

Appendix 4.3 - Hydrology

Appendix 4.3.1 Environment Agency River Quality Reports

Appendix 4.3.3 Environment Agency - environmental search



2009 2008 2007 2006 2005 2004 >>

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2009 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | 2.291 | 4.968 | 5.205 | | 36 | E |
| Dissolved oxygen (percentage saturation) | 80.56 | 18.05 | | 57.42 | 36 | D |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| NTAXA | 5 | 26.6 | .19 | 98 | | f |
| ASPT | 3 | 4.93 | .61 | 59 | | e |
| Overall | | | | | 5 | f |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | 18.44 | | 36 | 3 |

Phosphates:

| | Average | Standard deviation | Number of samples | Grade |
|-------------------|---------|--------------------|-------------------|-------|
| Phosphates (mg/l) | .3 | | 36 | 5 |



River Quality

Site details

| | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2008 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | 2.693 | 5.699 | 6.121 | | 36 | E |
| Dissolved oxygen (percentage saturation) | 77.64 | 16.45 | | 56.56 | 36 | D |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| NTAXA | 5 | 26.6 | .19 | 98 | | f |
| ASPT | 3 | 4.93 | .61 | 59 | | e |
| Overall | | | | | 5 | f |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | 20.18 | | 36 | 4 |

Phosphates:

| | Average | Standard deviation | Number of samples | Grade |
|-------------------|---------|--------------------|-------------------|-------|
| Phosphates (mg/l) | .35 | | 36 | 5 |

2009
 2008
 2007
 2006
 2005
 2004
 >>

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2007 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | 1.35 | 3.469 | 3.037 | | 36 | E |
| Dissolved oxygen (percentage saturation) | 74.03 | 12.81 | | 57.61 | 36 | D |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| NTAXA | 5 | 26.6 | .19 | 98 | | f |
| ASPT | 3 | 4.93 | .61 | 59 | | e |
| Overall | | | | | 5 | f |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | 20.01 | | 36 | 4 |

Phosphates:

| | Average | Standard deviation | Number of samples | Grade |
|-------------------|---------|--------------------|-------------------|-------|
| Phosphates (mg/l) | .22 | | 36 | 5 |



River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2006 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .803 | 3.128 | 1.694 | | 36 | D |
| Dissolved oxygen (percentage saturation) | 75.72 | 12.12 | | 60.2 | 36 | C |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| Overall | | | | | | f |

| Nitrates: | | | | |
|-----------------|---------|--------------------|-------------------|-------|
| | | | | |
| | Average | Standard deviation | Number of samples | Grade |
| Nitrates (mg/l) | 21.06 | | 36 | 4 |

| Phosphates: | | | | |
|-------------------|---------|--------------------|-------------------|-------|
| | | | | |
| | Average | Standard deviation | Number of samples | Grade |
| Phosphates (mg/l) | .17 | | 36 | 4 |



River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2005 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .333 | .339 | .688 | | 36 | C |
| Dissolved oxygen (percentage saturation) | 74.94 | 13.03 | | 58.25 | 36 | D |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| Overall | | | | | | f |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | | | | 4 |

Phosphates:

| | Average | Standard deviation | Number of samples | Grade |
|-------------------|---------|--------------------|-------------------|-------|
| Phosphates (mg/l) | | | | 4 |

2009 2008 2007 2006 2005 2004 >>

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2004 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .364 | .356 | .743 | | 38 | C |
| Dissolved oxygen (percentage saturation) | 82.38 | 13.76 | | 64.75 | 34 | C |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| Overall | | | | | | f |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | | | | 4 |

Phosphates:

| | Average | Standard deviation | Number of samples | Grade |
|-------------------|---------|--------------------|-------------------|-------|
| Phosphates (mg/l) | | | | 4 |



<<
 2003
 2002
 2001
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River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2003 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mg/l) | .314 | .331 | .655 | | 32 | C |
| Dissolved oxygen (percentage saturation) | 80.77 | 14.71 | | 61.92 | 30 | C |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| Overall | | | | | | f |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | | | | 4 |

Phosphates:

| | Average | Standard deviation | Number of samples | Grade |
|-------------------|---------|--------------------|-------------------|-------|
| Phosphates (mg/l) | | | | 4 |

