DATASHEET: Nitrate Vulnerable Zone (NVZ) designation
2017 - Surface Water

NVZ ID: S594 NVZ Name: R Stour (Worcs) - conf Smestow Bk to conf R Severn NVZ

*Publication Date: June 2016*
This document contains a summary of the evidence used to designate NVZ S594 - R Stour (Worcs) - conf Smestow Bk to conf R Severn. It was produced in June 2016 by the Environment Agency on behalf of the Secretary of State for Environment, Food and Rural Affairs.

R Stour (Worcs) - conf Smestow Bk to conf R Severn is an existing catchment designation. There are currently 10 polluted sample points in the waterbody that designates this NVZ, and, in total, 17 polluted sample points in the entire NVZ including the designating waterbody and any area upstream of the designating waterbody. Our assessment of monitoring data shows that water quality in this NVZ has remained stable in the 2017 NVZ review period compared to the previous NVZ review. Based on our assessment of monitoring data we have high confidence that the water is polluted. Our modelling assessment shows that water quality in this NVZ has remained stable in the 2017 NVZ review period compared to the previous NVZ review. Based on our modelling assessment we have low confidence that the water is polluted. Water quality has neither improved nor deteriorated sufficiently to require a change in NVZ status, therefore it is proposed that the existing designation is retained.

The contribution of agriculture to the observed nitrate pollution in this NVZ has been assessed and we are confident that agriculture is an important contributor to nitrate pollution.
Contents

1 Introduction 4
  1.1 Core principles ................................................................. 5

2 Basic information 6

3 Monitoring Evidence 9

4 Modelling Evidence 12

5 Supporting Evidence 14
  5.1 Contribution of agriculture to nitrogen losses ........................ 14
    5.1.1 Sectoral load apportionment from land use analysis inputs .... 14
    5.1.2 Sectoral load apportionment from SEPARATE framework ......... 16
    5.1.3 Sectoral load apportionment from SIMCAT-SAGIS ................. 17
  5.2 Land cover & livestock .......................................................... 18
  5.3 Agricultural load over time .................................................... 19
  5.4 Workshop discussion ............................................................ 20

6 Appendices 21
  6.1 Appendix 1 - Sample point time series graphs ......................... 21
  6.2 Appendix 2 - Discharge consent conditions ............................ 38
1 Introduction

NVZ name: R Stour (Worcs) - conf Smestow Bk to conf R Severn
NVZ ID: S594

This document provides a summary of the evidence used in proposing an area of land as one which should be, or should continue to be, designated as a Nitrate Vulnerable Zone (NVZ) for the purposes of the Nitrate Pollution Prevention Regulations 2015.

A full description of the methods used in developing the NVZ proposals is set out in the detailed methodology for surface water NVZs, available via apps.environment-agency.gov.uk/wiyby/141443.aspx. These methods were developed under the guidance of a review group convened by the Department for Environment, Food & Rural Affairs for the last NVZ review (2011-2013), which included representatives from the farming and water industries as well as independent academic experts. Minor refinements to the methods have been made for the current review.

Under the surface water method an NVZ is designated if the water is affected by pollution or could be affected by pollution.

Please note that the area of NVZ designation may change during the appeals process. The definitive NVZ area can be seen on the What’s in Your Backyard (WICYB) website apps.environment-agency.gov.uk/wiyby/141443.aspx.

The maps featured in this report are subject to at least one of the following copyright statements;
© Crown copyright and database rights 2016 Ordnance Survey 100024198.
© Environment Agency copyright and/or database rights 2016. All rights reserved.
© Centre for Ecology and Hydrology 2016.
1.1 Core principles

1. Each NVZ review takes the previous designations as its starting point and most designations are continuations of those designations.

2. Evidence of pollution is based on a combination of monitoring data, recent and longer term trends, and modelled data.

3. A water is affected by pollution if our monitoring or modelling evidence, or a combination of the two, confidently calculates that the 95\textsuperscript{th} percentile\textsuperscript{1} concentration of nitrate exceeds 50 mg/l\textsuperscript{-1} (as nitrate (NO\textsubscript{3})).

4. A water could be affected by pollution if our monitoring evidence indicates 95\textsuperscript{th} percentile concentrations will exceed 50 mg/l\textsuperscript{-1} nitrate in the near future (2020).

5. We include all inorganic nitrogen (N) compounds in our assessment, not just nitrate. 50 mg/l\textsuperscript{-1} nitrate (as NO\textsubscript{3}) is equivalent to 11.3 mg/l\textsuperscript{-1} nitrogen (as N). As nitrogen can readily transform we include all commonly monitored forms of inorganic nitrogen; nitrate, nitrite and ammonium (referred to as Total Inorganic Nitrogen (TIN) when summed). All water quality data presented here is TIN and is compared to 11.3 mg/l\textsuperscript{-1} to determine if the water is affected by pollution or could be affected by pollution.

6. If a sample point is downstream of a sewage treatment works or other point source consented discharge\textsuperscript{2} we assess whether the sample point is representative of the wider water quality of the catchment, in terms of TIN. We do not automatically discount such sample points as a comprehensive screening procedure is used to determine if a sample point should be removed from our analysis.

7. We use the Water Framework Directive river waterbodies as our units of assessment. If one part of that waterbody is affected by pollution or could be affected by pollution then the entire waterbody is designated. This is the case even if the sole monitoring point that shows evidence of pollution is in the upper (upstream) section of the waterbody and downstream monitoring points show no evidence of pollution. For ‘catchment’ designations the designated NVZ is all land that drains to the designating waterbody. For ‘waterbody’ designations the designated NVZ covers only the designating waterbody.

8. All existing designations are continued unless we can be confident that the water is no longer affected by pollution and will not become affected by pollution. We have already considered whether existing designations are eligible for removal.

9. The development of proposed designations involves close working between national and area office Environment Agency staff with quality assurance through discussions at workshops.

We review the evidence every four years, and we believe that NVZ designation is justified in the area that is described in this data sheet.

\textsuperscript{1}A 95\textsuperscript{th} percentile is the value exceeded by 5\% of samples. It is used instead of a maximum value as it is more stable and less sensitive to extreme events.

