

# National River Flow Archive

NERC Centre for Ecology & Hydrology

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## NRFA PEAK FLOW DATASET VERSION 7

Note on changes from v6

VERSION: 1.0  
STATUS: FINAL  
DATE: OCTOBER 2018  
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# DOCUMENT VERSION CONTROL

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Version	Date	Author	Description
1.0	OCTOBER 2018	KATIE MUCHAN, STEVE TURNER, CATH SEFTON, OLIVER SWAIN	

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# 1 INTRODUCTION

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Version 7 of the NRFA Peak Flow Dataset is the fourth major update released since stewardship of the national peak flows database was passed to the National River Flow Archive (NRFA).

Version 7 contains AMAX and POT data for 956 gauging stations, of which 646 are in England, 162 are in Scotland, 104 are in Wales and 44 are in Northern Ireland. A total of 559 stations are recommended for use in pooling groups ('Suitable for Pooling'), 310 stations are 'Suitable for QMED' and 87 stations are 'Suitable for Neither'.

Version 7 contains:

- Network changes (see Section 2)
- An additional water year of data (updated to 30<sup>th</sup> September 2017) for all active peak flow stations in the UK (see section 3)
- Full period of record Data Review for a subset of stations in the dataset (153 stations, see section 4)
- Modifications to existing time series (see section 5).

## 2 NETWORK CHANGES

A number of changes have been made to the gauging stations for which peak flow data are held on the NRFA since the release of version 6. Key changes are noted in this section.

### 2.1 Removal of Gauging Stations

One station has been removed from the dataset, listed in Table 1. Users should note that this station's daily flow data remains on the NRFA website.

**Table 1:** Stations removed from the dataset in version 7.

Station Number	Station Name	Measuring Authority	NRFA daily flow station	Comment
7006	Lossie at Torwinny	SEPA-N	YES	FEH Suitability Neither – with no prospect of improving site. Station was destroyed in August 2014 (ex-Hurricane Bertha).

### 2.2 Addition of Gauging Stations

18 stations have been added to the dataset in version 7, listed in Table 2.

**Table 2:** Stations added to the dataset in version 7. A \* denotes stations that are completely new to the NRFA (i.e. were not existing daily flow stations).

Station Number	Station Name	Measuring Authority	Suitability	NRFA daily flow station
6012	Enrick at White Bridge	SEPA-N	Pooling	Yes
7008	Nairn at Balnafoich	SEPA-N	QMED	Yes
7010	Muckle Burn at Brodie	SEPA-N	Pooling	Yes
7011	Black Burn at Pluscarden Abbey	SEPA-N	Pooling	Yes
15011	Lyon at Comrie Bridge	SEPA-E	Pooling	Yes
18023	Monachyle Burn at Upper Monachyle	SEPA-E	QMED	Yes
26013*	Driffield Trout Stream at Driffield	EA-Y	Pooling	Yes
27065	Holme at Queens Mill	EA-Y	QMED	Yes
27094*	Wiske at Romanby Viewly Bridge	EA-Y	QMED	Yes
27095*	Pickering Beck at Pickering	EA-Y	Pooling	No
27096*	Wharfe at Netherside Hall	EA-Y	Pooling	No
45007*	Exe at Trews Weir	EA-DC	Pooling	Yes
46013*	Bovey at Bovey Parke	EA-DC	Pooling	Yes
46014	Teign at Chudleigh	EA-DC	Pooling	Yes
64011*	Cerist at Llaw'r Cae	NRW	QMED	Yes
92002	Allt Coire nan Con at Polloch	SEPA-N	QMED	Yes
95004	Abhainn a'Chnocain at Elphin	SEPA-N	QMED	Yes
106003	Abhainn Roag at Mill Croft	SEPA-N	QMED	Yes

### 2.3 Closure of Gauging Stations

Six stations have been closed in version 7, listed in Table 3. Previously recorded flow data for these stations are still contained in the dataset and shown on the NRFA website, but there will be no further updates in future.

**Table 3:** Gauging stations closed in version 7.

Station Number	Station Name	Measuring Authority	NRFA daily flow station	Comment
39002	Thames at Days Weir	EA-T	YES	Issues with flow calculation due to weir gate settings.
39004	Wandle at Beddington Park	EA-KSL	YES	Low confidence in rating, flows not archived on NRFA until flow calculation improves.
39008	Thames at Eynsham	EA-T	YES	Operational reasons.
54006	Stour (Worcs) at Kidderminster Callows Lane	EA-WM		Operational reasons.
43004	Bourne at Laverstock	EA-WX	YES	Issues with station operation and bypassing.
72016	Wyre at Scorton Weir	EA-CL	YES	Closed as a result of damage to the weir sustained in Dec 2015 and Aug 2016 floods.

## 2.4 Changes to Station Numbers

Station numbers have changed at three stations in England, listed in Table 4. All data and metadata are now held under these new station numbers on the NRFA website and data are presented in files with these station numbers in the download for use in WINFAP.

**Table 4:** Station number changes in version 7.

Station Name	Measuring Authority	V6 Station Number	V7 Station Number	Comment
Till at Heaton Mill	EA-NE	21806	21035	Station number moved into main range.
Calder at Dewsbury	EA-Y	27835	27098	Station number moved into main range.
Hooke at Hooke	EA-WX	44801	44015	Station number moved into main range.

## 2.5 Changes to FEH Indicative Suitabilities

Indicative suitabilities have changed at three stations in England, three in Scotland, two in Northern Ireland and one in Wales, listed in Table 5.

**Table 5:** Stations with changes to indicative suitability in version 7.

NRFA Station	Station Name	Measuring Authority	V6 Suitability		V7 Suitability	
			QMED	POOLING	QMED	POOLING
17005	Avon at Polmonthill	SEPA-E	Yes	Yes	Yes	No
22003	Usway Burn at Shillmoor	EA-NE	Yes	Yes	Yes	No
27098	Calder at Dewsbury	EA-Y	Yes	No	Yes	Yes
28026	Anker at Polesworth	EA-SWWM	Yes	No	Yes	Yes
67005	Ceiriog at Brynkinalt Weir	NRW	Yes	Yes	Yes	No

NRFA Station	Station Name	Measuring Authority	V6 Suitability		V7 Suitability	
			QMED	POOLING	QMED	POOLING
77002	Esk at Canonbie	SEPA-S	Yes	Yes	Yes	No
84016	Luggie Water at Condorrat	SEPA-S	Yes	Yes	Yes	No
201010	Mourne at Drumnabuoy House	DfIR	Yes	Yes	Yes	No
202002	Faughan at Drumahoe	DfIR	Yes	Yes	Yes	No

## 2.6 Combined Peak Flow Time Series from Multiple Stations

No changes have been made to these in version 7. See the release note for v3.3.2 for the most recent changes.

## 2.7 Component Stations

No changes have been made to the stations that the NRFA treats as combined sites since v4.1.

At a number of gauging stations, flows are derived from measurements taken at more than one location (for example low flows may be measured at a weir and high flows measured at a gauged section a short distance up/downstream). There are a number of such stations around the UK that the NRFA and/or Measuring Authority treat as a combined station.

In some cases, the peak flow data may be derived from only one component of the combined dataset and as such the source for the POT and AMAX data may not be the same as that presented for the daily flow record.

## 2.8 Stations Where No POT Data are Presented

No POT data are presented on the NRFA website or given in the dataset for stations listed in Annex 1. Three stations were added to the list in version 7, marked with a \* in Annex 1.

Stations are usually listed as 'POT excluded' because the gauged catchment response does not lend itself to POT analysis. Such catchments are usually, but not exclusively, those dominated by baseflow and are therefore concentrated on the large chalk aquifers of southern and eastern England.

### 3 ANNUAL UPDATE

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As part of the new stewardship arrangements for the national peak flows dataset put in place when CEH took over the management as part of the NRFA, a programme of annual updates has been implemented. It is intended that all currently operating NRFA Peak Flow stations are updated each year with the addition of one water year of data.

#### 3.1 Extension of AMAX and POT Records

The version 7 files contain AMAX and POT time-series data updated to 30 September 2017 for all currently operational peak flow gauging stations in the UK, with the exception of six stations that were not able to be updated due to issues with the station or the hydrometric archive (Table 6).