<< 2003 2002 2001 2000 1999 1998 >>
River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2002 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .29 | .256 | .575 | | 32 | B |
| Dissolved oxygen (percentage saturation) | 83.07 | 13.25 | | 66.09 | 30 | C |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| Overall | | | | | | f |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | | | | 4 |

Phosphates:

| | Average | Standard deviation | Number of samples | Grade |
|-------------------|---------|--------------------|-------------------|-------|
| Phosphates (mg/l) | | | | 4 |

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2001 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .34 | .407 | .731 | | 32 | C |
| Dissolved oxygen (percentage saturation) | 81.22 | 14.27 | | 62.94 | 32 | C |

| Nitrates: | | | | |
|-----------------|---------|--------------------|-------------------|-------|
| | | | | |
| | Average | Standard deviation | Number of samples | Grade |
| Nitrates (mg/l) | | | | 4 |

| Phosphates: | | | | |
|-------------------|---------|--------------------|-------------------|-------|
| | | | | |
| | Average | Standard deviation | Number of samples | Grade |
| Phosphates (mg/l) | | | | 4 |



<< 2003 2002 2001 2000 1999 1998 >>

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:402000, Y:410300 |
| Downstream grid ref. | X:401700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 2000 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .54 | .856 | 1.213 | | 36 | C |
| Dissolved oxygen (percentage saturation) | 86.71 | 22.42 | | 57.98 | 34 | D |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| Overall | | | | | | f |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | 23.77 | | 36 | 4 |

Phosphates:

| | Average | Standard deviation | Number of samples | Grade |
|-------------------|---------|--------------------|-------------------|-------|
| Phosphates (mg/l) | .2 | | 36 | 4 |

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 1999 |

| Chemistry: | | | | | | |
|---|---------|--------------------|---------------|---------------|-------------------|-------|
| <p>The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.</p> <p>Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.</p> <p>Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.</p> | | | | | | |
| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
| Ammonia (mg/l) | .736 | 1.614 | 1.672 | | 37 | D |
| Dissolved oxygen (percentage saturation) | 86.8 | 22.93 | | 57.42 | 35 | D |

<<
 2003
 2002
 2001
 2000
 1999
 1998
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River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 1998 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .757 | 1.613 | 1.72 | | 36 | D |
| Dissolved oxygen (percentage saturation) | 88.88 | 21.45 | | 61.39 | 34 | C |

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 1997 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .64 | 1.444 | 1.452 | | 36 | D |
| Dissolved oxygen (percentage saturation) | 89.53 | 18.98 | | 65.21 | 36 | C |



River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:402000, Y:410300 |
| Downstream grid ref. | X:401700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 1996 |

| Chemistry: | | | | | | |
|---|---------|--------------------|---------------|---------------|-------------------|-------|
| <p>The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.</p> <p>Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.</p> <p>Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.</p> | | | | | | |
| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
| Ammonia (mgN/l) | .468 | .327 | .86 | | 35 | C |
| Dissolved oxygen (percentage saturation) | 92.05 | 17.28 | | 69.9 | 35 | C |



River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 1995 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .586 | .796 | 1.289 | | 38 | C |
| Dissolved oxygen (percentage saturation) | 93.75 | 18.86 | | 69.58 | 35 | C |

Biology:

We test the samples by comparing the macro-invertebrates (small animals that can be seen with the naked eye) with the range of species we would expect to find in the river if it was not polluted and assign a grade. We take into account natural changes that happen such as geology and flow.

Grade A (very good) - The biology is similar to that expected for an unpolluted river

Grade F (bad) - The biology is limited to a small number of species very tolerant of pollution.

| | Observed | Expected | Observed/expected | Probability grade % | Season code | Grade |
|---------|----------|----------|-------------------|---------------------|-------------|-------|
| Overall | | | | | | e |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | | | | 4 |

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 1994 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .804 | 1.402 | 1.819 | | 35 | D |
| Dissolved oxygen (percentage saturation) | 91.34 | 15.24 | | 71.8 | 34 | B |

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 1993 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted.

