SURVEY		34. PERIOD MEAN ANNUAL PRECIPITATION		35. PERIOD WATER INFLOW ACRE-FEET				36. WATER INFL. TO DATE AC.-FT.							
	August 1948		45.0		442,300		599,600 (1945)		3,150,900		442,300		3,150,900			
SURVEY DATA	26. DATE OF SURVEY		37. PERIOD SEDIMENT DEPOSITS ACRE-FEET			38. TOTAL SED. DEPOSITS TO DATE ACRE-FEET										
	August 1948		393			54.21			.160			393		54.21		0.160
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							
	August 1948		100*		348		348		0.073		0.53		200		200	

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION												
	150-132	132-117	117-102	102-87	87-72								
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION													
August 1948	19	14	15	31	21								

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR													
	0-10	10-20	20-22	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														
August 1948	37	55	8											

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1941 (Jun-Sep)	1093.86	1060.25	77,400	1948 (Oct-Aug)	1153.34	1075.53	402,800
1942	1115.06	1037.30	355,700				
1943	1152.17	1069.05	564,300				
1944	1119.96	1026.80	337,400				
1945	1155.54	1074.82	531,700				
1946	1119.07	1072.38	461,900				
1947	1114.66	1069.88	419,700				

46. ELEVATION-AREA-CAPACITY DATA 3/								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
1010	0	0	1090	242	7,500	1160	2204	69,500
1020	14	200	1100	300	10,100	1162	2370	74,190
1030	34	400	1110	412	13,700	1165	2628	81,500
1040	56	825	1115	504	16,100			
1050	84	1,525	1118	600	17,780			
1060	112	2,400	1120	666	19,000			
1070	148	3,650	1130	890	26,500			
1075	170	4,475	1135	1,014	31,280			
1080	190	5,400	1140	1,178	37,000			
			1150	1,582	50,500			

47. REMARKS AND REFERENCES
 Letter report dated 7 March 1949, subject: "Report Upon Sedimentation of Mahoning Creek Reservoir, Allegheny River Basin, Pa.," by District Engineer, Corps of Engineers, US Army, Pittsburgh, Pa., to Chief of Engineers, Dept of Army, Washington 25, D.C.

- 1/ Controlled by gates.
- 2/ Ranges cover the reach of the conservation pool. No deposits were observed above elev. 1100.
- 3/ Total capacity reduction of 393 acre-feet is so small compared to total capacity of 74,190 acre-feet to reservoir-full elevation (top of gates) that it is believed inadvisable to adjust capacity curve at this time.

RESERVOIR SEDIMENTATION
DATA SUMMARY

Mahoning Creek

21-23a

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER Corps of Engrs, U.S. Army			2. RIVER Mahoning Creek			3. STATE Pennsylvania								
	4. SEC. -- TWP. Red Bank RANGE -- Wayne			5. NEAREST TOWN Dayton, Pa.			6. COUNTY Armstrong								
	7. STREAM BED ELEV. 1008			8. TOP OF DAM ELEV. 1170			9. SPILLWAY CREST ELEV. 1164 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		1162		2,370		69,700		74,200		June 1941				
	b. POWER														
	c. WATER SUPPLY														
	d. IRRIGATION										16. DATE NORMAL OPER. BEGAN				
	e. CONSERVATION														
f. INACTIVE		1075		170		4,500		4,500		June 1941					
17. LENGTH OF RESERVOIR 19.5 MILES						AV. WIDTH OF RESERVOIR 0.19 MILES									
WATERSHED	18. TOTAL DRAINAGE AREA 340 SQ. MI.				22. MEAN ANNUAL PRECIPITATION (29 yrs.) 41.1 INCHES										
	19. NET SEDIMENT CONTRIBUTING AREA 336 SQ. MI.				23. MEAN ANNUAL RUNOFF (27 yrs.) 23.2 INCHES										
	20. LENGTH 34.8 MILES		AV. WIDTH 9.8 MILES		24. MEAN ANNUAL RUNOFF 419,800 AC.-FT.										
	21. MAX. ELEV. 2220		MIN. ELEV. 1008		25. CLIMATIC CLASSIFICATION Humid										
	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. ML.
June 1941		-		-		Contour (D)		5'		2,370		74,200		218	
August 1948		7.3		7.3		Range		15 2/		2,370		73,807		217	
SURVEY DATA	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		
	August 1948		45.0		431,600		599,600 (1945)		3,150,900		431,600		3,150,900		
	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.					
August 1948		393		53.8	0.160	393		53.8	0.160						
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						
August 1948		65*		227	227	0.073	0.53	130	130						

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, 2000 ELEVATION 1162													
	150-132	132-117	117-102	102-87	87-72									
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION														
August 1948	19	14	15	31	21									

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR													
	0-10	10-20	20-22	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														
August 1948	37	55	8											

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1941 (Jun-Sep)	1093.86	1060.25	77,400	1948 (Oct-Aug)	1153.34	1075.53	402,800
1942	1115.06	1037.30	355,700				
1943	1152.17	1069.05	564,300				
1944	1119.96	1026.80	337,400				
1945	1155.54	1074.82	531,700				
1946	1119.07	1072.38	461,900				
1947	1114.66	1069.88	419,700				

46. ELEVATION-AREA-CAPACITY DATA 3/								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
1010	0	0	1090	242	7,500	1160	2204	69,500
1020	14	200	1100	300	10,100	1162	2370	74,190
1030	34	400	1110	412	13,700	1165	2628	81,500
1040	56	825	1115	504	16,100			
1050	84	1,525	1118	600	17,780			
1060	112	2,400	1120	666	19,000			
1070	148	3,650	1130	890	26,500			
1075	170	4,475	1135	1,014	31,280			
			1140	1,178	37,000			
1080	190	5,400	1150	1,582	50,500			

47. REMARKS AND REFERENCES
 1/ Elevation at top of gates in closed position. Spillway crest is at Elev.1135.
 2/ Ranges cover the reach of the conservation pool. No deposits were observed above elev. 1100.
 3/ Total capacity reduction of 393 acre-feet is so small compared to total capacity of 74,200 acre-feet, reservoir full Elev.1162, 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**

MAHONING CREEK

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

NAME OF RESERVOIR

21-23b

DATA SHEET NO.