\textsuperscript{2}Consented discharge means all point source discharges that are consented to discharge to controlled waters by the Environment Agency. This includes sewage treatment works (sometimes also referred to as waste water treatment works), industrial discharges, private sewage discharges, intermittent sewage discharges, landfills & all other discharge types.
2 Basic information

Table 1: Designation summary

<table>
<thead>
<tr>
<th>NVZ</th>
<th>R Stour (Worcs) - conf Smestow Bk to conf R Severn</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVZ Name</td>
<td>NVZ ID S594</td>
</tr>
<tr>
<td>Area (km$^2$)</td>
<td>373.57</td>
</tr>
<tr>
<td>NVZ status</td>
<td>Existing</td>
</tr>
<tr>
<td>NVZ type (catchment/waterbody)</td>
<td>catchment</td>
</tr>
<tr>
<td>Designating WFD waterbody</td>
<td>GB109054044710</td>
</tr>
<tr>
<td>% of this NVZ previously designated as surface water NVZ</td>
<td>100</td>
</tr>
<tr>
<td>% of this NVZ previously designated as any NVZ</td>
<td>100</td>
</tr>
</tbody>
</table>

Designations under the surface water method use a combination of monitored and modelled information. Water quality data from our monitoring and modelling assessments are put into one of six classes, where enough data is available, that reflects how confident we are that the 95$^{th}$ percentile will exceed 11.3 mg/l$^-1$. We combine the monitoring and modelled data using the matrix shown in figure 1 to identify those waters that are affected by pollution or could be affected by pollution. The combinations marked in red indicate a new designation should be recommended where there is not an existing NVZ designation (an ‘X’ indicates that extra checks should be undertaken before a designation is proposed). Where there is already an NVZ designation, the designation is continued unless there is sufficient evidence for de-designation.

![Figure 1: Evidence matrix used to determine if waterbody is subject to nitrate pollution](image)

The 1 to 6 classes used in the matrix are explained in table 2. A class of zero is given where there are no suitable sample points within the waterbody, so a monitoring class can’t be given, or where the waterbody was not large enough to be used in the modelling assessment.
Table 2: Matrix class descriptions

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High confidence 95th percentile concentration is <strong>below</strong> 11.3 mg/l-1</td>
</tr>
<tr>
<td>2</td>
<td>Moderate confidence 95th percentile concentration is <strong>below</strong> 11.3 mg/l-1</td>
</tr>
<tr>
<td>3</td>
<td>Low confidence 95th percentile concentration is <strong>below</strong> 11.3 mg/l-1</td>
</tr>
<tr>
<td>4</td>
<td>Low confidence 95th percentile concentration is <strong>above</strong> 11.3 mg/l-1</td>
</tr>
<tr>
<td>5</td>
<td>Moderate confidence 95th percentile concentration is <strong>above</strong> 11.3 mg/l-1</td>
</tr>
<tr>
<td>6</td>
<td>High confidence 95th percentile concentration is <strong>above</strong> 11.3 mg/l-1</td>
</tr>
<tr>
<td>0</td>
<td>Monitoring or modelling classification not available</td>
</tr>
</tbody>
</table>

The designating waterbody has had the following catchment scores in the last three NVZ reviews (table 3):

Table 3: Matrix scores for the last three NVZ reviews

<table>
<thead>
<tr>
<th>Monitoring scores</th>
<th>Modelling scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>6</td>
</tr>
<tr>
<td>2013</td>
<td>6</td>
</tr>
<tr>
<td>2017</td>
<td>6</td>
</tr>
</tbody>
</table>

R Stour (Worcs) - conf Smestow Bk to conf R Severn is an existing catchment designation. Our assessment of monitoring data shows that water quality in this NVZ has remained stable in the 2017 NVZ review period compared to the previous NVZ review. Based on our assessment of monitoring data we have high confidence that the water is polluted. Our modelling assessment shows that water quality in this NVZ has remained stable in the 2017 NVZ review period compared to the previous NVZ review. Based on our modelling assessment we have low confidence that the water is polluted. Water quality has neither improved nor deteriorated sufficiently to require a change in NVZ status, therefore it is proposed that the existing designation is retained.

Figure 2 shows the area covered by this NVZ.

- The pink outline indicates the extent of this NVZ.
- The yellow area shows any surrounding area covered by other surface water NVZs.
- The black hatched area shows the designating waterbody that is either affected by pollution or could be affected by pollution.
Figure 2: Overview of designated catchment

NVZ ID; S594 - NVZ Name; R Stour (Worcs) - conf Smestow Bk to conf R Severn NVZ
### 3 Monitoring Evidence

#### Table 4: Summary of monitoring evidence

<table>
<thead>
<tr>
<th>NVZ</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NVZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of sample points in the designating waterbody</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of sample points in the entire designated NVZ</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of sample points with 95th percentile TIN greater than 11.3 mg/l in the designating waterbody</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of sample points with 95th percentile TIN greater than 11.3 mg/l in the entire designated NVZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most polluted sample point in the designating waterbody</td>
<td>23322635</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current monitored 95th percentile concentration (class)</td>
<td>21.63 mg/l (6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High confidence lower and upper bounds for current monitored 95th percentile concentration</td>
<td>20.7 mg/l - 24.67 mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate confidence lower and upper bounds for current monitored 95th percentile concentration</td>
<td>21.2 mg/l - 22.23 mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trend (future) 95th percentile concentration (class)</td>
<td>18.72 mg/l (6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High confidence lower and upper bounds for trend 95th percentile concentration</td>
<td>11.43 mg/l - 26.02 mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate confidence lower and upper bounds for trend 95th percentile concentration</td>
<td>15.85 mg/l - 21.75 mg/l</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There are currently 10 polluted sample points in the waterbody that designates this NVZ, and, in total, 17 polluted sample points in the entire NVZ including the designating waterbody and any area upstream of the designating waterbody. This is a catchment designation, only monitoring points relevant to a catchment designation are used in table 4, although all monitoring points are used in the counts at the top of table 4.

Figure 3 shows the time series of concentrations for the most polluted sample point in the designating waterbody. In figure 3 the circles represent each sample taken since 1990. The dark blue line represents the 95th percentile over time. The green bar shows the current 95th percentile. The green shaded areas show the uncertainty in the current 95th percentile, we have high confidence that the current 95th percentile lies within the light green shaded area and moderate confidence that the current 95th percentile lies within the dark green shaded area. The right most dashed blue line represents mid-2020, where it crosses the dark blue line is the future (2020) 95th percentile. The blue shaded areas from 2015 onward represent the uncertainty in the future 95th percentile, we have high confidence that the future 95th percentile lies within the light blue shaded area and moderate confidence that the future 95th percentile lies within the dark blue shaded area.