**Table 6:** Stations not updated in version 7.

<b>Station Number</b>	<b>Station Name</b>	<b>Measuring Authority</b>
64001	Dyfi at Dyfi Bridge	NRW
69007	Wincham Brook at Lostock Gralam	EA-GMMC
69048	Tame at Uppermill	EA-GMMC
76003	Eamont at Udford	EA-CL
76007	Eden at Sheepmount	EA-CL
76806	Eden at Great Musgrave Bridge	EA-CL

## 4 PERIOD OF RECORD REVIEW

As part of the stewardship arrangements for the national peak flows dataset put in place when CEH took over the management through the NRFA, a programme of period of record reviews was implemented. It is intended that a subset of the NRFA Peak Flow stations are subject to Data Review each year and released in the next scheduled release of files for use in WINFAP.

The Data Review is extensive and covers a full period of record review of:

- Flow and stage data (including extension of recent and where applicable, early records)
- Gaugings and ratings
- Missing data periods
- FEH Suitability
- Metadata (station descriptions, station type, datum history, POT threshold, bankfull stage)
- Unrepresentative data periods
- Rejected data

This section lists the stations and time periods included in the Data Review published in version 7. Major changes to the use of the data – POT thresholds, unrepresentative periods and rejected data – are detailed in Section 5.

### 4.1 Stations Included

The period of record Data Review covered 20 stations in Scotland, 99 stations in England, 19 stations in Wales and 15 stations in Northern Ireland, listed in Table 7.

At four of the existing peak flow stations in Scotland, the period of record (which in the v6 release ended with water year 2005/2006) has been extended by 11 water years to end with water year 2016/2017. Due to individual station issues, the remaining seven existing peak flow stations in Scotland were not fully extended, the end dates are listed in Table 7.

One station in England (27022 Don at Rotherham Weir) was re-opened, the period of record is now 1960/1961-1969/1970 and 2005/2006-2015/2016.

**Table 7** Stations included in the period of record review in version 7. New stations to the dataset are shown with a \*.

Station Number	Station Name	Measuring Authority	Start date	End date
6012*	Enrick at White Bridge	SEPA-N	2007/2008	2016/2017
7008*	Nairn at Balnafoich	SEPA-N	1993/1994	2016/2017
7010*	Muckle Burn at Brodie	SEPA-N	2005/2006	2016/2017
7011*	Black Burn at Pluscarden Abbey	SEPA-N	2012/2013	2016/2017
8009	Dulnain at Balnaan Bridge	SEPA-N	1952/1953	2016/2017
12007	Dee at Mar Lodge	SEPA-E	1982/1983	2013/2014
12008	Feugh at Heugh Head	SEPA-E	1985/1986	2016/2017
15003	Tay at Caputh	SEPA-E	1951/1952	2016/2017
15011*	Lyon at Comrie Bridge	SEPA-E	1972/1973	2016/2017
15013	Almond at Almondbank	SEPA-E	1973/1974	2009/2010
16004	Earn at Forteviot Bridge	SEPA-E	1972/1973	2006/2007
18023*	Monachyle Burn at Upper Monachyle	SEPA-E	2012/2013	2016/2017
21013	Gala Water at Galashiels	SEPA-S	1963/1964	2014/2015
21035	Till at Heaton Mill	EA-NE	2001/2002	2016/2017
22003	Usway Burn at Shillmoor	EA-NE	1999/2000	2016/2017
23001	Tyne at Bywell	EA-NE	1981/1982	2016/2017
23004	South Tyne at Haydon Bridge	EA-NE	1972/1973	2016/2017



Station Number	Station Name	Measuring Authority	Start date	End date
23008	Rede at Rede Bridge	EA-NE	1981/1982	2016/2017
23011	Kielder Burn at Kielder	EA-NE	1981/1982	2016/2017
23018	Ouse Burn at Woosington	EA-NE	1983/1984	2016/2017
24004	Bedburn Beck at Bedburn	EA-NE	1983/1984	2016/2017
25019	Leven at Easby	EA-NE	1981/1982	2016/2017
26013*	Driffield Trout Stream at Driffield	EA-Y	2009/2010	2016/2017
27006	Don at Hadfields Weir	EA-Y	1967/1968	2016/2017
27008	Swale at Leckby Grange	EA-Y	1968/1969	1984/1985
27022	Don at Rotherham Weir	EA-Y	2005/2006	2016/2017
27028	Aire at Armley	EA-Y	1961/1962	2016/2017
27041	Derwent at Buttercrambe	EA-Y	1973/1974	2016/2017
27053	Nidd at Birstwith	EA-Y	1966/1967	2016/2017
27055	Rye at Broadway Foot	EA-Y	1966/1967	2016/2017
27059	Laver at Ripon	EA-Y	1977/1978	2016/2017
27065*	Holme at Queens Mill	EA-Y	1979/1980	2016/2017
27071	Swale at Crakehill	EA-Y	1979/1980	2016/2017
27080	Aire at Oulton Lemonroyd	EA-Y	1984/1985	2016/2017
27086	Skell at Alma Weir	EA-Y	1983/1984	2016/2017
27088	Calder at Mytholmroyd	EA-Y	1988/1989	2016/2017
27094*	Wiske at Romanby Viewly Bridge	EA-Y	2006/2007	2016/2017
27095*	Pickering Beck at Pickering	EA-Y	1999/2000	2016/2017
27096*	Wharfe at Netherside Hall	EA-Y	2003/2004	2016/2017
27098	Calder at Dewsbury	EA-Y	1995/1996	2016/2017
28019	Trent at Drakelow Park	EA-WM	1959/1960	2016/2017
28026	Anker at Polesworth	EA-WM	1967/1968	2016/2017
28047	Oldcotes Dyke at Blyth	EA-EM	1970/1971	2016/2017
28049	Ryton at Worksop	EA-EM	1969/1970	2016/2017
28053	Penk at Penkridge	EA-WM	1970/1971	2016/2017
28056	Rothley Brook at Rothley	EA-EM	1972/1973	2016/2017
28080	Tame at Lea Marston Lakes	EA-WM	1981/1982	2016/2017
28091	Ryton at Blyth	EA-EM	1989/1990	2016/2017
28095	Tame at Hopwas Bridge	EA-WM	1986/1987	2016/2017
29001	Waithe Beck at Brigsley	EA-LN	1979/1980	2016/2017
29002	Great Eau at Claythorpe Mill	EA-LN	1979/1980	2016/2017
30001	Witham at Claypole Mill	EA-LN	1979/1980	2016/2017
30004	Lymn at Partney Mill	EA-LN	1979/1980	2016/2017
31025	Gwash South Arm at Manton	EA-LN	1981/1982	2016/2017
32002	Willow Brook at Fotheringhay	EA-LN	1980/1981	2016/2017
33007	Nar at Marham	EA-EA	1979/1980	2016/2017
33014	Lark at Temple	EA-EA	1979/1980	2016/2017
33018	Tove at Cappenham Bridge	EA-EA	1979/1980	2016/2017
33021	Rhee at Burnt Mill	EA-EA	1985/1986	2016/2017
33024	Cam at Dernford	EA-EA	1979/1980	2016/2017
33045	Wittle at Quidenham	EA-EA	1979/1980	2016/2017
33051	Cam at Chesterford	EA-EA	1992/1993	2016/2017
33052	Swaffham Lode at Swaffham Bulbeck	EA-EA	1983/1984	2016/2017

