

## Chemical Cocktail regional breakdown

### **Key regional differences:**

- The Southern regions - London, the South West and the South East - have the highest proportions of rivers and lakes found to contain toxic chemical cocktails (91%, 96% and 96% respectively), but London and the South East also have among the lowest proportion of groundwater sites found to contain the chemical mixtures (37% and 34% respectively) . Despite containing rivers that had some of the highest number of individual chemicals identified (The Stour, Thames and Medway) rivers, lakes and groundwaters in London and the South East had fewer of these chemical cocktails present than the average. 37% of river and groundwater sites in London, and 34% in the South East, where chemical cocktails were identified, had 3 or more of the 5 chemical cocktails present, compared to 67% in Yorks and Humber
- The South West ranks poorly in all measures. It has the highest proportion of total sites and river sites found to have one or more of these chemical cocktails present, and amongst the highest percentage of groundwater sites with these chemicals present. It also has a high proportion of river, lake and ground sites that contain 3 or more of these chemical combinations and up to 91 chemicals have been found in individual rivers.
- The North East and North West also fare particularly poorly in these findings, with 80% and 70% of river, lake and groundwater sites respectively being identified as having 1 or more of these chemical compounds present, with similar findings in both groundwater and rivers. The River Mersey above Howley Weir was found to have the highest number of individual chemicals present of any river in England.
- The West Midlands, while slightly lower in overall percentage of sites affected, has a very high proportion of rivers and lakes where these chemicals are found - 93% - compared to nearly half - 48% - of groundwaters being affected. The River Avon at Lower Eavesham had the highest number of individual chemical compounds in the region, with 100 chemicals identified (the second highest nationally).
- The East of England and Yorks and Humberside had a smaller proportion of sites where these chemical cocktails were identified, but one or more of these toxic mixtures was still found in almost 1 in 6 (58% and 59% respectively) of river, lake and groundwater sites tested for chemicals and they had up to 96 and 78 chemicals respectively identified in individual rivers.

***Bullet-pointed breakdowns for each region are available beneath the following table.***

Region	No. (&%) of river, lake & groundwater sites with chemical cocktails present	No. (&%) of river & lake sites with chemical cocktails present	No. (&%) of groundwater sites with chemical cocktails present	Number of sites (total) with 3+ chemical cocktails detected	Rivers with the most chemical cocktails identified.	Max no. of chemicals detected in any one river	Rivers with the highest number of individual chemicals identified.
<b>West Mids</b>	124 river, lake and groundwater sites (out of 195 sites - 64%)	64 river and lake sites (out of 69 sites – 93%)	60 groundwater sites (out of 126 sites – 48%)	69 sites (out of 124– 56%)	Rivers where 3+ toxic chemical cocktails were identified include: the Teme, Trent, Tame, Stour, Mill Brook, Lugg and Avon	100	The Avon, Trent, Stour, Mill brook, Teme and Lugg
<b>East Mids</b>	217 out of 360 sites tested by the Environment Agency for chemicals (60%)	103 (out of 163 sites – 75%)	114 (out of 197 sites – 58%)	124(out of 217 sites – 58%)	Rivers where 3+ toxic chemical cocktails were identified include: the Witham, Soar, Derwent and Dove	77	Sincil dyke, the River Derwent, River Dove, River Soar, and the River Witham
<b>East of Eng</b>	171 river, lake and groundwater sites (out of 294 - 58%)	100 river and lake sites (out of 163 sites – 61%)	71 groundwater sites (out of 131 sites – 54%)	88 sites (out of 171– 51%)	Rivers where 3+ toxic chemical cocktails were identified include: the Ouse, Nene, Lea, Waveney and Stiffkey	96	The Colne, Yare, Lee, Stiffkey, Ouse, Nene, Wensum
<b>North East</b>	83 river, lake and groundwater sites (out of 104 - 80%)	32 river and lake sites (out of 40 sites – 80%)	51 groundwater sites (out of 64 sites – 80%)	54 sites (out of 83– 65%)	Rivers where 3+ toxic chemical cocktails were identified include: the Blyth, Tyne and Wansbeck	<b>59</b>	The Tyne and Blyth
<b>North West</b>	239 river, lake and groundwater sites (out of 340 - 70%)	106 river and lake sites (out of 152 sites – 70%)	133 groundwater sites (out of 188 sites – 71%)	154 sites (out of 239– 64%)	Rivers where 3+ toxic chemical cocktails were identified include: the Weaver, Mersey, Irwell, Wyre, Lune, Leven, Wampool, Ribble, Derwent and Eden.	101	The Mersey, Irwell, Ribble, Weaver, Wampool, Douglas and Wyre

