

## RAINFALL AT Worthdale Watershed

Lat.

Lon.

County of

Lancashire

Rain Gauge, by

Observer

W.H. Hopkinson Esq. C.E.

Ribble - 6.1

Diameter .....	5										5			
Height .....	1.0									1.0				
Altitude .....	775									1115				
Year .....	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	MEANS.			
January .....			5.13	1.36	6.30	3.82	3.24	1.24	4.72	8.27				
February .....			2.93	6.06	7.98	6.2	1.53	3.27	3.58	2.80				
March .....			1.05	1.81	4.89	3.68	7.10	5.98	2.14	2.78				
April .....			1.90	.67	2.49	3.31	2.54	3.30	3.28	3.16				
May .....			4.36	2.74	2.82	1.21	.91	2.44	2.92	3.73				
June .....			1.89	4.51	2.94	3.47	4.77	3.06	7.12	3.98	1.37			
July .....			4.31	2.82	4.95	4.61	9.36	2.61	2.65	1.11	2.45			
August .....			8.11	5.13	4.26	5.98	9.19	2.80	5.93	4.98	2.09			
September .....			3.72	4.18	4.88	.57	2.41	8.67	4.78	1.35	7.21			
October .....			5.20	8.57	6.83	6.65	5.91	5.51	2.26	5.53	3.91			
November .....			5.15	2.88	4.01	4.03	6.98	2.81	4.34	4.50	2.19			
December .....			10.52	8.93	5.71	4.51	5.46	5.64	6.52	6.50	3.72			
TOTALS .....			44.22	51.63	47.39	46.22	54.30	56.62	40.42	49.83	44.59	43.68		

1889-96 60 see Yorks

Haworth Ch 4 miles ESE

Gauge on open Moor

1895 May Gauge moved from inner slope of Ponder Reservoir

1/2 miles lower down the river Worth (in Yorkshire)

RAINFALL AT Worthdale Watershed Reservoir

Lat.

Lon.

Central County of Lancashire South

Smyth's (Castaly) Rain Gauge, by David H. Hall - Observer, T. H. Hapkinson Esq. C.E.  
Ribble Esq. W. Fawcett Esq. C.E.

Diameter ..	5'										
Height ....	1.0										
Altitude ..	1115 T										
Year ....	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	MEANS.
January ..	8.33	3.40		5.30	5.36	2.77	7.31	3.84	5.39	3.38	
February ..	4.79	1.79		8.17	6.08	4.83	5.19	4.66	5.13	4.57	
March ..	7.75	4.74		7.44	2.60	4.70	5.06	4.84	5.31	3.28	
April .....	2.92	4.14		3.26	4.64	3.62	1.88	3.59	3.14	4.47	
May .....	2.47	2.01		4.14	2.80	1.44	4.18	4.17	3.49	2.73	
June .....	3.95	1.74		2.41	2.16	3.17	2.01	8.25	2.75	2.75	
July .....	2.90	2.14	4.72	5.04	2.91	2.54	2.72	3.49	5.27	6.78	
August .....	5.97	3.09	3.61	6.98	6.16	5.24	5.00	6.20	3.93	4.51	
September ..	1.98	1.31	1.92	5.79	1.03	3.26	1.63	1.43	5.29	3.51	
October .....	7.27	7.02	5.94	12.82	2.96	4.52	7.36	5.34	2.87	5.93	
November ..	5.20	14.32	3.45	3.68	4.62	5.58	6.78	3.08	4.25	3.18	
December ..	5.51	9.40	4.78	3.16	4.66	2.47	5.12	6.86	3.20	6.43	
TOTALS ..	52.04	55.10		68.19	45.97	44.14	54.24	55.48	50.02	51.52	

5 10 20 40 70 100

1900 Haworth Church 4 miles E.S.E

1902 During the first six months an incorrect funnel was used

1906 Haworth Station 4 1/4 Miles E

On open Moors

1909 Corrected for strong day

RAINFALL at Worthdale Watershed ReservoirCounty of Central LancashireObserver W. Fawcett Esq. C.E.River Basin Criss. Aire 4M. R. Barnett Esq. C.E.Symons Smardson Rain Gauge, by Kerst