Station Number	Station Name	Measuring Authority	Start date	End date
34003	Bure at Ingworth	EA-EA	1979/1980	2016/2017
35003	Alde at Farnham	EA-EA	1979/1980	2016/2017
35008	Gipping at Stowmarket	EA-EA	1979/1980	2016/2017
41022	Lod at Halfway Bridge	EA-SSD	1980/1981	2016/2017
42001	Wallington at North Fareham	EA-SSD	1990/1991	2016/2017
42003	Lymington at Brockenhurst	EA-SSD	1975/1976	2016/2017
42008	Cheriton Stream at Swards Bridge	EA-SSD	1979/1980	2016/2017
42010	Itchen at Highbridge & Allbrook Total	EA-SSD	1980/1981	2016/2017
43010	Allen at Loverley Farm	EA-WX	1991/1992	2016/2017
43019	Shreen Water at Colesbrook	EA-WX	1991/1992	2016/2017
44006	Sydling Water at Sydling St Nicholas	EA-WX	1991/1992	2016/2017
44013	Piddle at Little Puddle	EA-WX	1992/1993	2016/2017
44015	Hooke at Hooke	EA-WX	1991/1992	2016/2017
45007*	Exe at Trews Weir	EA-DC	1996/1997	2016/2017
45009	Exe at Pixton	EA-DC	1966/1967	2016/2017
45012	Creedy at Cowley	EA-DC	1965/1966	2016/2017
46013*	Bovey at Bovey Parke	EA-DC	2004/2005	2016/2017
46014*	Teign at Chudleigh	EA-DC	2003/2004	2016/2017
47007	Yealm at Puslinch	EA-DC	1965/1966	2016/2017
47009	Tiddy at Tideford	EA-DC	1969/1970	2016/2017
47020	Inny at Bealsmill	EA-DC	1979/1980	2016/2017
48011	Fowey at Restormel	EA-DC	1961/1962	2016/2017
49001	Camel at Denby	EA-DC	1964/1965	2016/2017
49002	Hayle at St Erth	EA-DC	1967/1968	2016/2017
49006	Camel at Camelford	EA-DC	2006/2007	2016/2017
51002	Horner Water at West Luccombe	EA-WX	1991/1992	2016/2017
52017	Congresbury Yeo at Iwood	EA-WX	1972/1973	2016/2017
53002	Semington Brook at Semington	EA-WX	1967/1968	2016/2017
53008	Avon at Great Somerford	EA-WX	1963/1964	2016/2017
53018	Avon at Bathford	EA-WX	1971/1972	2016/2017
53029	Biss at Trowbridge	EA-WX	1983/1984	2016/2017
54005	Severn at Montford	EA-WM	1971/1972	2016/2017
54016	Roden at Rodington	EA-WM	1960/1961	2016/2017
54020	Perry at Yeaton	EA-WM	1963/1964	2016/2017
54029	Teme at Knightsford Bridge	EA-WM	1970/1971	2016/2017
55021	Lugg at Butts Bridge	EA-WM	1984/1985	2016/2017
57004	Cynon at Abercynon	NRW	1981/1982	2016/2017
57005	Taff at Pontypridd	NRW	1982/1983	2016/2017
57006	Rhondda at Trehafod	NRW	1983/1984	2016/2017
57008	Rhymney at Llanederyn	NRW	1981/1982	2016/2017
57014	Rhymney at Bargoed	NRW	2000/2001	2016/2017
57017	Rhondda Fawr at Tynewydd	NRW	2000/2001	2016/2017
58007	Llynfi at Coytrahen	NRW	1970/1971	2016/2017
60001	Tywi at Ty Castell	NRW	1957/1958	2016/2017
60002	Cothi at Felin Mynachdy	NRW	1981/1982	2016/2017
60007	Tywi at Dolau Hirion	NRW	1981/1982	2016/2017

Station Number	Station Name	Measuring Authority	Start date	End date
60009	Sawdde at Felin-y-cwm	NRW	1984/1985	2016/2017
60012	Twrch at Ddol Las	NRW	1981/1982	2016/2017
64002	Dysynni at Pont y Garth	NRW	1998/1999	2013/2014
64011*	Cerist at Llaw'r Cae	NRW	1996/1997	2016/2017
65004	Gwyrfai at Bontnewydd	NRW	1981/1982	2016/2017
65005	Erch at Pencaenewydd	NRW	1981/1982	2016/2017
67005	Ceiriog at Brynkinalt Weir	NRW	1970/1971	2016/2017
67008	Alyn at Pont-y-Capel	NRW	1964/1965	2016/2017
67009	Alyn at Rhydymwyn	NRW	1979/1980	2016/2017
68001	Weaver at Ashbrook	EA-GMMC	1979/1980	2016/2017
68003	Dane at Rudheath	EA-GMMC	1977/1978	2016/2017
68005	Weaver at Audlem	EA-GMMC	1975/1976	2016/2017
68018	Dane at Congleton Park	EA-GMMC	1935/1936	2016/2017
68020	Gowy at Bridge Trafford	EA-GMMC	1979/1980	2016/2017
69005	Glaze Brook at Little Woolden Hall	EA-GMMC	1996/1997	2016/2017
69007	Mersey at Ashton Weir	EA-GMMC	1957/1958	2016/2017
69032	Alt at Kirkby	EA-CL	1978/1979	2016/2017
71011	Ribble at Arnford	EA-CL	1973/1974	2016/2017
72014	Conder at Galgate	EA-CL	1965/1966	2016/2017
73009	Sprint at Sprint Mill	EA-CL	1975/1976	2016/2017
75009	Greta at Low Briery	EA-CL	1976/1977	2015/2016
76015	Eamont at Pooley Bridge	EA-CL	1975/1976	2016/2017
77002	Esk at Canonbie	SEPA-S	1962/1963	2015/2016
81002	Cree at Newton Stewart	SEPA-S	1962/1963	2015/2016
84014	Avon Water at Fairholm	SEPA-S	1963/1964	2015/2016
90003	Nevis at Claggan	SEPA-N	1982/1983	2016/2017
92002*	Allt Coire nan Con at Polloch	SEPA-N	2001/2002	2016/2017
95004*	Abhainn a'Chnocain at Elphin	SEPA-N	2008/2009	2016/2017
106003*	Abhainn Roag at Mill Croft	SEPA-N	2008/2009	2016/2017
201005	Camowen at Camowen Terrace	DfIR	1971/1972	2016/2017
201006	Drumragh at Campsie Bridge	DfIR	1971/1972	2016/2017
201008	Derg at Castlederg	DfIR	1975/1976	2016/2017
201010	Mourne at Drumnabuoy House	DfIR	1982/1983	2016/2017
202002	Faughan at Drumahoe	DfIR	1976/1977	2016/2017
203022	Blackwater at Derrymeen Bridge	DfIR	1989/1990	2016/2017
203025	Callan at Martin's Bridge	DfIR	1971/1972	2016/2017
203028	Agivey at Whitehill	DfIR	1972/1973	2016/2017
203033	Upper Bann at Bannfield	DfIR	1974/1975	2016/2017
203042	Crumlin at Cidercourt Bridge	DfIR	1979/1980	2016/2017
204001	Bush at Seneirl Bridge	DfIR	1972/1973	2016/2017
205004	Lagan at Newforge	DfIR	1972/1973	2016/2017
205008	Lagan at Drumiller	DfIR	1973/1974	2016/2017
205011	Annacloy at Kilmore Bridge	DfIR	1979/1980	2016/2017
206001	Clanrye at Mountmill Bridge	DfIR	1971/1972	2016/2017

## 5 MODIFICATIONS TO EXISTING TIME SERIES

### 5.1 POT Independence

For stations in England operated by the Environment Agency and in Wales operated by Natural Resources Wales, the rules for independence between POT events have been clarified such that the minimum discharge in the trough between the two peaks must be less than two-thirds of the discharge of **both peaks** (FEH guidelines states the first peak, but this requires subsequent manual re-processing to remove spurious peaks). Previous Environment Agency data updates by the NRFA and under the HiFlows-UK initiative may also have utilised the 'both peaks rule'.

These rules apply at all Environment Agency and Natural Resources Wales operated stations to POT events for water years 2014/2015 onwards. Additionally, for the stations listed in Annex 2, due to changes to stage-discharge relationships or other re-processing, the new independence rules apply from the date shown to the end of the period of record. Users should therefore be aware that at these stations the independence criteria used to generate the POT series updates may therefore vary throughout the flow record.

No changes have been made to the independence extraction criteria for POT data in Scotland or Northern Ireland.

### 5.2 POT Thresholds

The POT Threshold has changed at 50 stations, listed in Table 8.