Graphs for all monitoring points in this NVZ designation are included in appendix 1.

Figure 4 shows the location of the monitoring points in the designating waterbody. The monitoring points are shown as coloured points, the colours show the monitoring class (1-6) of each point. The monitoring score per sample point is based on the highest of the current and future 95th percentiles. The monitoring score is taken from the most polluted sample point in the designating waterbody.

In figure 4, the small crosses represent the outlets of consented discharges. Any monitoring point that is too close (within the mixing zone) to a consented discharge of nitrogen compounds and therefore not representative of the water quality of the waterbody or is otherwise not representative of the water quality within the waterbody is excluded from the analysis.
Figure 3: TIN as N time series for worst sample point in designating waterbody

NVZ ID; SS94 - NVZ Name; R Stour (Worcs) - conf Smestow Bk to conf R Severn NVZ
Figure 4: Overview of monitoring locations and classes with point source locations
4 Modelling Evidence

Our modelling (referred to as the land use model) predicts the underlying risk of pollution from the land use within the proposed NVZ designation. It allows us to assess whether a waterbody is affected by pollution even if we have no monitoring data or where the monitoring data is not suitable for use in this assessment.

The land use model uses information on:

- Agricultural N losses
- Consented discharges
- Diffuse urban N losses
- Residential properties not connected to sewer networks

The water quality data used in the monitoring evidence chapter is also used in the development of the land use model.

Table 5: Summary of catchment modelling evidence

<table>
<thead>
<tr>
<th>NVZ</th>
<th>Land use model 95th percentile concentration (class)</th>
<th>14.47 (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High confidence lower and upper bounds for land use model 95th percentile concentration estimate</td>
<td>5.67 - 36.92</td>
</tr>
<tr>
<td></td>
<td>Moderate confidence lower and upper bounds for land use model 95th percentile concentration estimate</td>
<td>9.85 - 21.24</td>
</tr>
</tbody>
</table>

Figure 5 shows the concentration of the 95th percentile TIN concentration land use model prediction, plus the upper and lower, moderate and high confidence bounds in relation to 11.3 mg/l TIN.

Figure 6 shows how the model predictions vary across the designated area. If any waterbodies are not coloured on figure 6 this is because that the waterbody or the upstream area of the waterbody has an area less than 20 km². Figure 6 is included even if the land use model was not used in this designation.
Figure 6: Landuse modelling predictions
5  Supporting Evidence

5.1 Contribution of agriculture to nitrogen losses

5.1.1 Sectoral load apportionment from land use analysis inputs

We consider a range of the most important nitrogen sources in an NVZ designation in our land use analysis. Based on the data that is input to that analysis, we can estimate the contribution of each source to the total losses of nitrogen within the designated area.

We present two figures for load from consented discharges. The maximum value is based on discharge consent conditions (the conditions consented discharges may not exceed). Therefore the maximum value represents the load emitted from a combination of the greatest flow and the greatest concentration of nitrogen compounds that all consented discharges in the catchment may legally emit. The minimum value is based on information from consented discharges with flow and nitrogen concentration monitoring, so represents the most likely load from all consented discharges in the catchment.

Table 6 shows estimated load across the designated area by individual sectors. The minimum agricultural contribution is based on the maximum consented discharge value, while the maximum agricultural contribution uses minimum consented load. For the agricultural load, diffuse urban load and the unsewered residential properties load there is a single value only.

<table>
<thead>
<tr>
<th>Source</th>
<th>Minimum Agricultural Contribution (kg y⁻¹)</th>
<th>Maximum Agricultural Contribution (kg y⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consented discharges</td>
<td>1137020.55</td>
<td>942733.48</td>
</tr>
<tr>
<td>Diffuse urban</td>
<td>52065.98</td>
<td>52065.98</td>
</tr>
<tr>
<td>Unsewered residential properties</td>
<td>2398.43</td>
<td>2398.43</td>
</tr>
<tr>
<td>Agriculture</td>
<td>158529.54</td>
<td>158529.54</td>
</tr>
<tr>
<td>Total catchment load</td>
<td>1350014.51</td>
<td>1155727.44</td>
</tr>
<tr>
<td>% of total load from agriculture</td>
<td>11.00</td>
<td>13.00</td>
</tr>
</tbody>
</table>

Figures 7 and 8 shows the information in table 6 presented as percentage apportionment to individual sectors. Figure 7 shows the minimum agricultural contribution and figure 8 shows the maximum agricultural contribution.

Regardless of whether load apportionment estimates are available for this NVZ, a full list of discharges is included in appendix 2.
5.1 Contribution of agriculture to nitrogen losses

Figure 7: Percentage apportionment to sectors using the minimum agricultural load estimate and the maximum consented discharge load estimate from 2017 NVZ designation land use analysis.

Figure 8: Percentage apportionment to sectors using the maximum agricultural load estimate and the minimum consented discharge load estimate from 2017 NVZ designation land use analysis.
5.1 Contribution of agriculture to nitrogen losses

5.1.2 Sectoral load apportionment from SEPARATE framework

SEPARATE (SEctor Pollutant AppoRtionment for the AquaTic Environment) is a national scale multiple pollutant source apportionment framework developed by ADAS, Rothamsted Research, Centre for Ecology and Hydrology and the Environment Agency. SEPARATE uses data on sources of total nitrogen including agricultural practice, sewage treatment works, combined sewer overflows, storm tanks & septic tanks to apportion the load input to the aquatic environment into individual sectors.

Table 7 shows the load SEPARATE estimates is generated per sector. Figure 9 shows the same data expressed as a percentage of the total load. Note that for main river designations data is provided for the entire upstream area, while for tributary designations only data from the designating waterbody is provided.