Diameter ...	5										
Height .....	1 0										
Altitude ...	1115 T										
Year ...	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	MEANS.
January ...	8.21	2.96	4.66	4.70	4.33	9.04	6.59	4.68	3.47	6.17	
February ...	7.52	7.13	2.84	3.43	4.91	7.20	7.86	1.62	8.37	2.21	
March .....	1.49	3.20	7.55	7.19	6.59	2.80	5.31	3.14	1.90	6.86	
April .....	4.49	3.36	1.67	5.87	1.84	2.87	3.82	3.97	1.26	2.46	
May .....	4.02	2.21	3.54	3.55	2.46	2.67	3.19	2.32	3.23	2.78	
June.....	2.70	5.36	8.34	3.01	2.15	.80	3.35	2.92	1.95	1.83	
July .....	4.85	.40	5.87	1.30	3.31	5.38	3.59	1.86	3.86	2.72	
August.....	7.50	2.96	8.30	1.98	3.06	4.61	3.84	7.83	3.49	3.73	
September ..	.51	3.93	3.02	1.61	3.21	1.56	3.12	2.69	10.60	2.26	
October ...	3.49	4.52	4.99	2.43	2.60	1.62	12.01	8.18	3.90	2.83	
November ...	6.70	5.84	4.41	6.38	8.80	3.07	5.07	8.59	2.88	3.97	
December ...	6.73	8.54	6.76	4.00	9.35	7.91	5.88	3.50	8.66	7.68	
TOTALS ...	58.21	50.41	61.75	44.95	52.51	47.53	63.62	48.30	53.87	45.00	
	→ D					→ D	→ D	→ D	→ D	→ D	

1910 obs made 3 fm - 4 fm 1914

1911 8 on moorland

Date.	Lat. N.	Long. W.	Railway Station.	Distance.	Direction.	Church.	Distance.	Direction.
	53°50'18" 14	2°22'56" 54	Haworth	4½ m	E	Haworth	4½ m	E

## RAINFALL at Northdale Watershedless Reservoir

County of Lancashire

Observer M. R. Barnett, Esq. C.E.

River Basin Guse-Aire &amp;

Song of Keighley Valley 1920

Spars. snowdon Rain Gauge, by Glentle  
M.O. (120)

(1920) Alan Atkinson

Diameter ...	5"										MEDIUM 1920
Height .....	10										
Altitude ...	1110'										
Year .....	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	
January ...	6.15	8.16	4.36	4.05	3.47	3.59	5.64	5.23	12.88	1.88	8.44
February ...	4.05	5.6	5.41	7.04	1.32	6.41	5.50	2.63	7.22	1.81	1.30
March .....	4.50	4.14	3.47	1.89	1.78	1.24	3.25	4.84	3.53	1.29	3.20
April .....	5.35	1.64	3.62	4.18	1.87	2.42	2.60	4.29	1.70	1.59	4.29
May .....	6.09	2.63	1.98	4.37	1.10	3.35	4.47	1.74	1.75	3.63	2.84
June .....	2.61	1.18	2.83	1.02	1.10	0.03	3.55	4.54	6.86	2.24	2.16
July .....	6.78	2.35	5.25	3.89	3.55	1.91	3.96	4.96	2.42	3.36	8.51
August .....	1.84	6.51	6.66	5.49	4.28	3.97	4.64	7.85	5.95	5.24	7.59
September ...	1.73	2.05	4.80	5.79	1.10	2.18	4.28	6.90	1.18	1.99	5.18
October .....	2.69	2.86	1.20	5.83	1.10	4.41	4.38	5.46	6.68	7.15	7.08
November ...	3.00	2.54	2.11	7.11	1.10	3.26	8.04	6.11	8.15	8.50	7.61
December ...	3.70	7.79	5.24	4.23	1.91	5.72	2.27	2.33	3.21	11.27	4.42
TOTALS...	48.29	41.44	46.93	54.89	1.10	37.49	52.58	56.88	61.84	48.78	62.62

1924 N. P. Row, 2 miles

1925 not printed, low.

1926. No objects near.

21

Position of Station on reduced Ordnance Survey  
Map, 2 miles to 1 inch Series

} No. of Map

Reference No.