**Table 8:** Stations with changes to POT Thresholds in version 7.

NRFA Station	Station Name	Measuring Authority	V6 POT Threshold	V7 POT Threshold
27029	Calder at Elland	EA-Y	51.996	63.6
27055	Rye at Broadway Foot	EA-Y	29.241	17.8
27059	Laver at Ripon	EA-Y	14.677	12
27071	Swale at Crakehill	EA-Y	130.809	104
27080	Aire at Lemonroyd	EA-Y	106.894	96.5
27088	Calder at Mytholmroyd	EA-Y	51.85	44.6
27098	Calder at Dewsbury	EA-Y	150	124
28019	Trent at Drakelow Park	EA-WM	68.586	100.842
47020	Inny at Bealsmill	EA-DC	17.553	20.683
48011	Fowey at Restormel	EA-DC	24.8	24.866
49001	Camel at Denby	EA-DC	41.597	32
49002	Hayle at St Erth	EA-DC	2.634	2.38
49006	Camel at Camelford	EA-DC	5	5.128
51002	Horner Water at West Luccombe	EA-WX	2.553	2.9
52017	Congresbury Yeo at Iwood	EA-WX	5.467	4.9
53008	Avon at Great Somerford	EA-WX	22.327	18.2
53029	Biss at Trowbridge	EA-WX	7.325	6.2
57014	Rhymney at Bargoed	NRW	29.3	28.5
58007	Llynfi at Coytrahen	NRW	31.993	25.5
201005	Camowen at Camowen Terrace	DfIR	60.752	55.9
201007	Burn Dennet at Burndennet	DfIR	40.992	45.178
201008	Derg at Castlederg	DfIR	120.95	131.43
201009	Owenkillew at Crosh	DfIR	157.85	172.68

NRFA Station	Station Name	Measuring Authority	V6 POT Threshold	V7 POT Threshold
201010	Mourne at Drumnabuoy House	DfIR	475.911	397.9
202002	Faughan at Drumahoe	DfIR	87.776	79.443
203010	Blackwater at Maydown Bridge	DfIR	75.02	95.651
203011	Main at Dromona	DfIR	29.608	36.514
203012	Ballinderry at Ballinderry Bridge	DfIR	66.012	75.74
203018	Six-Mile Water at Antrim	DfIR	43.646	47.186
203020	Moyola at Moyola New Bridge	DfIR	71.364	73.87
203021	Kellswater at Curry's Bridge	DfIR	42.341	45.839
203022	Blackwater at Derrymeen Bridge	DfIR	24.855	39.224
203025	Callan at Martin's Bridge	DfIR	22.813	27.627
203027	Braid at Ballee	DfIR	29.653	41.011
203028	Agivey at Whitehill	DfIR	36.465	39.966
203033	Upper Bann at Bannfield	DfIR	18.601	40.216
203042	Crumlin at Cidercourt Bridge	DfIR	20.335	17.826
203043	Oonawater at Shanmoy	DfIR	14	17.149
203046	Rathmore Burn at Rathmore Bridge	DfIR	5.125	5.138
203049	Clady at Clady Bridge	DfIR	9.776	10.939
203093	Main at Shane's Viaduct	DfIR	132.382	132.95
204001	Bush at Seneirl Bridge	DfIR	45.002	43.116
205004	Lagan at Newforge	DfIR	31.77	40.996
205005	Ravernet at Ravernet	DfIR	6.491	8.102
205008	Lagan at Drumiller	DfIR	11.025	12.397
205011	Annacloy at Kilmore Bridge	DfIR	17.966	22.044
205020	Enler at Comber	DfIR	10.567	11.283
206001	Clanrye at Mountmill Bridge	DfIR	8.499	10.273
206004	Bessbrook at Carnbane	DfIR	4.823	8.09
236005	Colebrooke at Ballindarragh Bridge	DfIR	67.333	78.94

### 5.3 Minor Changes to AMAX and POT Records

Minor changes to individual events in time series were made at six stations, listed in Table 9. For more significant reprocessing of time series due to rating changes, see section 5.4.

Table 9: Stations with minor changes to time series in version 7.

Station Number	Station Name	Measuring Authority	Details of change
31025	Gwash South Arm at Manton	EA-LN	Stage now available for AMAX 1 event in 1980/1981.
55026	Wye at Ddol Farm	NRW	Change of 2004/2005 AMAX from 153.249 m <sup>3</sup> s <sup>-1</sup> to 142.739 m <sup>3</sup> s <sup>-1</sup> . Previous event was calculated through incorrect rating.

Station Number	Station Name	Measuring Authority	Details of change
56004	Usk at Llandetty	NRW	Replacement of all data in water years 1970/1971 to 1980/1981 with the data presented in v3.1.2. Data were incorrectly replaced with data from WISKI which contains a large number of gaps.
62002	Teifi at Llanfair	NRW	October 1987 event found in hard copy file from site visit during station closure period. Event is new AMAX 1 so added to the dataset.
69025	Irwell at Manchester Racecourse	EA-GMMC	Re-instatement of AMAX event in 1984/1985 which was lost between version 4.1 and version 5.
69041	Tame at Broomstairs	EA-GMMC	Change of magnitude of 03/11/1984 13:15 event. Previously had incorrect stage (>2m) and therefore incorrect flow. Correction means it is no longer the AMAX in 1984/1985, this is now 11/04/1985 13:45 (32.832 m <sup>3</sup> s <sup>-1</sup> ).

## 5.4 Changes to Stage-Discharge Ratings and Reprocessed Data

For stations included in the Period of Record Review (see Table 7), ratings have been reviewed and data re-processed as required. Stage-discharge ratings have changed at an additional 19 stations as part of the routine Annual Update of the dataset. The time period of re-processed flow data is listed in Table 10, all stations have been re-processed to the end of the record (water year 2016/2017).

**Table 10:** Stations with rating changes and re-processed data in version 7

Station Number	Station Name	Measuring Authority	Start date of re-processed data
28003	Tame at Water Orton	EA-WM	01/11/1993
28039	Rae at Calthorpe Park	EA-WM	Full period of record
28040	Trent at Stoke-On-Trent	EA-WM	01/10/2013
28041	Hamps at Waterhouses	EA-WM	01/10/2000
28052	Sow at Great Bridgford	EA-WM	01/10/2013
28066	Cole at Coleshill	EA-WM	Full period of record
33029	Stringside at Whitebridge	EA-EA	Full period of record
33039	Bedford Ouse at Roxton	EA-EA	Full period of record
45001	Exe at Thorverton	EA-DC	01/12/2003
47015	Tavy at Ludbrook	EA-DC	01/10/1994
47023	Tamar at Tamarstone Bridge	EA-DC	Full period of record
54028	Vyrnwy at Llanymynech	NRW	01/10/2013
55029	Monnow at Grosmont	NRW	01/10/2009
63003	Wyre at Llanrystud	NRW	01/10/1999
69020	Medlock at London Road	EA-GMMC	01/11/1992
71004	Calder at Whalley Weir	EA-CL	01/01/1970
71013	Darwen at Ewood	EA-CL	Full period of record
72003	Hindburn at Wray	EA-CL	01/10/1976
73014	Brathay at Jeffy Knots	EA-CL	Full period of record

## 5.5 Unrepresentative Data Periods

Some periods of data are unsuitable for use in WINFAP because they are unrepresentative of the hydrological behaviour of the catchment. These are shown on the NRFA website by pink shading on the AMAX and POT graphs. The unrepresentative periods occur in two main situations:

1. Where there is a clear change in the catchment during the period of record. The most common example is where a large reservoir has been built and therefore caused a change in the FARL (Flood Attenuation by Reservoirs and Lakes) value.
2. Where data quality has changed significantly during the period of record, the indicative suitability has been based on the better data, providing the length of record is reasonable. In these cases, the years of poorer quality have been rejected.

New unrepresentative periods have been added at 11 stations (Table 11) and removed at two stations (Table 12). The end dates for ongoing unrepresentative periods at a further nine were extended to 30 September 2017.