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | .753 | 1.369 | 1.707 | | 37 | D |
| Dissolved oxygen (percentage saturation) | 90.75 | 16.82 | | 69.2 | 32 | C |



<< 1997 1996 1995 1994 1993 1990

River Quality

| Site details | |
|----------------------|-------------------------------------|
| River name | Brumby Beck |
| River stretch | Scunthorpe Works To B. Steel Outlet |
| Upstream grid ref. | X:492000, Y:410300 |
| Downstream grid ref. | X:491700, Y:409500 |
| Stretch length | 1.5 Km |
| Reporting year | 1990 |

Chemistry:

The results for each site are averaged and percentiles are calculated. We then assign an overall grade according to the lowest grade achieved in any of the three tests.

Grade A (very good) - These rivers have natural ecosystems and make very good salmonid and cyprinid fisheries. They may be used for any type of water abstraction including potable supply.

Grade F (bad) - These rivers have severely restricted ecosystems and are very polluted

| | Average | Standard deviation | Percentile 90 | Percentile 10 | Number of samples | Grade |
|--|---------|--------------------|---------------|---------------|-------------------|-------|
| Ammonia (mgN/l) | 1.35 | 3.2 | 3.058 | | 38 | E |
| Dissolved oxygen (percentage saturation) | 100.64 | 28.54 | | 64.06 | 34 | C |

Nitrates:

| | Average | Standard deviation | Number of samples | Grade |
|-----------------|---------|--------------------|-------------------|-------|
| Nitrates (mg/l) | | | 4 | |



Karen Robinson
North Lincolnshire Council

Our Ref: CS 31322/EI/JR

Date: 23rd February 2011

Dear Karen

Request for information – Environmental Search - 3 sites - see attached maps SE 90349 10627, 90675 10212 & 91181 09562

Thank you for your e-mail requesting information about the above.

There are no current water abstraction licences found within a 300 metre radius of the above site, we do not record unlicensed abstractions which includes abstractions of under 20cubic metres a day.

PHASE 1

There are no discharge consents listed within 250 metres of area 1 to my knowledge.

We are aware of only 1 water pollution incident within 250 metres of the given area 1, not to controlled waters, available on NIRS. Details as follows:

NIRS 00380002: 24/02/2006 - approx 500L of gas-oil leaked to ground from storage tank. Some made it's way to a nearby pond. Not controlled water. A Site Warning was issued at the time and extensive remedial work was undertaken.

PHASE 2

There are no discharge consents listed within 250 metres of area 2 to my knowledge.

There are no water pollution incidents listed on NIRS within 250 metres of area 2 to my knowledge.

PHASE 3

Discharge consents within 250 metres of area 3 information below:-

Consent Number: T/81/45129/O

Date Issued: 31-Mar-2008

Date Effective: 31-Mar-2008

Date Reviewed: 31-Mar-2012

Consent Comment: Was T8145129O.

Environment Agency, Trentside Offices, Scarrington Road, West Bridgford, Nottingham, NG2 5FA

Customer services line: 08708 506 506

Email: enquiries@environment-agency.gov.uk

www.environment-agency.gov.uk

Short Name: GRANGE LANE
 Long Name: GRANGE LANE NORTH STORM OVERFLOW
 Address 1: GRANGE LANE NORTH
 Address 2: SCUNTHORPE
 Address 4: SCUNTHORPE
 Discharge Site: SE9146009481
 NGR:
 Easting: 491460
 Northing: 409481
 Discharge Type: Sewerage Network - Sewers - water company
 EA Region: MI

Consent Number: TSC4133
 Version Number: 1
 Date Issued: 03-Sep-2010
 Date Effective: 03-Sep-2010
 Consent Comment: RESOLVING APPEALED SCHEDULE ISSUED 14/04/09 BY
 VARIATION OF TDC SCHD

Short Name: WOODHOUSE RD
 Long Name: WOODHOUSE RD
 Address 1: WOODHOUSE RD
 Address 4: SCUNTHORPE
 Post Code: DN16 1BD
 Discharge Site: SE9138009460
 NGR:
 Easting: 491380
 Northing: 409460
 Discharge Type: Sewerage Network - Sewers - water company
 EA Region: MI

Consent Number: T/81/40163/O
 Version Number: 1
 Date Issued: 30-Jun-1995
 Date Effective: 30-Jun-1995
 Consent Comment: Was T8140163O.
 Short Name: WOODHOUSE RD
 Long Name: WOODHOUSE ROAD PUMPING STATION
 Address 1: WOODHOUSE ROAD
 Address 4: SCUNTHORPE
 Discharge Site: SE9163009510
 NGR:
 Easting: 491630
 Northing: 409510
 Discharge Type: Undefined or Other
 EA Region: MI