Table 7: Load in t yr\(^{-1}\) across designated area from SEPARATE framework (2014)

<table>
<thead>
<tr>
<th>Source</th>
<th>Load (t yr(^{-1}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural</td>
<td>434.13</td>
</tr>
<tr>
<td>Bank Erosion</td>
<td>5.36</td>
</tr>
<tr>
<td>Urban Diffuse</td>
<td>29.63</td>
</tr>
<tr>
<td>STW</td>
<td>928.60</td>
</tr>
<tr>
<td>Storm Tank</td>
<td>45.36</td>
</tr>
<tr>
<td>Septic Tank</td>
<td>2.92</td>
</tr>
<tr>
<td>CSO</td>
<td>81.51</td>
</tr>
<tr>
<td>Direct Deposition</td>
<td>0.27</td>
</tr>
<tr>
<td>Groundwater</td>
<td>247.78</td>
</tr>
<tr>
<td>Waterbody Total</td>
<td>1775.55</td>
</tr>
</tbody>
</table>

Figure 9: Percentage apportionment of nitrate load across designated area from SEPARATE framework (2014)

---

5.1 Contribution of agriculture to nitrogen losses

5.1.3 Sectoral load apportionment from SIMCAT-SAGIS

SIMCAT (SIMulated CATchment) is a well-established river water quality model with a long history of use in the UK. It has recently been incorporated into a source apportionment framework, SAGIS (Source Apportionment Geographical Information System), to allow apportionment of a range of pollutants to various sectors, including agriculture. For catchment designations we provide the annual mean nitrate as N concentration SIMCAT predicts at the farthest downstream point of the proposed NVZ designation and the proportion of that concentration from diffuse sources.

Table 8: SIMCAT-SAGIS predictions for this designation

<table>
<thead>
<tr>
<th></th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual mean SIMCAT prediction nitrate as N concentration at outlet of designated area (mg/l)</td>
<td>17.45</td>
</tr>
<tr>
<td>Percentage of annual mean concentration predicted to be from diffuse source (%)</td>
<td>37.00</td>
</tr>
</tbody>
</table>

In SIMCAT-SAGIS diffuse sources include agriculture, but not solely agriculture. We provide the proportion from diffuse source figure to give context, and hopefully, corroboration to the other load apportionment methods presented above.
5.2 Land cover & livestock

We have used land cover and livestock information as part of the method to derive this designation. It is used to drive the NEAP N model⁵ and the estimate of urban N load⁶ which are both input to the land use model. We take our land cover and livestock data from the 2014 Defra June agricultural survey⁷. We have included the data below for this designation.

![Landcover by area within proposed NVZ designation from 2014 Defra agricultural survey](image)

**Table 9: Count of livestock within proposed NVZ designation from 2014 Defra agricultural survey**

<table>
<thead>
<tr>
<th>Count</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>6828</td>
</tr>
<tr>
<td>Sheep</td>
<td>25380</td>
</tr>
<tr>
<td>Pigs</td>
<td>2573</td>
</tr>
<tr>
<td>Poultry</td>
<td>20183697</td>
</tr>
<tr>
<td>Other livestock</td>
<td>1179</td>
</tr>
</tbody>
</table>

⁷Defra, 2015. Agriculture in the United Kingdom 2014. HMSO.
5.3 Agricultural load over time

Figure 11 shows how the nitrate available for leaching from agricultural sources, as predicted by the ADAS NEAP N model, varies over time for this NVZ designation. The data is presented relative to a baseline (the year 2000). The NEAP N model uses long term average climate data, so changes in nitrate available for leaching is due primarily to changes in cropping and livestock within the NVZ.

Figure 11: Nitrate available for leaching across NVZ S594 relative to 2000 baseline due to cropping and livestock

---


9NEAP N has been developed over time so a portion of any temporal variation may be due to changes to the model or model parameters.
5.4 Workshop discussion

As part of the designation process the Environment Agency held a series of workshops with EA area office staff and invited partners, including representatives from the farming industry.

The purpose of the workshops was to discuss any proposed NVZ designations where the evidence supporting designation was uncertain or contradictory, or where there were new or modified designations. We were not able to discuss every designation, but where discussion did take place abridged notes are provided below.

This designation was not considered a priority for workshop discussions.
6 Appendices

6.1 Appendix 1 - Sample point time series graphs

This page has been left intentionally blank.
Figure A1: 23314180 - R.STOUR AT STOURPORT

Figure A2: 23315520 - R. STOUR AT FALLING SANDS
Figure A3: 23316800 - R STOUR WEST BRANCH US STOURPORT RD BR

Figure A4: 23318100 - R STOUR AT WORCESTER RD BR (EAST)
6.1 Appendix 1 - Sample point time series graphs

Figure A5: 23320580 - R. STOUR AT WOLVERLEY

Figure A6: 23322635 - R. STOUR AT WHITTINGTON LOCK
Figure A7: 23323040 - R.STOUR AT KINVER WATERWORKS BRIDGE

Figure A8: 23323300 - RIVER STOUR - STOURTON
Figure A9: 23323700 - R. STOUR AT WORDSLEY

Figure A10: 23325540 - R. STOUR D/S FREEHOLD STW
6.1 Appendix 1 - Sample point time series graphs

Figure A11: 23326180 - R. STOUR AT MAYPOLE HILL

Figure A12: 23326430 - R. STOUR AT BRIDGE STREET CRADLEY
6.1 Appendix 1 - Sample point time series graphs

Figure A13: 23349100 - HOO BROOK

![Graph showing concentration of nitrate in water over time for HOO BROOK.](image)

Figure A14: 23349950 - HOO BROOK U/S KIDDERMINSTER

![Graph showing concentration of nitrate in water over time for HOO BROOK U/S KIDDERMINSTER.](image)
6.1 Appendix 1 - Sample point time series graphs

Figure A15: 23351300 - HOO BROOK AT DRAYTON ROAD BELBROUGHTON

Figure A16: 23416120 - BLAKEDOWN BROOK AT SWC VIADUCT U/S CULV
Figure A17: 23416260 - BLAKEDOWN BROOK AT BROADWATERS BRIDGE

Figure A18: 23416980 - BLAKEDOWN BROOK U/S BLAKEDOWN STW
Figure A19: 23475020 - DRAKELOW BROOK AT WOLVERLEY RD BRIDGE

Figure A20: 23525180 - SMESTOW BROOK AT PRESTWOOD
Figure A21: 23525980 - SMESTOW BROOK AT HINKSFORD PARK

Figure A22: 23526180 - SMESTOW BROOK AT SWINDON ROAD BRIDGE
6.1 Appendix 1 - Sample point time series graphs

Figure A23: 23527180 - SMESTOW BROOK AT WOODFORD LANE

Site: 23527180MI

![Figure A23](image)

Figure A24: 23528300 - SMESTOW BROOK AT FM BRDG FURNACE GRANGE

Site: 23528300MI

![Figure A24](image)
6.1 Appendix 1 - Sample point time series graphs

Figure A25: 23529180 - SMESTOW BROOK AT COMPTON ROAD BRIDGE

Figure A26: 23529780 - SMESTOW BROOK AT ALDERSLEY STADIUM
Figure A27: 23596120 - BOBS/HOLBECHE BROOK AT HINKSFORD BRIDGE

Figure A28: 23619030 - BOBS BROOK - D/S LOWER GORNAL STW
Figure A29: 23619190 - BOBS BROOK - U/S LOWER GORNAL STW

Figure A30: 23647020 - WOM BROOK AT THE SMESTOW CONFLUENCE
Figure A31: 23647100 - WOM BROOK AT HEATH HOUSE BRIDGE B4176
6.2 Appendix 2 - Discharge consent conditions

We present two figures for load from consented discharges (points sources). The maximum value is based on discharge consent conditions (the conditions consented discharges may not legally exceed). Therefore the maximum value represents the maximum possible legal load emitted from each discharge. The minimum value is based on information from flow and water quality monitoring and represents the most likely load from each discharge. Where there is not flow and water quality monitoring in place the minimum and maximum loads will be the same.