**Table 11:** Unrepresentative periods added in version 7.

NRFA Station	Station Name	Measuring Authority	Start Date	End Date	Comments
24003	Wear at Stanhope	EA-NE	07-FEB-2017 09.00.00	01-OCT-2017 08.45.00	Weir crest deterioration, leakage and stilling well siltation. Fish pass construction from September 2017.
24005	Browney at Burnhall	EA-NE	01-SEP-2015 09.00.00	01-MAY-2017 08.45.00	Fish pass construction.
27029	Calder at Elland	EA-Y	01-OCT-1952 09.00.00	01-OCT-1970 08.45.00	Uncertainty in pre-1971 measurements. Known changes to the weir but unknown to what extent these are reflected in the data holdings.
27055	Rye at Broadway Foot	EA-Y	12-JUL-2006 09.00.00	06-JUL-2007 08.45.00	Station re-build.
32010	Nene at Wansford	EA-LN	01-OCT-1939 00.00.00	17-JAN-1964 08.45.00	Bankfull was lower (1.5m) and was not taken into account in the rating.
42003	Lymington at Brockenhurst	EA-SSD	01-OCT-1975 09.00.00	01-OCT-1995 08.45.00	Extension of unrepresentative period back to 1975 due to record extension.
43010	Allen at Loverley Farm	EA-WX	10-MAR-1997 09.00.00	29-JUN-1997 08.45.00	Both upstream hatches partially open. Non-standard hatch position, so data are suspect.
43010	Allen at Loverley Farm	EA-WX	11-MAY-2012 09.00.00	17-MAY-2012 08.45.00	Calculated flow incorrect during this period because 1 hatch is fully open and the other hatch is partly open.

NRFA Station	Station Name	Measuring Authority	Start Date	End Date	Comments
47023	Tamar at Tamarstone Bridge	EA-DC	01-OCT-2009 09.00.00	01-OCT-2010 08.45.00	Data starts on 01/04/2010 but data incomplete for most of the period.
47023	Tamar at Tamarstone Bridge	EA-DC	01-OCT-2010 09.00.00	01-OCT-2011 08.45.00	Data without any missing periods or errors starts on 07/02/2011.
60007	Tywi at Dolau Hirion	NRW	01-OCT-1967 09.00.00	01-OCT-1972 08.45.00	Data from this period is pre-Llyn Brianne Reservoir.
67005	Ceiriog at Brynkinalt Weir	NRW	01-OCT-1952 09.00.00	01-OCT-1997 08.45.00	Data pre-1997 uncertain due to lack of gaugings. Weir rebuild in 1997.
203033	Upper Bann at Bannfield	DfIR	01-OCT-1999 09.00.00	01-OCT-2017 08.45.00	Since April 2000, all gaugings have a negative deviation (rating is over-estimating flows).

Table 12: Unrepresentative periods removed in version 7.

NRFA Station	Station Name	Measuring Authority	Start Date	End Date	Comments
32002	Willow Brook at Fotheringhay	EA-LN	31-MAR-2000 00.00.00	01-OCT-2016 08.45.00	Rating review pre- and post-2000 means data is now usable.
69005	Glaze Brook at Little Woolden Hall	EA-GMMC	01-OCT-2004 09.00.00	01-OCT-2006 08.45.00	No data in this period as a result of the Data Review.

## 5.6 Rejected Data

AMAX and POT data that are unsuitable for use in flood estimation are marked as rejected in the dataset and not included in flood estimation calculations. These are shown by red bars (for AMAX) and red crosses (for POTs) on the AMAX and POT graphs respectively. All data falling within unrepresentative periods (see section 5.5 Unrepresentative Data Periods) are rejected.

In addition, where periods of missing data are likely to have included the true AMAX, any AMAX recorded during that water year is rejected. Where the true AMAX is recorded, the event is not rejected.

Rejected AMAX values have been added at 20 stations (Table 13) and removed at nine stations (Table 14).

Table 13: AMAX data now classed as rejected in version 7.

NRFA Station	Station Name	Measuring Authority	Rejected water year(s)
7011	Black Burn at Pluscarden Abbey	SEPA-N	2011
26013	Driffield Trout Stream at Driffield	EA-Y	2009
27055	Rye at Broadway Foot	EA-Y	2005
27095	Pickering Beck at Pickering	EA-Y	1999
27098	Calder at Dewsbury	EA-Y	1995
33045	Wittle at Quidenham	EA-EA	2014
35008	Gipping at Stowmarket	EA-EA	1967, 1987



NRFA Station	Station Name	Measuring Authority	Rejected water year(s)
42008	Cheriton Stream at Swards Bridge	EA-SSD	1980
43004	Bourne at Laverstock	EA-WX	2016
46014	Teign at Chudleigh	EA-DC	2003
52017	Congresbury Yeo at Iwood	EA-WX	1979
54016	Roden at Rodington	EA-WM	1976
57006	Rhondda at Trehafod	NRW	1981
57014	Rhymney at Bargoed	NRW	2000
57017	Rhondda Fawr at Tynewydd	NRW	2000
60012	Twrch at Ddol Las	NRW	1981
65004	Gwyrfai at Bontnewydd	NRW	2003, 2009
75005	Derwent at Portinscale	EA-CL	2016
203033	Upper Bann at Bannfield	DfIR	2008
203042	Crumlin at Cidercourt Bridge	DfIR	1979

Table 14: AMAX data no longer classed as rejected in version 7.

NRFA Station	Station Name	Measuring Authority	Rejected water year(s)
27028	Aire at Armley	EA-Y	1995
28047	Oldcotes Dyke at Blyth	EA-EM	1970
28053	Penk at Penkridge	EA-WM	1983
28056	Rothley Brook at Rothley	EA-EM	1972
28091	Ryton at Blyth	EA-EM	1988
33014	Lark at Temple	EA-EA	1990
54005	Severn at Montford	EA-WM	1976
60001	Tywi at Ty Castell	NRW	1983
75001	St Johns Beck at Thirlmere Reservoir	EA-CL	1982, 1984, 1992, 1996

## 5.7 Datum Changes

A short table is provided on the NRFA website for each station, which details the datum history over the period of record, with dates of applicability. The datum history has been updated at 93 stations listed in Annex 3.

## ANNEX 1 POT EXCLUDED STATIONS

NRFA Station	Station Name	Measuring Authority
26003	Foston Beck at Foston Mill	EA-NE
26009	West Beck at Snakeholme Lock	EA-NE
26010	Driffield Canal at Snakeholme Lock	EA-NE
26013*	Driffield Trout Stream at Driffield	EA-Y
26802	Gypsy Race at Kirby Grindalythe	EA-Y
26803	Water Forlornes at Driffield	EA-Y
27038	Costa Beck at Gatehouses	EA-Y
27073	Brompton Beck at Snainton Ings	EA-Y
29005	Rase at Bishopbridge	EA-LN
30005	Witham at Saltersford Total	EA-LN
30006	Slea at Leasingham Mill	EA-LN
30013	Heighington Beck at Heighington	EA-LN
30015	Cringle Brook at Stoke Rochford	EA-LN
31004	Welland at Tallington Total	EA-LN
33005	Bedford Ouse at Thornborough Mill	EA-EA
33007	Nar at Marham	EA-EA
33012	Kym at Meagre Farm	EA-EA
33032	Heacham at Heacham	EA-EA
33049	Stanford Water at Buckenham Tofts	EA-EA
33052	Swaffham Lode at Swaffham Bulbeck	EA-EA
33054	Babingley at Castle Rising	EA-EA
34007	Dove at Oakley Park	EA-EA
34018	Stiffkey at Warham	EA-EA
35003	Alde at Farnham	EA-EA
35004	Ore at Beversham Bridge	EA-EA
35010*	Gipping at Bramford	EA-EA
36002	Glem at Glemsford	EA-EA
36003	Box at Polstead	EA-EA
36005	Brett at Hadleigh	EA-EA
36006	Stour at Langham	EA-EA
36007	Belchamp Brook at Bardfield Bridge	EA-EA
36008	Stour at Westmill	EA-EA
36009	Brett at Cockfield	EA-EA
36010	Bumpstead Brook at Broad Green	EA-EA
36011	Stour Brook at Sturmer	EA-EA
36012*	Stour at Kedington	EA-EA
36015	Stour at Lamarsh	EA-EA
37003	Ter at Crabbs Bridge	EA-EA
37005	Colne at Lexden	EA-EA
37009	Brain at Guithavon Valley	EA-EA
37010	Blackwater at Appleford Bridge	EA-EA
37012	Colne at Poolstreet	EA-EA
37013	Sandon Brook at Sandon Bridge	EA-EA
37016	Pant at Copford Hall	EA-EA
37017	Blackwater at Stisted	EA-EA