Consent Number: T/81/45434/TG
 Version Number: 1
 Date Issued: 02-May-2001
 Date Effective: 02-May-2001

Consent Comment: COMBINED SEWAGE AND LABORATORY EFFLUENT

Short Name: APPLEBY
 Long Name: THE APPLEBY GROUP LTD
 Address 1: BRIGG ROAD
 Address 2: SCUNTHORPE
 Address 3: NORTH LINCOLNSHIRE
 Address 4: ENGLAND
 Discharge Site SE9173009200
 NGR:
 Easting: 491730
 Northing: 409200
 Discharge Type: Iron and Steel Industries
 EA Region: MI

Please find details below with regards to reported pollution incidents within 250 metres of the three areas.

Details as follows:-

NIRS 638228: 02/12/2008- Firefighting run-off following commercial fire. No further action was taken.

NIRS 283249: 15/12/2004- Spillage of battery acid. Washed by FRS into highways drain. Severn Trent Water Ltd, and North Lincs Highways informed.

Date: 3 April 2004

NIRS:227411 – Incident on cottage beck road – Fire at Golden Wonder Crisp Factory. Info only from Humberside Fire service, non attendance by EA.

Date: 12 June 2006

NIRS: 406364 – Incident on cottage beck road – Fire at cottage beck Civic Amenity site. Fire not attended by EA but site visit made at a later date.

Date: 25 October 2006

NIRS: 445821 – Incident on cottage beck road – Fire at cottage beck civic amenity site (vandals setting skips alight). Fire not attended. Ongoing work to improve site security.

Date: 23 December 2008

NIRS: 642592 – Incident on cottage beck road, Fire service reporting a fire on Lincolnshire Council cleansing dept depot. Fire not attended by EA.

Date: 15 June 2006

NIRS: 407630 – Incident on cottage beck road, Fire on cottage beck Civic Amenity site. Site attended by EA, fire started by unknown intruder. Humberside fire service attended, further security improvements to be made to the site.

Date: 15 May 2010

NIRS: 780179 – Incident on colin road, portacabin on fire on land owned by North Lincolnshire council. Fire attended by EA, drains were sealed and only a moderate accumulation of water, and contamination was minimal.

Date: 11 October 2004

NIRS: 271238 – Unauthorised waste management activity – Unauthorised ELV activity discovered on colin road. Site visited and appropriate enforcement action carried out.

Date: 23/08/2001

NIRS:26404 – Incident on Midland road, Fire reported by Humberside fire service involving a large wood fire. Fire not attended by EA.

Date: 16/10/2006

NIRS: 444866 – Incident involving dust on motor vehicles on Brigg road. Dust was found to contain slag and a small amount of iron bearing material. Corus investigated the complaint.

Date: 24 February 2006

NIRS: 380002 – Incident at PD Logistics, Midland road, oil leaking from storage tank and entering the old railway embankment. Site attended and measure put in place to remediate and clear oil.

Permitted sites:-

Cottage Beck civic amenity site, cottage beck road. Environmental Permit: 43122 - Type: civic amenity site

Cottage Beck Transfer station, cottage beck road. Environmental Permit: 43128 - Type: Transfer station

LAS Metals Ltd, Banbury road. Environmental Permit: 43105 - Type: Metal recycling

Site 1

There are no active PPC permits/installations within any of the site boundary.

Site 2

There are 2 active permits to the east. Capro Merchant Bar Plc, Permit Ref:- BR8832IK and Tata Steel UK Ltd, Scunthorpe Integrated Iron & Steel Works, Permit Ref:- BL3838IW.

Site 3

There are no active PPC permits/installations within any of the site boundary.