DAM	1. OWNER Corps of Engrs, US Army		2. STREAM Mahoning Creek		3. STATE Pennsylvania				
	4. SEC. -- TWP. Red Bank RANGE --		5. NEAREST TOWN Dayton, Pa.		6. COUNTY Armstrong				
	7. STREAM BED ELEVATION 1008		8. TOP OF DAM ELEVATION 1170		9. SPILLWAY CREST ELEV. 1164 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					June 41			
	b. FLOOD CONTROL	1162	2.370	69,700	74,200				
	c. POWER								
	d. WATER SUPPLY								
	e. IRRIGATION					16. DATE NORMAL OPER. BEGAN			
	f. CONSERVATION								
	g. SEDIMENT								
	h. INACTIVE	1075	170	4,500	4,500				
17. LENGTH OF RESERVOIR		19.5	MILES	AV. WIDTH OF RESERVOIR		0.29	MILES		
WATERSHED	18. TOTAL DRAINAGE AREA		340	SQ. MI.	22. MEAN ANNUAL PRECIPITATION (43 yrs)		34.2 INCHES		
	19. NET SEDIMENT CONTRIBUTING AREA		336	SQ. MI.	23. MEAN ANNUAL RUNOFF (26 yrs)		22.7 INCHES		
	20. LENGTH	34.8	MILES	AV. WIDTH	9.8	MILES	24. MEAN ANNUAL RUNOFF (26 yrs)	411,600 AC.-F.T.	
	21. MAX. ELEV.		2220	MIN. ELEV.		1008	25. CLIMATIC CLASSIFICATION		Humid
	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. PERSQ. MI.
June 1941		-	-	Contour (D)	5'	2,370	74,200	218	
Aug 1948		7.2	7.2	Range	15	2,370	73,807	217	
June 1965		16.8	24.0	Range (D)	29 2/	2,370	72,800	214	
SURVEY DATA	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		
	Aug 1948	45.0	431,600	599,600 (1945)	3,150,000	431,600	3,150,000		
	June 1965	42.7	418,400	666,300	7,029,200	424,200	10,180,100		
	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		
	Aug 1948	393	54.6	0.162	393	54.6	0.162		
	June 1965	1,007	59.9	0.178	1,400	58.3	0.174		
	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	
Aug 1948	65*	229	229	0.074	0.53	130	130		
June 1965	43 (11)	167	163	0.079	1.89	99	95		
* Assumed									

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW ORBIT ELEVATION 1162											
	140-132	132-117	117-102	102-87	87-72							
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION												
Aug 1948	19	14	15	31	21							
June 1965	156-136	136-116	116-96	96-76	76-56	56-36	36-16	16-6				
	7	14	14	16	16	19	7	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	-125
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION															
Aug 1948	37	55	8												
June 1965	29	40	16	3	3	1	1	6							

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

46. ELEVATION-AREA-CAPACITY DATA 3/								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
1010	0	0	1090	242	7,500	1160	2204	69,500
1020	14	200	1100	300	10,100	1162	2370	74,190
1030	34	400	1110	412	13,700	1165	2628	81,500
1040	56	825	1115	504	16,100			
1050	84	1,525	1118	600	17,780			
1060	112	2,400	1120	666	19,000			
1070	148	3,650	1130	890	26,500			
1075	170	4,475	1135, 1140	1,178	31,280, 37,000			
1080	190	5,400	1150	1,582	50,500			

47. REMARKS AND REFERENCES

1/ Elevation at top of gates in closed position. Spillway crest is at Elev 1135.

2/ Ranges cover the total reservoir storage area. No deposits were observed above Elev 1153.

3/ Total capacity reduction of 1400 acre-feet is so small compared to total capacity of 74,200 acre-feet, reservoir full Elev 1162, that it is believed inadvisable to adjust capacity curve at this time.

45.

RANGE IN RESERVOIR OPERATION

WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
1941 (June-Sept)	1093.86	1160.25	77,400
1942	1115.06	1037.30	355,700
1943	1152.17	1069.05	564,300
1944	1119.96	1026.80	337,400
1945	1155.54	1074.82	531,700
1946	1119.07	1072.38	461,900
1947	1114.66	1069.88	419,700
1948	1153.34	1075.53	406,800
1949	1123.37	1075.75	348,000
1950	1131.18	1075.70	395,400
1951	1130.95	1074.50	608,200
1952	1145.85	1071.17	489,300
1953	1129.10	1075.90	380,400
1954	1127.59	1074.32	298,200
1955	1131.38	1075.37	419,000
1956	1141.69	1075.73	669,900
1957	1143.89	1075.52	367,700
1958	1134.36	1075.56	464,300
1959	1142.03	1075.04	411,500
1960	1148.80	1074.59	442,600
1961	1143.45	1050.20	393,800
1962	1130.44	1075.47	333,800
1963	1132.76	1074.98	284,300
1964	1161.32	1075.66	385,800
1965	1117.73	1074.20	346,657
1966 (Oct-Mar)	1148.57	1073.65	220,483