<b>NRFA Station</b>	<b>Station Name</b>	<b>Measuring Authority</b>
38011	Mimram at Fulling Mill	EA-HNL
39010	Colne at Denham	EA-HNL
39021	Cherwell at Enslow Mill	EA-T
39033	Winterbourne Stream at Bagnor	EA-T
39034	Evenlode at Cassington Mill	EA-T
39037	Kennet at Marlborough	EA-T
39089	Gade at Bury Mill	EA-HNL
39095	Quaggy at Manor House Gardens	EA-KSL
41015	Ems at Westbourne	EA-SSD
41023	Lavant at Graylingwell	EA-SSD
42005	Wallop Brook at Broughton	EA-SSD
42006	Meon at Misingford	EA-SSD
42007	Alre at Drove Lane Alresford	EA-SSD
42008	Cheriton Stream at Swards Bridge	EA-SSD
42009	Candover Stream at Borough Bridge	EA-SSD
42010	Itchen at Highbridge & Allbrook Total	EA-SSD
42012	Anton at Fullerton	EA-SSD
42017	Hermitage Stream at Havant	EA-SSD
43003	Avon at East Mills Total	EA-WX
43004	Bourne at Laverstock	EA-WX
43005	Avon at Amesbury	EA-WX
43008	Wylfe at South Newton	EA-WX
43010	Allen at Loverley Farm	EA-WX
43012	Wylfe at Norton Bavant	EA-WX
43018	Allen at Walford Mill	EA-WX
44002	Piddle at Baggs Mill	EA-WX
44004	Frome at Dorchester Total	EA-WX
44006	Sydling Water at Sydling St Nicholas	EA-WX
44008	South Winterbourne at Winterbourne Steepleton	EA-WX
44009	Wey at Broadwey	EA-WX
44013	Piddle at Little Puddle	EA-WX
44014	Piddle at Briantspuddle	EA-WX
54027	Frome at Ebley Mill	EA-WM
55035	Iago at Iago flume	CEH
67020	Dee at Chester Weir	NRW
68007	Wincham Brook at Lostock Gram	EA-GMMC
69002	Irwell at Adelphi Weir	EA-GMMC
71003	Croasdale Beck at Croasdale Flume	EA-CL
85001	Leven at Linnbrane	SEPA-W
205034	Woodburn at Control	Dfir
206006	Annalong at Recorder	BCDWC

## ANNEX 2 POT INDEPENDENCE CHANGES

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
21035	Till at Heaton Mill	EA-NE	Full period of record	V7
22003	Usway Burn at Shillmoor	EA-NE	Full period of record	V7
23001	Tyne at Bywell	EA-NE	01/12/1992	V6
23001	Tyne at Bywell	EA-NE	04/01/1982	V7
23004	South Tyne at Haydon Bridge	EA-NE	Full period of record	V7
23008	Rede at Rede Bridge	EA-NE	04/01/1982	V7
23011	Kielder Burn at Kielder	EA-NE	23/11/1981	V7
23018	Ouse Burn at Woolsington	EA-NE	24/12/1983	V7
24004	Bedburn Beck at Bedburn	EA-NE	04/02/1982	V7
25004	Skerne at South Park	EA-NE	12/10/2012	V6
25006	Greta at Rutherford Bridge	EA-NE	01/10/2008	V5
25019	Leven at Easby	EA-NE	04/01/1982	V7
26802	Gypsy Race at Kirby Grindalythe	EA-Y	01/10/2013	V7
27003	Aire at Beal Weir	EA-Y	14/09/1993	V5
27006	Don at Hadfields Weir	EA-Y	15/07/1968	V7
27008	Swale at Leckby Grange	EA-Y	03/11/1968	V7
27022	Don at Rotherham Weir	EA-Y	09/11/2005	V7
27023	Dearne at Barnsley Weir	EA-Y	24/03/1965	V5
27028	Aire at Armley	EA-Y	28/12/1978	V6
27028	Aire at Armley	EA-Y	Full period of record	V7
27030	Dearne at Adwick	EA-Y	11/02/1977	V6
27035	Aire at Kildwick Bridge	EA-Y	09/07/1971	V5
27041	Derwent at Buttercrambe	EA-Y	Full period of record	V7
27053	Nidd at Birstwith	EA-Y	Full period of record	V7
27055	Rye at Broadway Foot	EA-Y	Full period of record	V7
27059	Laver at Ripon	EA-Y	Full period of record	V7
27065	Holme at Queens Mill	EA-Y	Full period of record	V7
27071	Swale at Crakehill	EA-Y	Full period of record	V7
27080	Aire at Lemonroyd	EA-Y	20/12/1996	V6
27080	Aire at Oulton Lemonroyd	EA-Y	Full period of record	V7
27083	Foss at Huntington	EA-Y	01/10/2013	V7
27086	Skell at Alma Weir	EA-Y	22/11/2012	V5
27086	Skell at Alma Weir	EA-Y	Full period of record	V6
27086	Skell at Alma Weir	EA-Y	Full period of record	V7
27088	Calder at Mytholmroyd	EA-Y	Full period of record	V6
27088	Calder at Mytholmroyd	EA-Y	Full period of record	V7
27094	Wiske at Romanby Viewly Bridge	EA-Y	Full period of record	V7
27095	Pickering Beck at Pickering	EA-Y	Full period of record	V7
27096	Wharfe at Netherside Hall	EA-Y	Full period of record	V7
27098	Calder at Dewsbury	EA-Y	Full period of record	V7
28003	Tame at Water Orton	EA-WM	01/11/1993	V7
28008	Dove at Rocester Weir	EA-WM	25/11/2011	V5
28012	Trent at Yoxall	EA-WM	01/10/2010	V5
28018	Dove at Marston on Dove	EA-WM	07/11/2000	V5
28019	Trent at Drakelow Park	EA-WM	27/08/1996	V7

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
28024	Wreake at Syston Mill	EA-WM	30/11/2009	V5
28026	Anker at Polesworth	EA-WM	Full period of record	V7
28033	Dove at Hollinsclough	EA-WM	05/12/1972	V5
28039	Rae at Calthorpe Park	EA-WM	Period of record	V7
28040	Trent at Stoke-On-Trent	EA-WM	01/10/2013	V7
28041	Hamps at Waterhouses	EA-WM	01/10/2000	V7
28047	Oldcotes Dyke at Blyth	EA-EM	Full period of record	V7
28049	Ryton at Worksop	EA-EM	Full period of record	V7
28052	Sow at Great Bridgford	EA-WM	01/10/2013	V7
28053	Penk at Penkridge	EA-WM	01/01/2012	V5
28053	Penk at Penkridge	EA-WM	Full period of record	V7
28056	Rothley Brook at Rothley	EA-EM	Full period of record	V7
28061	Churnet at Basford Bridge	EA-WM	06/11/2000	V5
28061	Churnet at Basford Bridge	EA-WM	Full period of record	V6
28066	Cole at Coleshill	EA-WM	Period of record	V7
28080	Tame at Lea Marston Lakes	EA-WM	Full period of record	V7
28081	Tame at Bescot	EA-WM	Full period of record	V6
28083	Trent at Darlaston	EA-WM	Full period of record	V6
28091	Ryton at Blyth	EA-EM	Full period of record	V7
28095	Tame at Hopwas Bridge	EA-WM	01/01/1998	V5
28095	Tame at Hopwas Bridge	EA-WM	Full period of record	V7
28115	Maun at Mansfield the Dykes	EA-EM	Full period of record	V7
29001	Waithe Beck at Brigsley	EA-LN	27/08/1986	V7
29002	Great Eau at Claythorpe Mill	EA-LN	14/12/1979	V7
30001	Witham at Claypole Mill	EA-LN	11/12/1979	V7
30004	Lymn at Partney Mill	EA-LN	15/12/1979	V7
30014	Pointon Lode at Pointon	EA-LN	21/11/2012	V6
31025	Gwash South Arm at Manton	EA-LN	Full period of record	V7
32002	Willow Brook at Fotheringhay	EA-LN	30/12/1981	V7
32010	Nene at Wansford	EA-LN	01/01/1998	V7
33012	Kym at Meagre Farm	EA-EA	01/10/2013	V7
33014	Lark at Temple	EA-EA	09/02/1980	V7
33018	Tove at Cappenham Bridge	EA-EA	28/12/1979	V7
33021	Rhee at Burnt Mill	EA-EA	11/12/1979	V7
33024	Cam at Dernford	EA-EA	22/01/1985	V7
33029	Stringside at Whitebridge	EA-EA	26/11/2012	V6
33029	Stringside at Whitebridge	EA-EA	28/12/1979	V7
33030	Clipstone Brook at Clipstone	EA-EA	01/10/2012	V5
33039	Bedford Ouse at Roxton	EA-EA	17/12/1979	V7
33044	Thet at Bridgham	EA-EA	01/10/2013	V7
33045	Wittle at Quidenham	EA-EA	14/12/1979	V7
33051	Cam at Chesterford	EA-EA	29/12/1979	V7
34003	Bure at Ingworth	EA-EA	03/02/1971	V7
35008	Gipping at Stowmarket	EA-EA	25/05/1981	V7
37014	Roding at High Ongar	EA-HNL	21/10/2012	V6
39001	Thames at Kingston	EA-T	05/11/2012	V6