Yours sincerely,

STEVEN TUPPER
Team Leader - External Relations

For further information please contact External Relations on 0115 846 3691/3696

Fax:- 0115 982 8319

Direct e-mail midseast@environment-agency.gov.uk

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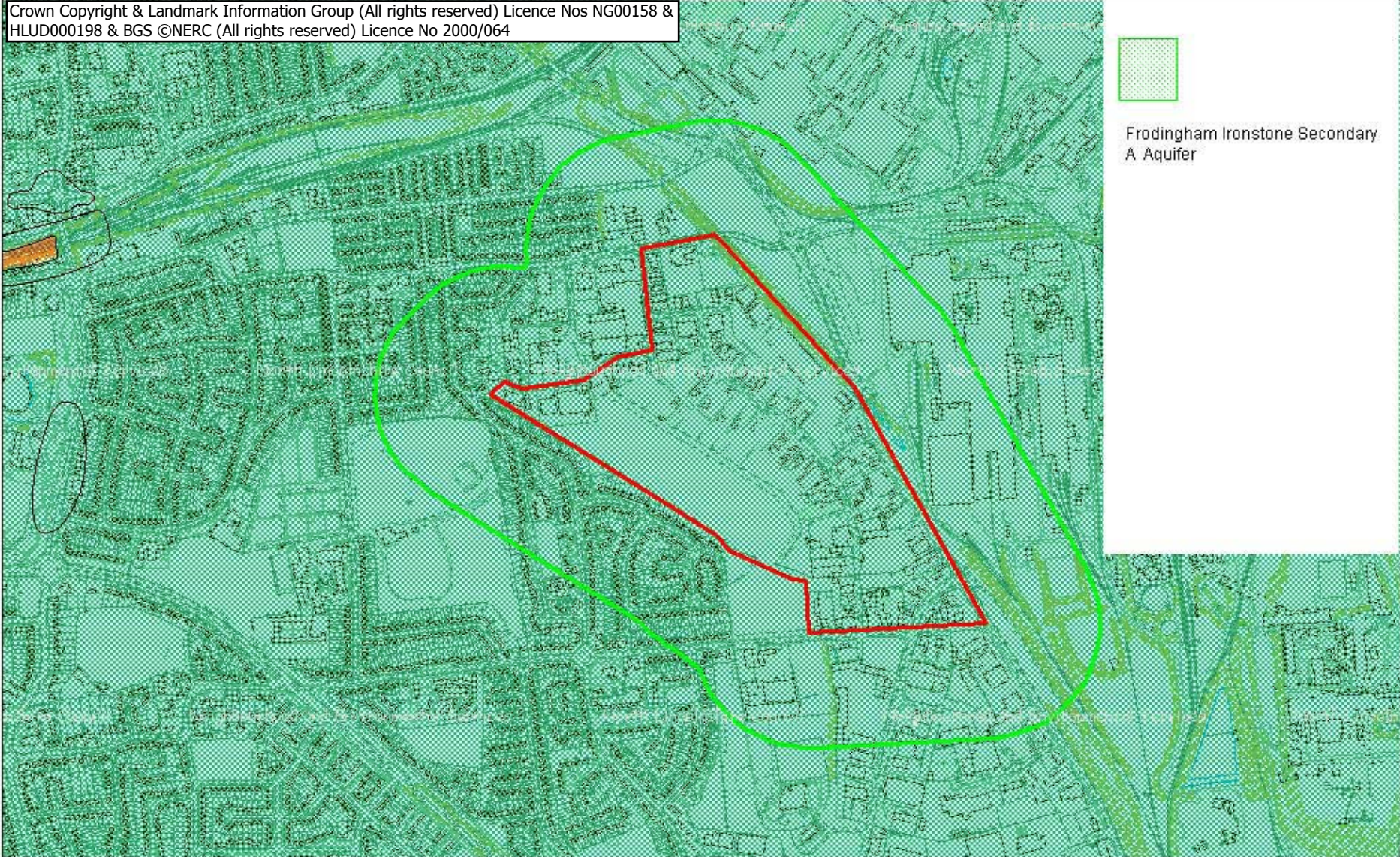
Appendix 4.4 - Hydrogeology

Appendix 4.4A Solid Geology Aquifer Designation

Appendix 4.4B Superficial Geology Aquifer Designation

Appendix 4.4A

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|---|-------------------------|
| Drawing Title: Soilid Geology Aquifer Designation | |
| Drawn by: LH | Date: 02/04/2012 |
| Scale: NOT TO SCALE | OS Grid Ref: SE90591029 |