<b>Yorks and Humber</b>	165 river, lake and groundwater sites (out of 278 - 59%)	66 river and lake sites (out of 94 sites – 70%) and	99 groundwater sites (out of 184 sites – 54%)	110 sites (out of 165– 67%)	Rivers where 3+ toxic chemical cocktails were identified include: the Derwent, Ancholme, Ouse, Aire, Tees and Wharfe	78	The Derwent, Aire, Tees, Ouse, Ancholme, Wharfe, Colne, Rother, Don and Calder
<b>London</b>	29 river, lake and groundwater sites (out of 52 - 56%)	21 river and lake sites (out of 23 sites – 91%) and	8 groundwater sites (out of 29 sites – 28%)	11 sites (out of 29 – 37%)	Rivers where 3+ toxic chemical cocktails were identified include: the Cray, Roding, Thames and Wandle	95	The Lee, Salmon Brook, Roding, THames and Wandle
<b>South East</b>	322 river, lake and groundwater sites (out of 430 - 75%)	204 river and lake sites (out of 213 sites – 96%)	118 groundwater sites (out of 217 sites – 54%)	110 sites (out of 322– 34%)	Rivers where 3+ toxic chemical cocktails were identified include: the Colne, Thame, Loddon, Medway, Kennet, Rother, Arun, Mole and Test	98	The Stour, Medway, Loddon, Ouse, Colne, Rother, Mole, Arun, Wey and Test
<b>South West</b>	260 river, lake and groundwater sites (out of 322 - 81%)	110 river and lake sites (out of 115 sites – 96%)	150 groundwater sites (out of 207 sites – 72%)	158 sites (out of 260– 60%)	Rivers where 3+ toxic chemical cocktails were identified include: the Chelt, Teign, Cober, Stour, Torridge, Coln, Exe and Avon	91	The Avon, Thames, Exe, Frome, Cober, Chelt, Teign and Cripps

#### River sites with the highest number of chemicals identified

Site ID	Number of compounds detected	Site name	Local Authority	Region
88002634	101	RIVER MERSEY ABOVE HOWLEY WEIR	Warrington	North West (England)

4778460	100	RIVER AVON LOWER EVESHAM	Wychavon	West Midlands (England)
E0001255	98	GREAT STOUR - BRETT'S BAILEY BRIDGE LOW TIDE	Canterbury	South East (England)
PCNR0028	96	COLNE AT HAMPERMILL, OXHEY	Three Rivers	East of England
PTHR0107	95	THAMES AT TEDDINGTON WEIR	Richmond upon Thames	London
36768280	94	NON-TIDAL RIVER TRENT YOXALL BRIDGE	East Staffordshire	West Midlands (England)
YAR230	92	R.YARE BUCKENHAM FERRY	South Norfolk	East of England
88002065	91	RIVER MERSEY AT FLIXTON ROAD BRIDGE	Trafford	North West (England)
88002348	91	RIVER IRWELL AT FOOT BRIDGE AT SALFORD UNIVERSITY	Salford	North West (England)
Z1010706	91	AVON KEYNSHAM M	Bath and North East Somerset	South West (England)

## **Regional breakdown**

### **East Midlands**

- One or more of the 5 chemical cocktails searched for were found in 217 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 103 river and lake sites (out of 163 sites – 75%) and 114 groundwater sites (out of 197 sites – 58%)
- Of the sites where the chemical cocktails were detected 124 sites (out of 217 – 58%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: the Witham, Soar, Derwent and Dove
- Up to 77 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of chemicals detected include: Sincil dyke, the River Derwent, River Dove, River Soar, and the River Witham