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
39007	Blackwater at Swallowfield	EA-T	01/10/2013	V7
39035	Churn at Cerney Wick	EA-T	01/01/2013	V5
40007	Medway at Chafford / Colliersland Bridge	EA-KSL	01/10/2013	V7
40010	Eden at Penshurst / Vexour Bridge	EA-KSL	01/10/2013	V7
40011	Great Stour at Horton	EA-KSL	01/10/2013	V7
40012	Darent at Hawley	EA-KSL	26/11/1992	V6
40016	Cray at Crayford	EA-KSL	01/10/2013	V7
40018	Darent at Lullingstone	EA-KSL	30/03/2010	V6
41022	Lod at Halfway Bridge	EA-SSD	07/03/1991	V7
42001	Wallington at North Fareham	EA-SSD	14/10/1982	V7
42003	Lymington at Brockenhurst	EA-SSD	Full period of record	V7
43019	Shreen Water at Colesbrook	EA-WX	Full period of record	V7
43806	Wylde at Brixton Deverill	EA-WX	Full period of record	V5
44011	Asker at East Bridge Bridport	EA-WX	01/10/2013	V7
44015	Hooke at Hooke	EA-WX	Full period of record	V7
45001	Exe at Thorverton	EA-DC	01/12/2003	V7
45003	Culm at Woodmill	EA-DC	Full period of record	V6
45004	Axe at Whitford	EA-DC	Full period of record	V5
45007	Exe at Trews Weir	EA-DC	Full period of record	V7
45009	Exe at Pixton	EA-DC	Full period of record	V7
45012	Creedy at Cowley	EA-DC	Full period of record	V7
46007	West Dart at Dunnabridge	EA-DC	Full period of record	V6
46013	Bovey at Bovey Parke	EA-DC	Full period of record	V7
46014	Teign at Chudleigh	EA-DC	Full period of record	V7
47007	Yealm at Puslinch	EA-DC	21/01/1970	V7
47009	Tiddy at Tideford	EA-DC	25/09/1976	V7
47015	Tavy at Ludbrook	EA-DC	01/10/1994	V7
47020	Inny at Bealsmill	EA-DC	Full period of record	V7
47023	Tamar at Tamarstone Bridge	EA-DC	Full period of record	V7
47024	Tavy at Tavistock Abbey Bridge	EA-DC	Full period of record	V5
48006	Cober at Helston Country Bridge	EA-DC	01/10/2012	V5
48011	Fowey at Restormel	EA-DC	Full period of record	V7
49001	Camel at Denby	EA-DC	Full period of record	V7
49002	Hayle at St Erth	EA-DC	Full period of record	V7
49006	Camel at Camelford	EA-DC	Full period of record	V7
50005	West Okement at Vellake	EA-DC	01/10/2012	V5
50010	Torridge at Rockhay Bridge	EA-DC	01/10/2012	V5
51002	Horner Water at West Luccombe	EA-WX	Full period of record	V7
51003	Washford at Beggearn Huish	EA-WX	01/11/1982	V6
52004	Isle at Ashford Mill	EA-WX	07/03/1972	V5
52017	Congresbury Yeo at Iwood	EA-WX	Full period of record	V7
53002	Semington Brook at Semington	EA-WX	Full period of record	V7
53008	Avon at Great Somerford	EA-WX	Full period of record	V7
53013	Marden at Stanley	EA-WX	Full period of record	V6
53018	Avon at Bathford	EA-WX	Full period of record	V7
53023	Sherston Avon at Fosseyway	EA-WX	Full period of record	V6

Station Number	Station Name	Measuring Authority	Start date of POT independence change	Released in
53029	Biss at Trowbridge	EA-WX	Full period of record	V7
54005	Severn at Montford	EA-WM	24/01/1971	V7
54016	Roden at Rodington	EA-WM	Full period of record	V7
54020	Perry at Yeaton	EA-WM	Full period of record	V7
54028	Vyrnwy at Llanymynech	NRW	13/12/2011	V6
54029	Teme at Knightsford Bridge	EA-WM	Full period of record	V7
54080	Severn at Dolwen	NRW	22/11/2011	V6
55021	Lugg at Butts Bridge	EA-WM	24/11/1984	V7
55029	Monnow at Grosmont	NRW	29/04/2012	V6
55029	Monnow at Grosmont	NRW	01/10/2009	V7
57004	Cynon at Abercynon	NRW	13/02/1982	V7
57005	Taff at Pontypridd	NRW	12/11/1992	V7
57006	Rhondda at Trehafod	NRW	15/10/1983	V7
57008	Rhymney at Llanederyn	NRW	10/03/1982	V7
57014	Rhymney at Bargoed	NRW	Full period of record	V7
57017	Rhondda Fawr at Tynewydd	NRW	Full period of record	V7
58007	Llynfi at Coytrahen	NRW	06/03/1982	V7
60001	Twyi at Ty Castell	NRW	03/01/1982	V6
60001	Tywi at Ty Castell	NRW	13/02/1982	V7
60002	Cothi at Felin Mynachdy	NRW	12/02/1982	V7
60007	Tywi at Dolau Hirion	NRW	12/02/1982	V7
60009	Sawdde at Felin-y-cwm	NRW	29/12/2012	V6
60009	Sawdde at Felin-y-cwm	NRW	23/08/1985	V7
60012	Twrch at Ddol Las	NRW	12/02/1982	V7
61003	Gwaun at Cilrhedyn Bridge	NRW	24/10/2011	V6
63003	Wyre at Llanrystud	NRW	01/10/1999	V7
64001	Dyfi at Dyfi Bridge	NRW	18/11/2009	V6
64002	Dysynni at Pont-y-Garth	NRW	03/03/1998	V6
64002	Dysynni at Pont y Garth	NRW	11/09/1998	V7
64011	Cerist at Llaw'r Cae	NRW	Full period of record	V7
65004	Gwyrfaï at Bontnewydd	NRW	20/07/2010	V6
65004	Gwyrfaï at Bontnewydd	NRW	04/01/1982	V7
65005	Erch at Pencaenewydd	NRW	10/03/1982	V7
65006	Seiont at Peblig Mill	NRW	01/10/2013	V7
67005	Ceiriog at Brynkinalt Weir	NRW	24/01/1971	V7
67008	Alyn at Pont-y-Capel	NRW	22/01/1970	V7
67009	Alyn at Rhydymwyn	NRW	05/02/1980	V7
68001	Weaver at Ashbrook	EA-GMMC	05/12/1979	V7
68003	Dane at Rudheath	EA-GMMC	03/02/1977	V6
68003	Dane at Rudheath	EA-GMMC	02/01/1976	V7
68005	Weaver at Audlem	EA-GMMC	22/03/1976	V7
68018	Dane at Congleton Park	EA-GMMC	01/10/2012	V6
68018	Dane at Congleton Park	EA-GMMC	05/12/1979	V7
68020	Gowy at Bridge Trafford	EA-GMMC	Full period of record	V7
68044	Dane at Hug Bridge	EA-GMMC	18/01/2007	V6
69005	Glaze Brook at Little Woolden Hall	EA-GMMC	Full period of record	V7