Date.	Lat. N.	Long.	Railway Station.	Distance from gauge	Direction from gauge	Parish Church.	Distance from gauge
1920	53°50'14"	2°2'54"	Haworth	2200 ft	E 7° S	Haworth	20350 ft E 7° S

## RAINFALL at Watersheddles Reservoir

County of Central Lancashire

Observer A. Atkinson, Esq., C.E.

River Basin Dose-Aire-4

T. New Wood, M.C., C.E.

Type of Gauge Standard

A. Boothman, Esq., C.E. (1919)

Annual Average 48.4 in. based on 31 years obs. unweighted. Period of average 1881-1915 Ref. S  
744053/27.

Diameter	5'											
Height	1.0											
Altitude	1115											
Year	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	Means	
January	5.73	6.96	3.77	4.74	2.75	6.11	6.25	7.86	7.31	2.25		
February	6.75	8.1	7.02	4.7	9.77	3.02	7.12	2.64	6.36	2.54		
March	5.8	3.38	2.83	3.39	2.30	3.66	3.29	2.15	3.93	3.98		
April	4.21	4.56	1.97	3.18	3.54	2.04	3.69	9.0	2.88	4.46		
May	2.80	5.02	2.94	4.11	1.31	2.16	3.08	4.94	1.73	1.21		
June	6.73	1.68	2.59	3.07	5.12	4.64	3.13	5.40	3.98	.95		
July	5.18	5.00	3.38	3.03	2.52	4.71	2.68	6.30	8.39	5.51		
August	5.23	1.83	1.59	4.87	2.19	3.91	1.98	8.17	3.65	.82		
September	5.34	7.31	2.06	3.99	8.86	5.03	2.46	2.29	2.12	5.34		
October	3.16	8.27	5.26	6.84	12.13	5.75	2.77	11.34	3.53	5.37		
November	8.45	3.99	2.92	2.94	8.18	6.92	2.33	8.05	9.75	8.30		
December	3.22	2.14	.65	7.19	4.39	6.67	2.98	6.32	3.94	5.62		
TOTALS	57.38	50.40	36.98	47.87	63.06	54.62	41.76	66.36	57.57	46.35		
	d	d	d	d	d	d	d	d	d	d		

1933. Gauge inspected August 29<sup>th</sup> site of old gauge is unsatisfactory - recommended that when comparative readings are available for about three years gauge should be abandoned. Site of new gauge highly satisfactory. See file 744053/27.

\* Gauge overhauled on move.

Position of Station on reduced Ordnance Survey Map, } No. of Map..... Reference No. ....  
1 mile to 1 inch Series }

Date.	Lat. N.	Long.	Railway Station.	Distance from gauge	Direction from gauge	Parish Church.	Distance from gauge	Direction from gauge
1931			Haworth	22.000 ft	E 7° S	Haworth	20.500'	E 7° S

BRITISH RAINFALL ORGANIZATION, EXHIBITION ROAD, LONDON, S.W.7.

## RAINFALL at Watersheddles Reservoir (No. 2)

County of Lancashire

Observer A. Atkinson, Esq., C.E.

River Basin Area - Aire - 4

T. Noel Wood, Esq., M.C., C.E.

Type of Gauge Standard

A. Boothman, Esq., C.E.

Annual Average.....in. based on.....years obs. un-weighted. Period of average.....Ref.....

c 1933

f 744053/27

Diameter											Means
Height			5								
Altitude			100								
Year	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	
January			4.02	4.91	3.01	7.07	6.94	8.35	8.01	2.34	
February			7.24	4.48	10.03	3.54	8.08	2.78	6.61	2.65	
March			2.93	8.66	2.24	4.07	3.98	2.14	3.93	4.18	
April			2.19	3.31	3.73	2.23	3.92	.88	2.91	4.60	
May			3.08	4.06	1.35	2.21	3.06	4.95	1.78	1.20	
June			2.75	3.21	5.13	4.62	3.10	8.45	3.93	.89	
July			3.68	2.96	2.41	4.90	2.66	6.30	8.65	5.58	
August			1.55	4.73	2.19	4.03	2.03	8.38	3.58	2.76	
September			2.05	3.97	8.96	5.03	2.56	2.36	2.17	5.30	
October			5.31	7.27	12.43	5.85	2.91	11.30	3.80	5.47	
November			3.31	3.22	8.56	7.06	2.72	8.23	9.79	8.60	
December			.76	7.70	4.87	7.01	3.39	6.88	4.07	5.77	
TOTALS			38.77	49.48	64.91	57.62	45.35	68.00	59.23	49.34	

Site approved by Dr. Glascow in August 1933.