### **East of England**

- One or more of the 5 chemical cocktails searched for were found in 171 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 100 river and lake sites (out of 163 sites – 61%) and 71 groundwater sites (out of 131 sites – 54%)
- Of the sites where the chemical cocktails were detected 88 sites (out of 117– 75%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: the Ouse, Nene, Lea, Waveney and Stiffkey.
- Up to 96 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of chemicals detected include: the Colne, Yare, Lee, Stiffkey, Ouse, Nene, Wensum

### **London**

- One or more of the 5 chemical cocktails searched for were found in 29 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 21 river and lake sites (out of 23 sites – 91%) and 8 groundwater sites (out of 29 sites – 28%)
- Of the sites where the chemical cocktails were detected 11 sites (out of 29 – 37%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: the Cray, Roding, Thames and Wandle.
- Up to 95 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of chemicals detected include: the Lee, Salmon Brook, Roding, THames and Wandle

### **North East**

- One or more of the 5 chemical cocktails searched for were found in 83 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 32 river and lake sites (out of 40 sites – 80%) and 51 groundwater sites (out of 64 sites – 80%)
- Of the sites where the chemical cocktails were detected 54 sites (out of 83– 65%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: Blyth, Tyne and Wansbeck
- Up to 59 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of individual chemicals detected include: the Tyne and Blyth

### **North West**

- One or more of the 5 chemical cocktails searched for were found in 239 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 106 river and lake sites (out of 152 sites – 70%) and 133 groundwater sites (out of 188 sites – 71%)
- Of the sites where the chemical cocktails were detected 154 sites (out of 239– 64%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: the Weaver, Mersey, Irwell, Wyre, Lune, Leven, Wampool, Ribble, Derwent and Eden.
- Up to 101 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of individual chemicals detected include: the Mersey, Irwell, Ribble, Weaver, Wampool, Douglas and Wyre

### **South East**

- One or more of the 5 chemical cocktails searched for were found in 322 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 204 river and lake sites (out of 213 sites – 96%) and 118 groundwater sites (out of 217 sites – 54%)
- Of the sites where the chemical cocktails were detected 110 sites (out of 322– 34%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: the Colne, Thame, Loddon, Medway, Kennet, Rother, Arun, Mole and Test
- Up to 98 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of individual chemicals detected include: Stour, Medway, Loddon, Ouse, Colne, Rother, Mole, Arun, Wey and Test

### **South West**

- One or more of the 5 chemical cocktails searched for were found in 260 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 110 river and lake sites (out of 115 sites – 96%) and 150 groundwater sites (out of 207 sites – 72%)
- Of the sites where the chemical cocktails were detected 158 sites (out of 260– 60%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: the Chelt, Teign, Cober, Stour, Torridge, Coln, Exe and Avon
- Up to 91 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of individual chemicals detected include: the Avon, Thames, Exe, Frome, Cober, Chelt, Teign and Cripps

### **West Midlands**

- One or more of the 5 chemical cocktails searched for were found in 124 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 64 river and lake sites (out of 69 sites – 93%) and 60 groundwater sites (out of 126 sites – 48%)
- Of the sites where the chemical cocktails were detected 69 sites (out of 124– 56%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: the Teme, Trent, Tame, Stour, Mill Brook, Lugg and Avon
- Up to 100 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of individual chemicals detected include: Avon, Trent, Stour, Mill brook, Teme and Lugg

### **Yorkshire and The Humber**

- One or more of the 5 chemical cocktails searched for were found in 165 river, lake and groundwater sites tested for chemicals by the Environment Agency. This includes 66 river and lake sites (out of 94 sites – 70%) and 99 groundwater sites (out of 184 sites – 54%)
- Of the sites where the chemical cocktails were detected 110 sites (out of 165– 67%) had 3 or more of the 5 chemical cocktails present
- Rivers where 3 or more of the chemical cocktails were found include: Derwent, Ancholme, Ouse, Aire, Tees and Wharfe
- Up to 78 individual chemicals were found in some rivers in the region, though actual numbers could be much higher due to the Environment Agency only testing for a limited number of chemicals.
- Rivers in the region with the highest number of chemicals detected include: Derwent, Aire, Tees, Ouse, Ancholme, Wharfe, Colne, Rother, Don and Calder