<b>Station Number</b>	<b>Station Name</b>	<b>Measuring Authority</b>	<b>Start date of POT independence change</b>	<b>Released in</b>
69007	Mersey at Ashton Weir	EA-GMMC	25/09/1976	V7
69017	Goyt at Marple Bridge	EA-GMMC	01/01/1976	V6
69020	Medlock at London Road	EA-GMMC	01/11/1992	V7
69022	Irwell at Irwell Vale	EA-GMMC	Full period of record	V6
69024	Croal at Farnworth Weir	EA-GMMC	15/03/1978	V6
69028	Mersey at Brinksway	EA-GMMC	01/01/1974	V7
69032	Alt at Kirkby	EA-CL	28/12/1978	V7
69041	Tame at Broomstairs	EA-GMMC	03/09/1974	V6
69047	Roch at Littleborough	EA-GMMC	Full period of record	V6
70004	Yarrow at Croston Mill	EA-CL	01/10/2013	V5
70004	Yarrow at Croston Mill	EA-CL	Full period of record	V6
71004	Calder at Whalley Weir	EA-CL	01/01/1976	V7
71011	Ribble at Arnford	EA-CL	Full period of record	V7
71013	Darwen at Ewood	EA-CL	Full period of record	V7
72003	Hindburn at Wray	EA-CL	23/11/1977	V6
72003	Hindburn at Wray	EA-CL	01/10/1976	V7
72014	Conder at Galgate	EA-CL	06/04/1978	V6
72014	Conder at Galgate	EA-CL	29/11/1976	V7
73009	Sprint at Sprint Mill	EA-CL	02/01/1976	V7
73014	Brathay at Jeffy Knots	EA-CL	Full period of record	V7
73015	Keer at High Keer Weir	EA-CL	01/01/1991	V6
75005	Derwent at Portinscale	EA-CL	01/10/2011	V5
75009	Greta at Low Briery	EA-CL	02/01/1976	V7
76015	Eamont at Pooley Bridge	EA-CL	Full period of record	V7



## ANNEX 3 STATIONS WITH CHANGES TO DATUM HISTORY

NRFA Station	Station Name	Measuring Authority
6012	Enrick at White Bridge	SEPA-N
7008	Nairn at Balnafoich	SEPA-N
7010	Muckle Burn at Brodie	SEPA-N
7011	Black Burn at Pluscarden Abbey	SEPA-N
8009	Dulnain at Balnaan Bridge	SEPA-N
15011	Lyon at Comrie Bridge	SEPA-E
18023	Monachyle Burn at Upper Monachyle	CEHW
21035	Till at Heaton Mill	EA-NE
22003	Usway Burn at Shillmoor	EA-NE
23001	Tyne at Bywell	EA-NE
23008	Rede at Rede Bridge	EA-NE
23011	Kielder Burn at Kielder	EA-NE
23018	Ouse Burn at Woolsington	EA-NE
24004	Bedburn Beck at Bedburn	EA-NE
25019	Leven at Easby	EA-NE
26013	Driffield Trout Stream at Driffield	EA-Y
27022	Don at Rotherham Weir	EA-Y
27028	Aire at Armley	EA-Y
27029	Calder at Elland	EA-Y
27055	Rye at Broadway Foot	EA-Y
27065	Holme at Queens Mill	EA-Y
27080	Aire at Lemonroyd	EA-Y
27086	Skell at Alma Weir	EA-Y
27088	Calder at Mytholmroyd	EA-Y
27094	Wiske at Romanby Viewly Bridge	EA-Y
27095	Pickering Beck at Pickering	EA-Y
27096	Wharfe at Netherside Hall	EA-Y
27098	Calder at Dewsbury	EA-Y
28003	Tame at Water Orton	EA-WM
28007	Trent at Shardlow	EA-EM
28022	Trent at North Muskham	EA-EM
28024	Wreake at Syston Mill	EA-EM
28027	Erewash at Sandiacre	EA-EM
28041	Hamps at Waterhouses	EA-WM
28043	Derwent at Chatsworth	EA-EM
28047	Oldcotes Dyke at Blyth	EA-EM
28053	Penk at Penkrigde	EA-WM
28060	Dover Beck at Lowdham	EA-EM
28082	Soar at Littlethorpe	EA-EM
28085	Derwent at St Mary's Bridge	EA-EM
28086	Sence at South Wigston	EA-EM

<b>NRFA Station</b>	<b>Station Name</b>	<b>Measuring Authority</b>
28091	Ryton at Blyth	EA-EM
33018	Tove at Cappenham Bridge	EA-EA
33019	Thet at Melford Bridge	EA-EA
33021	Rhee at Burnt Mill	EA-EA
33027	Rhee at Wimpole	EA-EA
33028	Flit at Shefford	EA-EA
33030	Clipstone Brook at Clipstone	EA-EA
33031	Broughton Brook at Broughton	EA-EA
33032	Heacham at Heacham	EA-EA
33033	Hiz at Arleseey	EA-EA
33050	Snail at Fordham	EA-EA
33051	Cam at Chesterford	EA-EA
43010	Allen at Loverley Farm	EA-WX
43019	Shreen Water at Colesbrook	EA-WX
44006	Sydling Water at Sydling St Nicholas	EA-WX
45007	Exe at Trews Weir	EA-DC
46013	Bovey at Bovey Parke	EA-DC
46014	Teign at Chudleigh	EA-DC
47009	Tiddy at Tideford	EA-DC
47020	Inny at Bealsmill	EA-DC
48011	Fowey at Restormel	EA-DC
49001	Camel at Denby	EA-DC
49002	Hayle at St Erth	EA-DC
51002	Horner Water at West Luccombe	EA-WX
52017	Congresbury Yeo at Iwood	EA-WX
53002	Semington Brook at Semington	EA-WX
53004	Chew at Compton Dando	EA-WX
53018	Avon at Bathford	EA-WX
54005	Severn at Montford	EA-WM
54114	Avon at Warwick	EA-WM
60001	Tywi at Ty Castell	NRW
68001	Weaver at Ashbrook	EA-GMMC
68003	Dane at Rudheath	EA-GMMC
68018	Dane at Congleton Park	EA-GMMC
68020	Gowy at Bridge Trafford	EA-GMMC
69005	Glaze Brook at Little Woolden Hall	EA-GMMC
69012	Bollin at Wilmslow	EA-GMMC
69017	Goyt at Marple Bridge	EA-GMMC
69024	Croal at Farnworth Weir	EA-GMMC
69025	Irwell at Manchester Racecourse	EA-GMMC
69030	Sankey Brook at Causey Bridges	EA-GMMC
69041	Tame at Broomstairs	EA-GMMC
72014	Conder at Galgate	EA-CL

<b>NRFA Station</b>	<b>Station Name</b>	<b>Measuring Authority</b>
<b>81002</b>	Cree at Newton Stewart	SEPA-S
<b>85003</b>	Falloch at Glen Falloch	SEPA-S
<b>90003</b>	Nevis at Claggan	SEPA-N
<b>92002</b>	Allt Coire nan Con at Polloch	SEPA-N
<b>95004</b>	Abhainn a'Chnocain at Elphin	SEPA-N
<b>106003</b>	Abhainn Roag at Mill Croft	SEPA-N
<b>201008</b>	Derg at Castleberg	DfIR
<b>202002</b>	Faughan at Drumahoe	DfIR
<b>206006</b>	Annalong at Recorder	BCDWC