Table 10: Summary of sources of nitrogen compounds within NVZ S594

<table>
<thead>
<tr>
<th>Source type</th>
<th>Source sub-type</th>
<th>Source name</th>
<th>Lower load (N kg yr(^{-1}))</th>
<th>Upper load (N kg yr(^{-1}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>TREATED SEWAGE EFFLUENT FROM KIDDERMINSTER (OLDINGTON) STW, STOURPORT RD, KIDDERMINSTER, WORCS</td>
<td>188599</td>
<td>188599</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Multiple)</td>
<td>TREATED EFFLUENT FROM DUNSLEY HALL FARM BARNES, DUNSLEY ROAD, KINVER, SOUTH STAFFS, DY7 6LU</td>
<td>87.6</td>
<td>87.6</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL EFFLUENT FROM ROUNDHILL STW, KINVER, STOURBRIDGE</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL EFFLUENT FROM ROUNDHILL STW, KINVER, STOURBRIDGE</td>
<td>375665</td>
<td>375665</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>NO 6 DISCHARGE FROM SPECIALISED HEAT TREATMENT LTD KINDSWINFORD</td>
<td>0</td>
<td>1734</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>NO 5 DISCHARGE FROM SPECIALISED HEAT TREATMENT LTD KINDSWINFORD</td>
<td>0</td>
<td>1734</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>NO 4 DISCHARGE FROM SPECIALISED HEAT TREATMENT LTD KINGSWINFORD</td>
<td>0</td>
<td>1734</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>NO 3 DISCHARGE FROM SPECIALISED HEAT TREATMENT LTD KINGSWINFORD</td>
<td>0</td>
<td>1734</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>NO 2 DISCHARGE FROM SPECIALISED HEAT TREATMENT LTD KINGSWINFORD</td>
<td>0</td>
<td>1734</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>DISCHARGE 2, CHLORINATED COOLING WATER FROM PRESTWOOD PUMPING STATION, STOURTON, STOURBRIDGE</td>
<td>0</td>
<td>410</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>CHLORINATED DIRECT COOLING WATER TRADE EFFLUENT FROM ASHWOOD PUMPING STATION, KINGSWINFORD, STOURBRIDGE</td>
<td>0</td>
<td>63.07</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>CHLORINATED COOLING WATER TRADE EFFLUENT FROM CHURCHILL PUMPING STATION, ISMERE, KIDDERMINSTER</td>
<td>0</td>
<td>63.07</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr⁻¹)</td>
<td>Upper load (N kg yr⁻¹)</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>CHLORINATED COOLING WATER TRADE EFFLUENT FROM HINKSFORD PUMPING STATION, BRIERLEY HILL SECONDARY TREATED SEWAGE EFFLUENT FROM GOTHERSLEY FARM, BARNES &amp; GOTHERSLEY HALL, GOTHERSLEY LANE, STOURTON, STOURBRIDGE, DY7 5AZ</td>
<td>0</td>
<td>63.07</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Multiple)</td>
<td>SECONDARY TREATED SEWAGE EFFLUENT FROM GOTHERSLEY FARM, BARNES &amp; GOTHERSLEY HALL, GOTHERSLEY LANE, STOURTON, STOURBRIDGE, DY7 5AZ</td>
<td>0</td>
<td>44.15</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT THE PARK ATTWOOD CLINIC TRIPLETT SEWAGE EFFLUENT FROM GOTHERSLEY FARM, BARNES &amp; GOTHERSLEY HALL, GOTHERSLEY LANE, STOURTON, STOURBRIDGE, DY7 5AZ</td>
<td>0</td>
<td>110.4</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT STOURTON FARM STOURBRIDGE SEWAGE EFFLUENT FROM GOTHERSLEY FARM, BARNES &amp; GOTHERSLEY HALL, GOTHERSLEY LANE, STOURTON, STOURBRIDGE, DY7 5AZ</td>
<td>0</td>
<td>39.42</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>PRIVATE SEWAGE EFFLUENT FROM CHURCHILL PUMPING STATION STP, ISMERE, KIDDERMINSTER TRADE &amp; SEWAGE EFFLUENT FROM THE COOKLEY ARMS SEPTIC TANK, WOLVERHAMPTON ROAD, COOKLEY, KIDDERMINSTER STP FINAL EFFLUENT FROM THE OLD BUSH INN AT HINKSFORD</td>
<td>0</td>
<td>21.28</td>
</tr>
<tr>
<td>Point source</td>
<td>Public Houses and Bars</td>
<td>PRIVATE SEWAGE EFFLUENT FROM CHURCHILL PUMPING STATION STP, ISMERE, KIDDERMINSTER TRADE &amp; SEWAGE EFFLUENT FROM THE COOKLEY ARMS SEPTIC TANK, WOLVERHAMPTON ROAD, COOKLEY, KIDDERMINSTER STP FINAL EFFLUENT FROM THE OLD BUSH INN AT HINKSFORD</td>
<td>0</td>
<td>35.47</td>
</tr>
<tr>
<td>Point source</td>
<td>Public Houses and Bars</td>
<td>PRIVATE SEWAGE EFFLUENT FROM CHURCHILL PUMPING STATION STP, ISMERE, KIDDERMINSTER TRADE &amp; SEWAGE EFFLUENT FROM THE COOKLEY ARMS SEPTIC TANK, WOLVERHAMPTON ROAD, COOKLEY, KIDDERMINSTER STP FINAL EFFLUENT FROM THE OLD BUSH INN AT HINKSFORD</td>
<td>0</td>
<td>33.11</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT FROM ASHWOOD NURSERIES</td>
<td>0</td>
<td>31.53</td>
</tr>
<tr>
<td>Point source</td>
<td>Public Houses and Bars</td>
<td>FULLY TREATED FROM THE NAVIGATION INN KINGSWINFORD</td>
<td>0</td>
<td>29.17</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT RIVERSIDE COTTAGE LEA LANE WOLVERLEY</td>
<td>0</td>
<td>23.65</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>PRIVATE SEWAGE EFFLUENT FROM COTTAGES AT ASHWOOD PUMPING STATION, KINGSWINFORD, STOURBRIDGE DISCHARGE 1, PRIVATE SEWAGE EFFLUENT FROM PRESTWOOD PUMPING STATION STP, STOURTON, STOURBRIDGE</td>
<td>0</td>
<td>18.13</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>PR1VATE SEWAGE EFFLUENT FROM PRESTWOOD PUMPING STATION STP, STOURTON, STOURBRIDGE</td>
<td>0</td>
<td>15.76</td>
</tr>
<tr>
<td>Diffuse - urban</td>
<td>Diffuse urban N</td>
<td>Various losses from urban areas</td>
<td>52066</td>
<td>52066</td>
</tr>
<tr>
<td>Diffuse - agricultural</td>
<td>Arable land</td>
<td>Cropping practices, applied fertilisers and atmospheric deposition to arable land</td>
<td>111681</td>
<td>111681</td>
</tr>
<tr>
<td>Diffuse - agricultural</td>
<td>Permanent grassland</td>
<td>Losses from permanent grassland</td>
<td>37231</td>
<td>37231</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM VALE HEAD FARM STP, COMPTON ROAD, KINVER, Staffordshire</td>
<td>126.5</td>
<td>126.5</td>
</tr>
</tbody>
</table>
### Appendix 2 - Discharge consent conditions