NORTH LINCOLNSHIRE COUNCIL

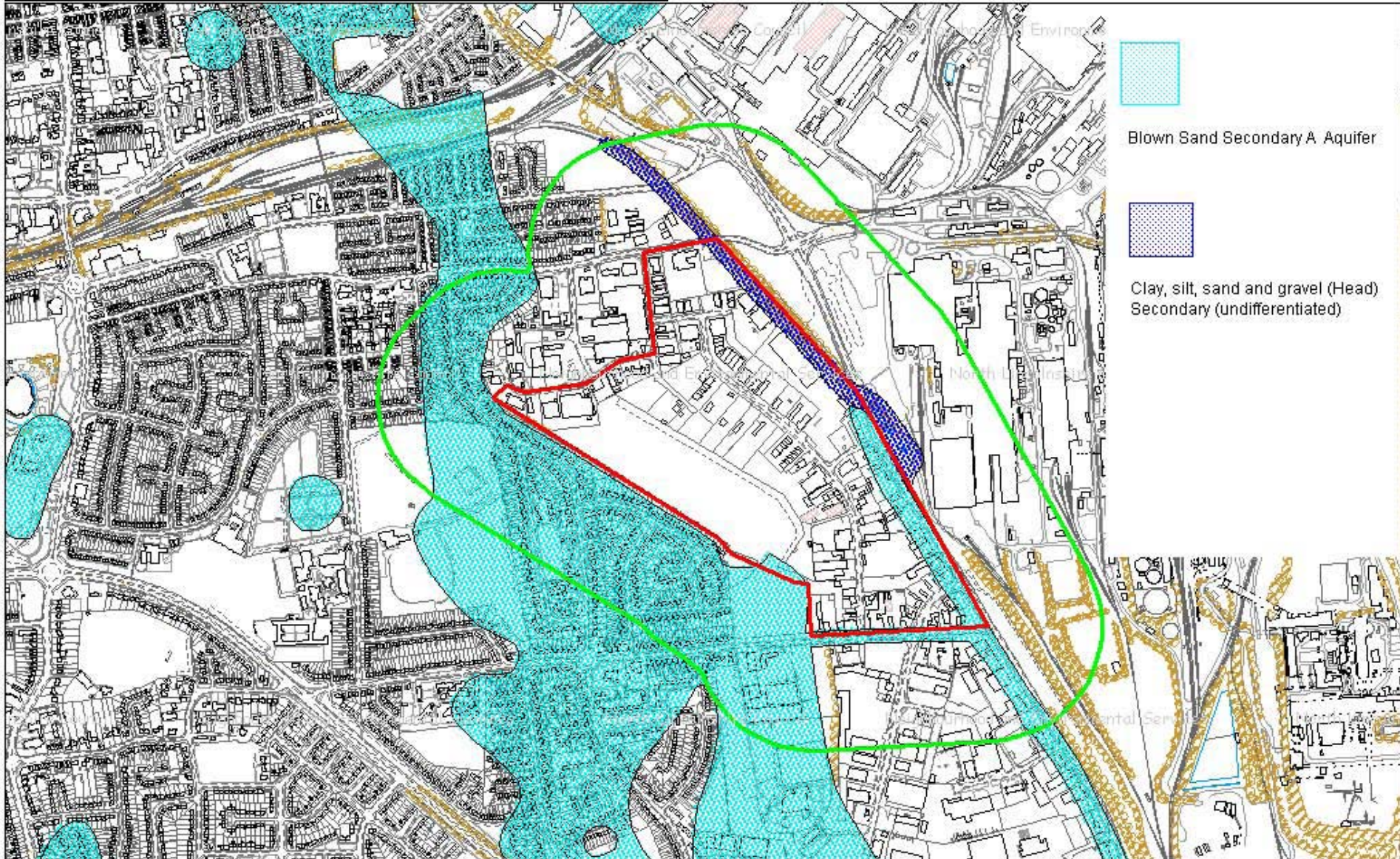
Neighbourhood and Environmental Services



Head of Service,
Keith Ford (Hons) ACIEB, MESH, MInstEM

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Appendix 4.4B

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-  Blown Sand Secondary A Aquifer
-  Clay, silt, sand and gravel (Head) Secondary (undifferentiated)



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|--|-------------------------|
| Drawing Title: Superficial Geology Aquifer Designation | |
| Drawn by: LH | Date: 02/04/2012 |
| Scale: NOT TO SCALE | OS Grid Ref: SE90591029 |



Neighbourhood and Environmental Services
 Head of Service,
Keith Ford (Hons) MCIB, MRSH, MInstM

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