1934 Stone Wall 60" high 22' 6"

Position of Station on reduced Ordnance Survey Map, } No. of Map..... Reference No. ....  
1 mile to 1 inch Series

Date.	Lat. N.	Long.	Railway Station.	Distance from gauge	Direction from gauge	Parish Church.	Distance from gauge	Direction from gauge
			Haworth	21,900'	E 72°	Haworth	20,400'	E 72°

BRITISH RAINFALL ORGANIZATION, EXHIBITION ROAD, LONDON, S.W.7.

Station No. 303

41

## RAINFALL at Watershedles Reservoir \*

County of Central Lancashire Observer A. Burroughs Esq., C.E. (left 1946)

River Basin Dove Cire - 4 G. E. T. Goldry Esq. succeeds

Type of Gauge Standard (W.W. Eng. Model 1947)

Annual Average 48.4 in. based on 31 years obs unweighted. Period of average 1881-1915 Ref S

File No. 744053/2

Diameter	5"										
Height	10'										
Altitude	115'										
Year	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	Means
January	2.56	5.15	6.60	9.13	4.18						
February	7.54	1.91	4.59	3.27	5.24						
March	4.80	3.53	1.74	.73	1.42						
April	3.06	2.58	3.26	3.67	1.96						
May	3.24	4.27	3.57	4.43	4.69						
June	.86	1.32	4.87	4.48	3.76						
July	3.38	5.24	4.01	3.69	2.37						
August	6.44	4.90	7.55	3.37	3.97						
September	.82	3.78	5.13	6.64	2.61						
October	6.21	8.01	3.61	6.28	5.47						
November	3.52	1.81	4.10	7.84	.72						
December	2.58	5.13	3.50	5.17	2.34						
TOTALS	45.34	48.65	52.53	58.70	38.73						
	d	d	d	d	d n.p.						

1945 n.p. gauge to be taken.

1947 Record terminated in June. Engineer agrees to it. T., see one 1627.

\* Gauge overexposed on moor.

Position of Station on reduced Ordnance Survey Map, 1 mile to 1 inch Series No. of Map ..... Reference No. SD 93

Date.	Lat. N.	Long.	Railway Station.	Distance from gauge	Direction from gauge	Parish Church.	Distance from gauge.
1941			Haworth	22000 ft	E 7° 5'	Haworth	20500 ft E 7° 25'

BRITISH RAINFALL ORGANIZATION

(4486-50) Wt. 47525-4472 12,000 2/40 T.S. 700

✓	20-23 25-30 n.p. 25	✓	41-45 n.p. 45
✓	20-23 25-29	✓	41-45 n.p. 45
✓	✓	✓	✓

20, 15 D 20-23 D 25-29 ✓ but D 34  
17-19 d 25

Station No. 3013/

## RAINFALL at Watershedles Reservoir (N°2)

41

County of Central Lancashire Observer R. Bent of a Eng. C.E. (M.F. 1946)  
 River Basin Dune. Aire 4 G. E. H. Boldy Eng. succeeds  
 Type of Gauge Snowdon (W. Eng. March 1947)