<table>
<thead>
<tr>
<th>Source type</th>
<th>Source sub-type</th>
<th>Source name</th>
<th>Lower load (N kg yr⁻¹)</th>
<th>Upper load (N kg yr⁻¹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT CLENT HILL CARAVAN PARK</td>
<td>264.6</td>
<td>264.6</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL HUMUS TANK EFFLUENT FROM BELBROUGHTON STW</td>
<td>5993</td>
<td>5993</td>
</tr>
<tr>
<td>Diffuse - agricultural</td>
<td>Rough grazing land</td>
<td>Losses from rough grazing land</td>
<td>7658</td>
<td>7658</td>
</tr>
<tr>
<td>Diffuse - other</td>
<td>Woodland and inland water</td>
<td>Losses from woodland and inland water</td>
<td>1959</td>
<td>1959</td>
</tr>
<tr>
<td>Diffuse - septic tanks</td>
<td>Septic tanks N</td>
<td>Discharges from septic tanks for residential tanks</td>
<td>2398</td>
<td>2398</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>PRIVATE SEWAGE EFFLUENT FROM HINKSFORD PUMPING STATION STP, BRIERLEY HILL</td>
<td>0</td>
<td>7.88</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>PRIVATE SEWAGE EFFLUENT FROM ASHWOOD PUMPING STATION STP, KINGSWINFORD, STOURBRIDGE</td>
<td>0</td>
<td>7.88</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT OUTLET 1 FROM ASHWOOD MARINA KINGSWINFORD</td>
<td>0</td>
<td>7.88</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>OUTLET 2 FULLY TREATED FROM ASHWOOD MARINA KINGSWINFORD</td>
<td>0</td>
<td>4.33</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>OUTLET 3 FULLY TREATED FROM ASHWOOD MARINA KINGSWINFORD</td>
<td>0</td>
<td>4.33</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>TREATED SEWAGE EFFLUENT FROM KINVER STW, WINDSOR HOLLOWAY, KNIVER, STOURBRIDGE</td>
<td>12278</td>
<td>12278</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>SETTLED STORM SEWAGE FROM KINVER STW, WINDSOR HOLLOWAY, KNIVER, STOURBRIDGE</td>
<td>0</td>
<td>10147</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>SURFACE AND GROUND WATER FROM HINTON PERRY DAVENHILL LTD BRIERLEY HILL</td>
<td>0</td>
<td>11182</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT TO LAND AT THE FOX INN SHIPLEY</td>
<td>87.6</td>
<td>87.6</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL EFFLUENT FROM LOWER GORNAL STW, HIMLEY RD, HIMLEY, DUDLEY</td>
<td>66454</td>
<td>66454</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>SETTLED STORM SEWAGE FROM LOWER GORNAL STW, HIMLEY ROAD, HIMLEY, DUDLEY</td>
<td>74615</td>
<td>74615</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL EFFLUENT FROM LOWER GORNAL STW, HIMLEY RD, HIMLEY, DUDLEY</td>
<td>66454</td>
<td>66454</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>SETTLED STORM SEWAGE FROM LOWER GORNAL STW, HIMLEY ROAD, HIMLEY, DUDLEY</td>
<td>74615</td>
<td>74615</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Multiple)</td>
<td>ORTON FARM BARNS STP LOWER PENN</td>
<td>65.7</td>
<td>65.7</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL HUMUS EFFLUENT FROM GOSPEL END STW, SEDGLEY</td>
<td>15781</td>
<td>15781</td>
</tr>
<tr>
<td>Point source</td>
<td>Recreational and Cultural</td>
<td>PRIVATE SEWAGE EFFLUENT FROM OAK LANE CARAVAN PARK STP, KINGSWINFORD, WEST MIDLANDS</td>
<td>93.62</td>
<td>93.62</td>
</tr>
<tr>
<td>Point source</td>
<td>Trade (Unknown/Other)</td>
<td>STSE &amp; TE FROM BARNETT HILL GARDEN CENTRE STP, WORCESTER ROAD, CLENT, STOURBRIDGE, WEST MIDLANDS</td>
<td>32.85</td>
<td>32.85</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT FROM NEWBROOK FARM FRANKLEY</td>
<td>27.37</td>
<td>27.37</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL HUMUS EFFLUENT FROM LOWER PENN STW S. STAFFS</td>
<td>341.6</td>
<td>341.6</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL HUMUS EFFLUENT AT HIMLEY STW</td>
<td>394.4</td>
<td>394.4</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL SEWAGE EFFLUENT FROM BLAKEDOWN STW</td>
<td>4674</td>
<td>4674</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>MISC WASTE PROCESS AT NORTON TREATMENT WORKS</td>
<td>0</td>
<td>9461</td>
</tr>
<tr>
<td>Point source</td>
<td>Hospitals</td>
<td>STP FINAL EFFLUENT AT COMPLETELINK, PRESTWOOD NR STOURBRIDGE</td>
<td>0</td>
<td>394.2</td>
</tr>
<tr>
<td>Point source</td>
<td>Brewing and Malting</td>
<td>RINSE WATER TO LAND FROM ENVILLE BREWERY</td>
<td>0</td>
<td>63.07</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>PUMPED QUARRY WATER FROM ENVILLE ROAD QUARRY WALL HEATH</td>
<td>0</td>
<td>5913</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>TRADE EFFLUENT (PUMPED GROUNDWATER) FROM MINERAL WORKINGS ADJACENT OAK FARM, HIMLEY, LOWER GORNAL</td>
<td>0</td>
<td>4336</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>COMPRESSOR COOLING WATER</td>
<td>0</td>
<td>2168</td>
</tr>
<tr>
<td>Point source</td>
<td>Reservoir/Borehole Site</td>
<td>CONDITIONING &amp; FILTER BACKWASH WATER TRADE EFFLUENT FROM BELLINGTON PUMPING STATION, NEAR BISSEL WOOD, BLAKEDOWN</td>
<td>0</td>
<td>2050</td>
</tr>
</tbody>
</table>

NVZ ID; S594 - NVZ Name; R Stour (Worcs) - conf Smestow Bk to conf R Severn NVZ
<table>
<thead>
<tr>
<th>Source type</th>
<th>Source sub-type</th>
<th>Source name</th>
<th>Lower load (N kg yr(^{-1}))</th>
<th>Upper load (N kg yr(^{-1}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point source</td>
<td>Iron and Steel Industries</td>
<td>TRADE EFFLUENT (TREATED CONTAMINATED G/W &amp; SITE DRAINAGE) FROM FORMER STEEL WORKS SITE TREATMENT PLANT, COOMBS RD, HALESWEN</td>
<td>0</td>
<td>1695</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT SMESTOW INDUSTRIAL ESTATE</td>
<td>0</td>
<td>231.8</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>COOLING WATER FROM UNIT 6 SHENSTONE TRADING ESTATE HALESWEN</td>
<td>0</td>
<td>134</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT THE HOMESTEAD, PRESTWOOD NR STOURBRIDGE</td>
<td>0</td>
<td>130.1</td>
</tr>
<tr>
<td>Point source</td>
<td>Horticult. Est. Nursery Gdns.</td>
<td>SECONDARY TREATED SEWAGE EFFLUENT FROM GARDENLANDS GARDEN AND LEISURE, BRIDGNORTH ROAD, SHIPLEY, WOLVERHAMP-TON, WV6 7EJ</td>
<td>0</td>
<td>118.3</td>
</tr>
<tr>
<td>Point source</td>
<td>Garden centres</td>
<td>GARDENLANDS GARDEN &amp; LEISURE STP SHIPLEY</td>
<td>0</td>
<td>118.3</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>STP FINAL EFFLUENT AT THE CROOKED HOUSE COPPICE LANE</td>
<td>0</td>
<td>118.3</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Public Houses and Bars</td>
<td>THE CROOKED HOUSE, HIMLEY. STP</td>
<td>0</td>
<td>94.6</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewerage Network - Pumping Station - others</td>
<td>STP FINAL EFFLUENT FROM FRANKLEY GREEN STP</td>
<td>0</td>
<td>80.65</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT THE BELL INN BELBROUGHTON</td>
<td>0</td>
<td>78.84</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENTET AT THE BELL HEATH STUDY CENTRE BELBROUGHTON</td>
<td>0</td>
<td>78.84</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>DISCHARGE A COOLING WATER FROM CREW &amp; SONS LTD DUDLEY</td>
<td>0</td>
<td>43.36</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>DISCHARGE B COOLING WATER FROM CREW &amp; SONS LTD DUDLEY</td>
<td>0</td>
<td>43.36</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>PROCESS WATER SITE DRAINAGE FROM DUDLEY MIXED CONCRETE</td>
<td>0</td>
<td>39.42</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT FROM NEWBROOK FARM FRANKLEY</td>
<td>0</td>
<td>39.42</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT THE MANCHESTER INN ROMSLEY HALESOWEN</td>
<td>0</td>
<td>39.42</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Multiple)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM MERE HALL FARM BUILDINGS STP, MERE LANE, ENVILLE, STOURBRIDGE, WEST MIDLANDS</td>
<td>0</td>
<td>37.84</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Multiple)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM THE DINGLE STP, LEY CLOSE, PEDMORE, STOURBRIDGE</td>
<td>0</td>
<td>35.47</td>
</tr>
<tr>
<td>Point source</td>
<td>Trade (Unknown/Other)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM OFFICES AT BARBERRY HOUSE STP, BROMSGROVE ROAD, BELBROUGHTON, NR STOURBRIDGE</td>
<td>0</td>
<td>33.11</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Multiple)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM 4 NEW PROPERTIES STP, GREAT MOOR FARM, GREAT MOOR LANE, PATTINGHAM, STAFFORDSHIRE</td>
<td>0</td>
<td>31.53</td>
</tr>
<tr>
<td>Point source</td>
<td>Production and Distribution of Electricity</td>
<td>STSE IN ADMIXTURE WITH SITE DRAINAGE FROM OUTFALL 1 AT PENN SUBSTATION, LOWER PENN, WOLVERHAMPTON</td>
<td>0</td>
<td>30.74</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>PRIVATE SEWAGE EFFLUENT FROM 4 PROPOSED DWELLINGS AT BRAKEMILL FARM STP, BRAKEMILL, HAGLEY, STOURBRIDGE, WEST MIDLANDS STP FINAL EFFLUENT AT THE STABLES COTTAGE CHADDESLEY CORBETT</td>
<td>0</td>
<td>26.8</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT DEANSFORD FARM KIDDERMINSTER BELBROUGHTON</td>
<td>0</td>
<td>23.65</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT THE LAWN FARM BELBROUGHTON</td>
<td>0</td>
<td>23.65</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Multiple)</td>
<td>TREATED SEWAGE EFFLUENT, STP AT TREE TROPS AND GRESHAM HOUSE, PERTON ROAD, WIGHTWICK</td>
<td>0</td>
<td>22.07</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Multiple)</td>
<td>TREATED SEWAGE EFFLUENT FROM MILL BARN, FAIRMEAD AND THE NOOK STP, BROMSGROVE ROAD, BELBROUGHTON, STOURBRIDGE</td>
<td>0</td>
<td>16.55</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT HIGH HARcourt FARM CLENT</td>
<td>0</td>
<td>15.76</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works -</td>
<td>STP FINAL EFFLUENT AT THE HOLLY BUSH INN BELBROUGHTON</td>
<td>0</td>
<td>15.76</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works -</td>