Annual Average in. based on years obs. un-weighted. Period of average Ref

c. 1933

File No. 744053/27

Diameter	5"		✓	074	852						
Height	1'0"				1						
Altitude	115'				41						
Year	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	Means
January	3.02	5.47	7.15	9.61	4.66	5.21	4.62	10.45	3.35	4.00	
February	7.74	1.99	4.77	3.52	5.91	7.30	2.25	4.25	4.36	7.80	
March	4.96	4.17	1.83	76	1.55	2.20	13.08	3.09	1.81	2.89	
April	3.22	2.54	3.35	3.89	2.17	1.70	4.84	3.04	5.71	4.47	
May	3.36	4.46	3.79	4.49	5.12	2.06	2.71	1.53	3.06	2.70	
June	.82	1.45	4.84	4.59	4.01	3.00	3.63	5.41	1.10	2.82	
July	3.34	5.59	4.29	3.75	2.60	5.35	3.93	2.30	3.04	4.59	
August	6.60	5.20	7.49	3.52	4.36	8.66	.38	5.77	3.34	8.15	
September	.86	4.13	5.35	7.21	3.00	8.89	3.45	4.03	1.39	8.19	
October	6.62	9.13	3.62	6.68	6.04	1.45	1.80	3.11	5.85	4.17	
November	3.75	1.99	4.11	8.48	.84	8.55	8.35	2.39	8.10	6.91	
December	3.10	5.44	3.73	5.64	2.78	4.51	5.33	5.56	9.08	3.01	
TOTALS	47.38	51.56	54.32	62.14	43.04	58.88	54.31	50.93	50.19	59.70	

1941 Day stone wall 6' high 22'6" from gauge.

Position of Station on reduced Ordnance Survey Map, } No. of Map..... Reference No.....  
1 mile to 1 inch Series

Date.	Lat. N.	Long.	Railway Station.	Distance from gauge	Direction	Parish Church.	Distance from gauge.
1941			Haworth	21900ft	E7°S	Haworth	20400ft E7°S

BRITISH RAINFALL ORGANIZATION

Station No. 3013/1

51

## RAINFALL at Watershedles Reservoir - No. 2.

County of Central Lancashire

Observer G. &amp; V. Baldry Esq.

River Basin. Ouse - Aire - 4.

Craven Water Board (1/4/60)

Type of Gauge. Standard.

Annual Average in. based on years obs. un-weighted. Period of average. Ref.  
 " " 55.05 " 24 " within 1933-57. " " 1916-50 " 1955  
 File No. 744053/27

Diameter ...	5"		✓	074	852							
Height ...	" 0"					1						
Altitude ...	1115'					51						
Year ...	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	Means	
January ...	5.00	5.83	2.45	4.78	2.42	5.50	5.86	4.12	3.87	6.30		
February ...	3.95	1.61	3.36	3.15	2.21	2.12	3.83	7.35	.93	3.43		
March ...	5.35	2.93	2.68	2.87	2.66	2.43	5.76	2.44	2.12	1.78		
April ...	3.23	3.70	4.13	.98	2.28	3.26	.62	1.84	4.38	3.76		
May ...	4.39	3.01	2.70	4.30	4.69	2.32	1.53	5.95	1.59	2.09		
June ...	1.79	3.80	3.27	3.12	3.42	3.37	3.27	5.57	3.85	1.51		
July ...	3.95	3.17	6.78	7.03	1.12	5.55	6.81	4.25	3.46	7.61		
August ...	4.76	7.41	7.37	8.70	1.66	12.08	7.07	4.68	1.01	5.54		
September ...	3.53	5.09	5.50	6.23	3.38	4.86	6.44	5.38	.31	3.59		
October ...	1.58	5.46	2.37	10.15	3.66	3.49	7.69	4.53	6.23	5.83		
November ...	11.22	2.50	7.29	8.50	3.22	2.34	2.91	2.01	5.66	8.92		
December ...	12.25	5.29	2.95	8.21	7.63	5.92	6.07	5.14	10.24	6.63		
TOTALS ...	61.00	49.80	50.85	68.02	38.35	53.26	57.86	53.26	43.65	56.97		
	d	d	d	d	d	d	d	d	d	d		

1954. Pump H. Bleasdale - 9' old, min completely broken, edge of cylinder compressed. With an overall height of about 10' (approximately fitting into S. side of reservoir, 120 yards W. of head of dam). Very overgrown, on all sides except S. (rising ground). Record must be kept.

1956 Accumulations  
1458 m.p.l.c.u.

Position of Station on Ordnance One-Inch map : No. of Map ..... National Grid Reference 346.468.229.

Date.	Lat. N.	Long.	Railway Station.	Distance from gauge	Direction	Parish Church.	Distance from gauge.
1951			Haworth	21900'	E 7° S	Haworth	20400' E 7½° S.

Summary of Earlier Records from 10-year Sheets :

Record D. or d		1910-19	1920-30	1931-40	1941-50	1951-60
				1933 133.35-40 D34		V Shut-49