<td>STP FINAL EFFLUENT AT 1 &amp; 2 GORSE GREEN LANE COTTAGE BELBROUGHTON</td>
<td>0</td>
<td>15.76</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>STP FINAL EFFLUENT FROM NEWTOWN FARM BELBROUGHTON</td>
<td>0</td>
<td>15.76</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works -</td>
<td>PRIVATE SEWAGE EFFLUENT FROM DRAKELOW FARM STP, SLADD LANE, WOLVERLEY, WORCESTER-SHIRE</td>
<td>0</td>
<td>15.76</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works -</td>
<td>STP FINAL EFFLUENT AT ROMSLEY HILL GRANGE HALESOWEN</td>
<td>0</td>
<td>143.5</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>TREATED SEWAGE EFFLUENT FROM HAYLEY GREEN BARN S STP, HAGLEY ROAD, HAYLEY GREEN, HALESOWEN, WEST MIDLANDS</td>
<td>0</td>
<td>12.61</td>
</tr>
<tr>
<td>Point source</td>
<td>Water Treatment Works</td>
<td>STP FINAL EFFLUENT AT HAGLEY P/S</td>
<td>0</td>
<td>11.03</td>
</tr>
<tr>
<td>Point source</td>
<td>Trade (Unknown/Other)</td>
<td>SEPTIC TANK &amp; TRADE EFFLUENT FROM THE PET RESORT, HIMLEY LANE, HIMLEY, SOUTH STAFFORDSHIRE</td>
<td>0</td>
<td>10.24</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM 3 IVY COTTAGES STP, PENNCROFT LANE, PENN COMMON, WOLVERHAMPTON</td>
<td>0</td>
<td>9.46</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT SPRING GLEN HALESWEN</td>
<td>0</td>
<td>9.46</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT NTEL DTES Romsley Services Halesowen</td>
<td>0</td>
<td>7.88</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT FROM ASHWOOD MARINA KINGSWINFORD</td>
<td>0</td>
<td>7.88</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT STAKEBRIDGE FARM HAGLEY</td>
<td>0</td>
<td>7.88</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage disposal works - other</td>
<td>STP FINAL EFFLUENT AT ROSE COTTAGE BELBROUGHTON</td>
<td>0</td>
<td>7.88</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM HIMLEY FIELD COTTAGE STP, HIMLEY LANE, HIMLEY, SOUTH STAFFORDSHIRE PRIVATE SEWAGE EFFLUENT FROM TH BRINKS STP. ST KENELMS PASS, CLENT.WEST MIDLANDS</td>
<td>0</td>
<td>7.88</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr$$^{-1}$$)</td>
<td>Upper load (N kg yr$$^{-1}$$)</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM MILL BARN STP, BROMSGROVE ROAD, BELBROUGHTON, STOURBRIDGE, MILL BARN STP, BROMSGROVE ROAD, BELBROUGHTON, STOURBRIDGE</td>
<td>0</td>
<td>6.3</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM STIRLING LODGE STP, QUANTRY LANE, BELBROUGHTON, WORCESTERSHIRE</td>
<td>0</td>
<td>3.94</td>
</tr>
<tr>
<td>Point source</td>
<td>Domestic Property (Single)</td>
<td>PRIVATE SEWAGE EFFLUENT FROM RUMBOW COTTAGE STP, RUMBOW LANE, WALTON HILL, CLENT, WORCESTERSHIRE</td>
<td>0</td>
<td>3.94</td>
</tr>
<tr>
<td>Point source</td>
<td>Production and Distribution of Electricity</td>
<td>TREATED SEWAGE EFFLUENT &amp; SITE DRAINAGE (OUTFALL 3) FROM PENN SUBSTATION, LOWER PENN, WOLVERHAMPTON</td>
<td>0</td>
<td>13.32</td>
</tr>
<tr>
<td>Point source</td>
<td>Undefined or Other</td>
<td>OUTLET 2 SD &amp; CC CONDENSATE AT ARC PIPES LTD WOMBOURNE WOLVERHAMPTON</td>
<td>0</td>
<td>33.82</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>TSE FROM DIMMINGSDALE STW, PENNSTONE LANE, LOWER PENN, WOLVERHAMPTON</td>
<td>0</td>
<td>40.99</td>
</tr>
<tr>
<td>Source type</td>
<td>Source sub-type</td>
<td>Source name</td>
<td>Lower load (N kg yr(^{-1}))</td>
<td>Upper load (N kg yr(^{-1}))</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL HUMUS EFFLUENT AT HIMLEY HALL STW</td>
<td>0</td>
<td>123</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>TREATED SEWAGE EFFLUENT FROM ENVILLE STW, BROWNS LANE, ENVILLE, STOURBRIDGE</td>
<td>0</td>
<td>461.2</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewerage Network - Sewers - water company</td>
<td>TRADE EFFLUENT (DIRECT COOLING WTR/SURFACE WTR) FROM WOMBOURNE INDUSTRIAL ESTATE, HEATH MILL ROAD, WOMBOURNE</td>
<td>0</td>
<td>2050</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>FINAL HUMUS EFFLUENT FROM TRECOTT STW</td>
<td>56083</td>
<td>56083</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>STORM TANK EFFLUENT FROM TRECOTT STW</td>
<td>0</td>
<td>66210</td>
</tr>
<tr>
<td>Point source</td>
<td>Sewage Disposal Works - water company</td>
<td>STORM SEWAGE OVERFLOW FROM TRECOTT STW</td>
<td>0</td>
<td>66210</td>
</tr>
</tbody>
</table>
End of document
Would you like to find out more about us or about your environment?

Then call us on
03708 506 506 (Monday to Friday, 8am to 6pm)

e-mail
enquiries@environment-agency.gov.uk

or visit our website

incident hotline 0800 807060 (24 hours)
floodline 0345 988 1188 (24 hours)

Find out about call charges: www.gov.uk/call-charges

Environment first: Are you viewing this on screen? Please consider the environment and only print if absolutely necessary. If you are reading a paper copy, please don’t forget to reuse and recycle if possible.